**SIGACCESS Annual Report**

**July 2020 - June 2021****Submitted by: Shari Trewin, Past Chair**

***SIGACCESS supports the international community of researchers and professionals applying computing and information technologies to empower individuals with disabilities and older adults. The SIG also promotes the professional interests of students and computing personnel with disabilities and strives to educate the public to support careers for people with disabilities.***

## SIGACCESS Health and Viability

Now celebrating its 50th year, SIGACCESS continues to have both healthy membership and fund balance, allowing it to support workshops, create new accessibility resources, and initiate new scholarships. In 2020, attendance at our flagship ASSETS conference set a new record.

This was an election year for SIGACCESS, and the full slate of candidates speaks to the energy and enthusiasm of the community. The incoming SIGACCESS leadership are longtime supporters and volunteers within the SIG, with a deep understanding of its mission, and commitment to the field.

Accessibility continues to grow as a research field, with increasing numbers of accessibility papers being presented at related conferences. ASSETS remains the premier venue for accessibility research work that is deeply rooted in the disability community. Although technology has changed beyond recognition, SIGACCESS remains as relevant today as when it was founded 50 years ago.

## Diversity, Equity, and Inclusion

Last year SIGACCESS committed 100% of its projected 2020 revenue to tackle both racism and ableism in accessibility research. We issued an open call to gather community input on priorities. As a result of this process, we decided to focus on diversity of our community. We initiated a [Diversity and Inclusion Scholarship](https://assets20.sigaccess.org/d_i_scholarships.html) for the ASSETS 2020 conference. The scholarship covers registration for the (virtual) conference, and is intended to support practitioners, researchers, members of advocacy groups, individuals with disabilities or neurological difference who are interested in the field of computers and accessibility, to actively participate in the ASSETS conference.

The Diversity and Inclusion Scholarship aims to reach out to diverse communities that are underrepresented in the accessibility research field. Examples include, but are not limited to, faculty and students from historically Black and Hispanic-serving institutions in the United States, practitioners working in developing regions, members of Indigenous communities, or individuals bringing LGBTQ+ perspectives to accessible computing. Increasing participation from these communities will contribute to the academic perspective of ASSETS and help create a more supportive, welcoming and inclusive ASSETS conference. The scholarship was actively advertised among these communities, and 42 scholarships were awarded. The scholarship will continue in 2021 in the same form.

To help diversify the community leadership, an open call was made for participation in the ASSETS 2020 Organizing Committee, with 30% of the committee members coming from this call. Attention was paid to diversity in both the organizing and program committees, and the conference had Diversity and Inclusion Chairs for the first time (in addition to several Accessibility Chairs).

The SIGACCESS election was advertised openly. The six candidates for the three positions were gender balanced, represented four different countries, and included disability and LGBTQ representation.

## SIGACCESS Awards

In 2020, the **SIGACCESS Award for Outstanding Contributions in Accessibility** was given to Professor Jonathan Lazar, of the College of Information Studies (iSchool) at the University of Maryland, where he is Associate Director of the Trace Center, and core faculty in the Human-Computer Interaction Lab (HCIL). The award recognized his life-long dedication to the goal of accessible technologies and digital content through his research, education, advocacy, policy and legal work.

The **ASSETS 2020 Best Paper** award went to Leah Findlater and Lotus Zhang of the University of Washington, for their work “[Input accessibility: A large dataset and summary analysis of age, motor ability and input performance](https://dl.acm.org/doi/10.1145/3373625.3417031)”. Their dataset captures input performance with a mouse and/or touchscreen from over 700 participants across a range of ages, including people with motor impairments, and its availability should help to accelerate our understanding of the interplay between these and other factors in mouse and touch screen usage.

The **ASSETS 2020 Best Student Paper** was awarded to Megan Hofmann, Devva Kasnitz, Jennifer Mankoff and Cynthia Bennett of Carnegie Mellon University and the University of Washington, for their powerful analysis of lived experiences of researchers with disabilities in the fields of accessibility and disability studies. Their paper, ”[Living disability theory: Reflections on access, research, and design](https://dl.acm.org/doi/10.1145/3373625.3416996),” explores ableism in research, oversimplification of disability, and human relationships around disability, and suggests paths toward more strongly integrating disability studies perspectives and disabled people into accessibility research.

## Significant New Work in Accessibility

Continuing a trend in recent years, there was an increasing number of papers at the ASSETS'20 conference on research relating to artificial intelligence, large datasets, and virtual/augmented/mixed reality technologies. For instance, full-length technical papers included:

* "AIGuide: An augmented reality hand guidance application for people with visual impairments" by Nelson Daniel Troncoso Aldas, Sooyeon Lee, Chonghan Lee, Mary Beth Rosson, John M. Carroll, Vijaykrishnan Narayanan.
* "Exploring Smartwatch-based Deep Learning Approaches to Support Sound Awareness for Deaf and Hard of Hearing Users" by Dhruv Jain, Hung Ngo, Pratyush Patel, Steven Goodman, Leah Findlater, Jon Froehlich
* "Exploring Collection of Sign Language Datasets: Privacy, Participation, and Model Performance" by Danielle Bragg, Oscar Koller, Naomi Caselli, William Thies
* "Input Accessibility: A Large Dataset and Summary Analysis of Age, Motor Ability and Input Performance" by Leah Findlater, Lotus Zhang (Best paper winner)
* "Making Mobile Augmented Reality Applications Accessible" by Jaylin Herskovitz, Jason Wu, Samuel White, Amy Pavel, Gabriel Reyes, Anhong Guo, Jeffrey Bigham.
* "'I just went into it assuming that I wouldn’t be able to have the full experience': Understanding the Accessibility of Virtual Reality for People with Limited Mobility" by Martez Mott, John Tang, Shaun Kane, Edward Cutrell, Meredith Ringel Morris

In addition, there has been an emerging trend whereby research in the field of computing accessibility has been enriched by perspectives from the field of disability studies, as well as auto-ethnographic research among authors with disabilities. For instance, full-length technical papers included:

* "Living Disability Theory: Reflections on Access, Research, and Design" by Megan Hofmann, Devva Kasnitz, Jennifer Mankoff, Cynthia L Bennett (Best student paper award winner)
* "Access Differential and Inequitable Access: Inaccessibility for Doctoral Students in Computing" by Kristen Shinohara, Mick McQuaid, Nayeri Jacobo
* "Navigating Graduate School with a Disability: A Trio-Ethnography" by Dhruv Jain, Venkatesh Potluri, Ather Sharif
* "Smooth Sailing? Autoethnography of Recreational Travel by a Blind Person" by Kate Stephens, Matthew Butler, Leona M Holloway, Cagatay Goncu, Kim Marriott

Since an adjustment to the call for papers language of the ASSETS conference a few years ago which indicated that the conference welcomed papers discussing research on teaching the topic of accessibility among computing students, there has also been increasing numbers of papers in this area. For instance, full-length technical papers included:

* "Comparison of Methods for Teaching Accessibility in University Computing Courses" by Qiwen Zhao, Vaishnavi Mande, Paula Conn, Sedeeq Al-khazraji, Kristen Shinohara, Stephanie Ludi, Matt Huenerfauth.

## Conference Activity

Our flagship conference, ASSETS 2020, originally planned to be held in Athens, Greece, was held virtually. It was chaired by Tiago Guerreiro (University of Lisbon, Portugal) with Hugo Nicolau (INESC-ID, Portugal), and Karyn Moffatt (McGill University, Canada) as Program Chairs. The virtual format was carefully designed to give an accessible experience for attendees, using a combination of prerecorded presentations with captions, Zoom, and Discord for persistent conversations around the work presented.

This year, we helped to grow and diversify the field of accessibility through the ACM Student Research Competition, the ASSETS Doctoral Consortium (sponsored by NSF), a mentoring program for new authors, and the previously mentioned diversity awards. ASSETS 2020 also featured user experience reports and a user experience panel on [“lockdown experiences”](https://dl.acm.org/doi/abs/10.1145/3477315.3477317), bringing the lived experience of individuals experiencing disabilities to the research community.

In addition to a [mentor program](https://assets20.sigaccess.org/call_for_mentors.html) for new authors, ASSETS 2020 also offered for the first time an [accessibility mentorship program](https://assets20.sigaccess.org/accessibility_mentorship.html), where authors could be paired with someone to help them learn how to make their papers and presentations accessible.

## SIGACCESS Programs

With the Covid-19 pandemic sending ACM Conferences online, it became critical to understand how to make virtual conferences accessible, and share that knowledge across ACM. This year, we commissioned a new resource for ACM conference organizers: [Accessible Virtual Conferences](https://www.sigaccess.org/accessible-virtual-conferences/). This comprehensive guide reviews the aspects of disability and assistive technology that are relevant to online events, then provides practical guidance covering planning, technical setup and presentations, with links to useful resources. In addition, we have built and are maintaining an informal community document with information about [accessibility of specific virtual conference platforms](https://docs.google.com/document/d/1jvSV5L5pQXAbAOHtPeb-LVVHygzKTmB95vCx9NJzj4U/edit?usp=sharing), and requirements for these platforms.

To mark SIGACCESS’ 50th year, we commissioned a history research project, which gathered interviews with prominent members of the SIG, and historical information. The report from this project is in preparation.

## Key Issues

Virtual conferences pose different accessibility challenges to physical ones, and for some people are much easier to access. Having run a virtual conference in 2020 and planning another for 2021, these events have and will include individuals with disabilities who may not have been able to attend an in-person event, as well as individuals from communities that are under-represented at our physical conferences. However, they can also be less engaging with reduced opportunities for community building and making connections, and this can be exacerbated by access barriers. A significant challenge going forward is how to retain the advantages of virtual events while meeting the demand for a return to physical events and maintaining a strong community, in the presence of huge disparities in access to covid vaccines and levels of infection around the world. From an accessibility perspective, organizing a hybrid event is the work of two separate events, and we have yet to determine the most accessible model for such events. With the goal of leading the way, ASSETS 2022 will be a hybrid event. We will explore ways of creating accessible hybrid events that support both broad access and effective community building.

**SIGACT Annual Report**

**July 2020 - June 2021**

SIGACT EC 2018-2021 (Eric Allender, Shuchi Chawla, Nicole Immorlica, Samir Khuller (chair), Bobby Kleinberg)

**SIGACT Mission Statement:**

The primary mission of ACM SIGACT (Association for Computing Machinery Special Interest Group on Algorithms and Computation Theory) is to foster and promote the discovery and dissemination of high quality research in the domain of theoretical computer science. The field of theoretical computer science is the rigorous study of all computational phenomena - natural, artificial or man-made. This includes the diverse areas of algorithms, data structures, complexity theory, distributed computation, parallel computation, VLSI, machine learning, computational biology, computational geometry, information theory, cryptography, quantum computation, computational number theory and algebra, program semantics and verification, automata theory, and the study of randomness. Work in this field is often distinguished by its emphasis on mathematical technique and rigor.

# Awards

SIGACT gives several awards each year, and this year we added several new STOC Test of Time Awards. These are awarded for papers published approximately 30, 20 and 10 years ago with significant impact over that period.

* 2021 Gödel Prize: The 2021 Gödel Prize is jointly awarded to the following three papers.
  + Andrei Bulatov: The Complexity of the Counting Constraint Satisfaction Problem. J. ACM 60(5): 34:1-34:41 (2013).
  + Martin E. Dyer and David Richerby: An Effective Dichotomy for the Counting Constraint Satisfaction Problem. SIAM J. Computing. 42(3): 1245-1274 (2013).
  + Jin-Yi Cai and Xi Chen: Complexity of Counting CSP with Complex Weights J.ACM 64(3): 19:1– 19:39 (2017).

Constraint satisfaction is a subject of central significance in computer science, since a very large number of combinatorial problems, starting from Boolean Satisfiability and Graph Coloring, can be phrased as constraint satisfaction problems (CSP). The papers above, taken together, are the culmination of a large body of work on the

classification of counting complexity of CSPs and prove an all-encompassing Complexity Dichotomy Theorem for counting CSP-type problems that are expressible as a partition function. The class of problems that the final form of this dichotomy classifies is exceedingly broad. It includes all counting CSPs, all types of graph homomorphisms (undirected or directed, unweighted or weighted), and spin systems (and thus a large variety of problems from statistical physics).

Examples include counting vertex covers, independent sets, antichains, graph colorings, the Ising model, the Potts model, the q-particle Widom-Rowlinson model, the q-type Beach model, and more. For all these problems this theorem gives a complexity dichotomy classification: Every problem in the class is either solvable in polynomial time or is #P-hard.

Award Committee:

Samson Abramsky, Nikhil Bansal, Robert Krauthgamer, Ronitt Rubinfeld, Daniel Spielman (chair) and David Zuckerman.

* 2021 Knuth Prize: The 2021 Donald E. Knuth Prize is awarded to **Moshe Y. Vardi** of Rice University for outstanding contributions that apply mathematical logic to multiple fundamental areas of computer science. Vardi’s work has greatly increased our understanding of myriad computational systems. It has also led to significant practical applications such as industrial hardware and software verification. The major themes of Vardi’s contributions are the use of automata theory and logics of programs to algorithmically prove correctness of system designs; the analysis of database issues – including query evaluation complexity, data updates, and others – using finite-model theory; characterizations of complexity classes such as P in terms of logical expressions; and the analysis of multi-agent systems such as distributed computation systems, via epistemic logic. Testimony to the central significance of this body of work is Vardi’s citation count, well over 53,000 (all citation counts are from Google Scholar, May 2021). Automata-theoretic verification of system design. A key result, among others, is presented in “Reasoning about infinite computations” (with P. Wolper, FOCS 1983, Information and Computation, 1994, Gödel Prize 2000). The paper transforms statements about the correctness of a system into equivalent statements about the behavior of a finite automaton that has infinite length input words or infinite input trees. This sparked interest in such automata, e.g., Buchi automata. This automata-based approach laid the basis of automated design checkers such as Bell Lab’s SPIN, winner of the 2001 ACM Software System Award for systems with lasting influence. The elegant technical details of the paper required new results concerning both automata and logics of programs. Exponential time bounds achieved by this approach improve much higher bounds (including non-elementary time bounds) of other approaches. A follow-up paper, “An automata-theoretic approach to automatic program verification” (with P. Wolper, LICS 1986, 2006 LICS Test-of-Time Award, over 2100 citations) showed how the approach yields optimal model-checking algorithms. All this work led to the 2006 ACM Kanellakis Award for Theory and Practice. Other industrial tools rely on Vardi’s work on the development of languages for verification, the Property Specification Language (PSL) and System

Verilog Assertions (SVA). Database theory. “The complexity of relational query languages” (STOC 1982) analyzed the computational complexity of the two query languages of relational databases, relational calculus and relational algebra, as well as extensions of both languages. The paper currently has over 1800 citations. “Conjunctive-query containment and constraint satisfaction” (with P. Kolaitis, J. CSS 2000) shows the equivalence of the two problems in the title, the first a central issue in databases and the second a basic tool in artificial intelligence. The paper also obtains new complexity results for both problems. The paper won the 2008 ACM PODS Test-of-Time Award. Theoretical results on data integration and data exchange (e.g., "On the foundations of the universal relation model", TODS 1984, with D. Maier and J.D. Ullman) have been implemented in commercial systems such as IBM’s Data Websphere Interchange. Descriptive computational complexity. The above-cited STOC 1982 paper also presents a characterization of the complexity class P, specifically P is the class of languages expressible in first-order logic with a least fixed point operator (known as “the Immerman-Vardi Theorem”, derived independently also by N. Immerman). Such characterizations of complexity classes in terms of logical expressibility, the goal of descriptive computational complexity, give us basic insights into computation and computability. The paper won a 1982 IBM Outstanding Innovation Award. Vardi and T. Feder studied the computational complexity of constraint satisfaction problems (STOC 1993, SIAM

J. Comput. 1998 with over 1100 citations). The paper won SIGLOG’s 2018 Alonzo Church Award for Outstanding Contributions to Logic and Computation. In particular it posed the Dichotomy Conjecture that every CSP problem is either in P or is NP-complete. Their evidence for the conjecture stimulated much further research and it was finally proved by others (proof completed independently by A. Bulatov and D. Zhuk, 2017). Knowledge in distributed systems. Vardi and coauthors developed a widely applicable theory about facts known or unknown to various agents in a shared environment. This issue is of fundamental importance for distributed computation, as well as diverse areas including economics and artificial intelligence. The theory is based on various logical systems that model knowledge, and gives tools to design, analyze, and verify correctness of multi-agent systems. Research papers (such as Halpern, Vardi, J.CSS 1989) culminated in the book “Reasoning about knowledge” (Fagin, Moses, Halpern, Vardi, 1995 and 2003) with over 5400 citations. Vardi’s contributions through technical service include establishing and chairing the Federated Logic Conference, chairing numerous program committees, and Editor-in-Chief of the reinvigorated Communications of the ACM. He has supervised 31 doctoral and post-doctoral students. Moshe Vardi is well-deserving of the Donald E. Knuth Prize awarded for “high-impact, seminal contributions to the foundations of computer science”.

Award Committee: Hal Gabow (chair), Noam Nisan, Ronitt Rubinfeld, Dana Randall, Madhu Sudan and Andy Yao.

* 2020 ACM Paris Kanellakis Theory and Practice Award Yossi Azar, Tel Aviv University; Andrei Broder, Google Research; Anna Karlin, University of

Washington, Michael Mitzenmacher, Harvard University; and Eli Upfal, Brown University, receive the ACM Paris Kanellakis Theory and Practice Award for the discovery and analysis of balanced allocations, known as the power of two choices, and their extensive applications to practice.

Azar, Broder, Karlin, Mitzenmacher and Upfal introduced the Balanced Allocations framework, also known as the power of two choices paradigm, an elegant theoretical work that had a widespread practical impact.

When *n* balls are thrown into *n* bins chosen uniformly at random, it is known that with high probability, the maximum load on any bin is bounded by (lg n/lg lg n) (1+o(1)). Azar, Broder, Karlin, and Upfal (STOC 1994) proved that adding a little bit of choice makes a big difference. When throwing each ball, instead of choosing one bin at random, choose two bins at random, and then place the ball in the bin with the lesser load. This minor change brings on an exponential improvement; now with high probability, the maximal load in any bin is bounded by (lg lg n/lg 2)+O(1).

In the same work, they have shown that, if each ball has *d* choices, then the maximum load drops with high probability to (ln ln n/ ln d)+O(1). These results were greatly extended by Mitzenmacher in his 1996 PhD dissertation, where he removed the sequential setting, and developed a framework for using the power of two choices in queueing systems.

Since bins and balls are the basic model for analyzing data structures, such as hashing or processes like load balancing of jobs in servers, it is not surprising that the power of two choices that requires only a local decision rather than global coordination has led to a wide range of practical applications. These include i- Google's web index, Akamai’s overlay routing network, and highly reliable distributed data storage systems used by Microsoft and Dropbox, which are all based on variants of the power of two choices paradigm. There are many other software systems that use balanced allocations as an important ingredient.

The Balanced Allocations paper and the follow-up work on the power of two choices are elegant theoretical results, and their content had, and will surely continue to have, a demonstrable effect on the practice of computing.

* The Edsger W. Dijkstra Prize in Distributed Computing is awarded for outstanding papers on the principles of distributed computing, whose significance and impact on the theory or practice of distributed computing have been evident for at least a decade. It is sponsored jointly by the ACM Symposium on Principles of Distributed Computing (PODC) and the EATCS Symposium on Distributed Computing (DISC). The prize is presented annually, with the presentation taking place alternately at PODC and DISC. The committee decided to award the 2021 Edsger

W. Dijkstra Prize in Distributed Computing to **Paris Kanellakis** and **Scott Smolka**

for their paper “CCS Expressions, Finite State Processes and three problems of equivalence” published in Information and Computation, Vol. 86(1):43-68 (1990). A preliminary version of this paper appeared in the proceedings of the Second Annual ACM Symposium on Principles of Distributed Computing (PODC) 1983, pages 228–240.

This paper was a foundational contribution to the fundamental challenge of assigning semantics to concurrent processes, for specification and verification. It addressed the computational complexity of the previously introduced celebrated notion of behavioral equivalence, a cornerstone of Milner’s Calculus of Communicating Systems (CCS), aimed at tackling semantics by considering equivalence classes. With the publication of their PODC 1983 paper, Kanellakis and Smolka pioneered the development of efficient algorithms for deciding behavioral equivalence of concurrent and distributed processes, especially bisimulation equivalence, which is the cornerstone of the process-algebraic approach to modeling and verifying concurrent and distributed systems.

Specifically, the main result of their paper is what has come to be known as the K-S Relational Coarsest Partitioning algorithm, which at the time was a new combinatorial problem of independent interest. The paper also presented complexity results that showed certain behavioral equivalences are computationally intractable. Collectively, Kanellakis and Smolka’s results founded the subdiscipline of algorithmic process theory, and helped jump-start the field of Formal Verification.

2021 Award Committee: Keren Censor-Hillel (chair), Pierre Fraigniaud, Cyril Gavoille, Seth Gilbert, Andrzej Pelc, David Peleg.

* 2021 SIGACT Distinguished Service Award: The Distinguished Service Award is presented to **Paul Beame** for over 20 years of dedicated and effective support of the mission of the Theoretical Computer Science community. Paul’s tireless service, in both official and unofficial roles, has been highly instrumental in ensuring the smooth running and continued vitality of the flagship STOC and FOCS conferences and of SIGACT itself.

Among Paul’s many concrete contributions are the following:

* Service as general chair, local organizer or finance chair for numerous STOC and FOCS conferences, and as (official or unofficial) advisor for numerous PC chairs.
* Service on the SIGACT Executive Committee and as SIGACT Chair, as Vice- Chair and Chair of the IEEE Technical Committee on Mathematical Foundations (TCMF), and as a SIG Board representative on the ACM Council.
* Successfully lobbying (as SIGACT Chair and ACM Council member) for the key 2015 ACM policy change that keeps SIGACT conference proceedings, and those of many other ACM SIGs, available via open access in perpetuity, and similarly making the FOCS Proceedings accessible via open access on the conference website.
* Introduction (again as SIGACT Chair) of the STOC TheoryFest, including co- planning and co-organization of the first two TheoryFests in 2017 and 2018.

Paul’s influence on the STOC and FOCS conferences has been profound: indeed, he has been instrumental in running one or both of these events every year since the mid-2000s. His contributions run the gamut from the big picture (such as promoting and enabling the revitalization of the STOC conference through the introduction of TheoryFest) to the exquisitely detailed (such as fine-tuning budgets and local arrangements).

In addition to his many official roles, Paul’s influence is also felt, equally significantly, through his unofficial roles as “SIGACT oracle” and advisor to those responsible for running our main conferences every year, from PC chairs to local organizers to finance chairs. Whereas many people who have served in leadership roles view stepping down as a chance to leave obligations behind, Paul has repeatedly viewed it as an opportunity to smooth the path for future incumbents.

With this Award, SIGACT recognizes Paul Beame's selfless devotion to the TCS mission over two decades.

Award Committee: Alistair Sinclair (Chair); Rebecca Wright, Dieter van Melkebeek.

* **This year we launched new STOC Test of Time Awards**. These are awarded for papers published roughly 30, 20 and 10 years back. The seven winning papers are:
  + *(30 years)* Michael Ben-Or, Shafi Goldwasser, and Avi Wigderson, “Completeness theorems for non-cryptographic fault-tolerant distributed computation”, STOC 1988.
  + *(30 years)* David Chaum, Claude Crépeau, and Ivan Damgård, “Multiparty unconditionally secure protocols”, STOC 1988.
  + *(30 years)* Tal Rabin and Michael Ben-Or, “Verifiable secret-sharing and multiparty protocols with honest majority”, STOC 1989.
  + *(20 years)* Mark Jerrum, Alistair Sinclair, and Eric Vigoda, “A polynomial-time approximation algorithm for the permanent of a matrix with non-negative entries”, STOC 2001.
  + *(20 years)* Daniel A. Spielman and Shang-Hua Teng, “Smoothed analysis of algorithms: why the simplex algorithm usually takes polynomial time”, STOC 2001.
  + *(20 years)* Mikkel Thorup and Uri Zwick, “Approximate distance oracles”, STOC 2001.
  + *(10 years)* Scott Aaronson and Alex Arkhipov, “The computational complexity of linear optics”, STOC 2011.

The award selection committee was: Joe Halpern, Salil Vadhan and Mihalis Yannakakis. In addition, SIGACT has standardized the deadlines for nominations of awards.

# Significant papers on new areas published in proceedings

Below we highlight some of the “Best Paper” award winners from two SIGACT sponsored conferences.

## STOC 2021

The ACM Symposium on Theory of Computing covers much of computer science theory and selects papers for both best paper awards as well as best student paper awards when all the paper’s authors are students. This year’s winners are:

* “A (Slightly) Improved Approximation Algorithm for Metric TSP”, by Anna R. Karlin (University of Washington), Nathan Klein (University of Washington), and Shayan Oveis Gharan (University of Washington)
* “The Complexity of Gradient Descent: CLS = PPAD ∩ PLS”, by John Fearnley (University of Liverpool), Paul W. Goldberg (University of Oxford), Alexandros Hollender (University of Oxford), and Rahul Savani (University of Liverpool)
* “Indistinguishability Obfuscation from Well-Founded Assumptions”, by Aayush Jain (University of California at Los Angeles), Huijia Lin (University of Washington), and Amit Sahai (University of California at Los Angeles)

Best winning student papers are

* “Discrepancy minimization via a self balancing walk”, by Ryan Alweiss (Princeton), Yang Liu (Stanford) and Mehtaab Sawhney (MIT).
* “Separating words and trace reconstruction”, by Zachary Chase (Oxford).

## SODA 2021

ACM-SIAM Symposium on Discrete Algorithms is a major conference that focuses on algorithms and combinatorics.

Best Paper awards went to:

* “Solving Sparse Linear Systems Faster than Matrix Multiplication”, by Richard Peng and Santosh Vempala
* The Best Student Paper Award was given to: Minimizing Convex Functions with Integral Minimizers by Haotian Jiang

# Significant programs that provided a springboard for further technical efforts

SIGACT sponsored or co-sponsored a number of important conferences including the Symposium on Theory of Computing (STOC), Symposium on Principles of Distributed Computing (PODC), Symposium on Parallel Algorithms and Architectures (SPAA), and Symposium on Discrete Algorithms (SODA).

SIGACT also supports several conferences in-cooperation including Symposium on Principles of Database Systems (PODS), Symposium on Foundations of Computer Science (FOCS), and Symposium on Principles of Programming Languages (POPL).

SIGACT helped support the creation of Algorithmic Principles of Computer Systems (APOCS) a conference co-located with the ACM-SIAM SODA Conference.

# Innovative programs which provide service to our technical community

The Committee for the Advancement of Theoretical Computer Science (CATCS), sponsored by SIGACT, continues to be very active. The committee meets by conference call every month and has developed and executed action plans to increase the visibility of theoretical computer science and to increase the funding base for theory of computation at the NSF. The Committee has helped advise the NSF CCF Director and other NSF officers on several matters including recruiting for positions within. The committee has also been working to obtain a more detailed and complete picture of the state of academic employment in theoretical computer science within the broad range of US research universities. Having Shuchi Chawla be the chair of CATCS, and be on the SIGACT EC has resulted in a close co-operation between the two groups.

SIGACT continues to support student attendance at SODA and STOC by funding Best Student Paper Awards, travel, lunches, and reduced registration fees. SIGACT has also provided additional student support for all of its other sponsored and co-sponsored conferences this year. This helps ensure that the maximum number of students can attend these conferences.

The second TCS Visioning workshop was organized by the SIGACT Committee for the Advancement of Theoretical Computer Science and took place during the week of July 20, 2020. The workshop was held online and involved over 75 participants from the United States, Europe, and Asia. The main goal of the workshop was to identify broad research themes within theoretical computer science that have potential for a major impact in the future. These themes were then packaged into research nuggets in a way that can be consumed by the general public. A workshop report in the form of a white paper accompanied with graphics/posters produced by a professional graphic designer was released publicly. These will then be delivered primarily to the Computing Community Consortium (CCC) and funding agencies such as the National Science Foundation (NSF) to help them advocate for TCS.

SIGACT has co-sponsored the SIGACT CRA-W Grad Cohort Workshop, the Women in Theory Workshop as well as the TCS women’s spotlight workshop at STOC, featuring both an inspiring senior researcher as well as post-docs and senior graduate students.

I wanted to thank everyone in the community who worked hard to put together the TCS Summer School – New Horizons in TCS in late May 2021.

# Significant new initiatives

The major conference run through SIGACT is the Symposium on Theory of Computing (STOC). Due to the situation with COVID-19, STOC 2021 and TheoryFest in Rome (Italy) were basically converted into a fully online conference.

We wanted to thank the local arrangements team – Stefano Leonardi (local arrangements chair), Nicole Immorlica (co-general chair) – for putting the online conference together. Virginia Vassilevska Williams was the PC chair for STOC, and Tim Roughgarden was the Theory Fest Chair - and they all worked tirelessly to ensure that attendees had a great experience. Clement Cannone was the social program chair and ensured that everyone had an amazing experience.

The full length talk videos were made available right before the conference, and each paper was given a 12 minute slot during the conference to summarize their work. This enabled a morning start and a finish by late afternoon to attempt to cater to people from the US West coast to Europe. We were not sure how to best cater to attendees from the Far East and Australia. The attendance at STOC doubled from the normal in person meetings and was over 700. In addition, to the conference talks, there were workshops as well as a reception held on gather.town.

Challenges to this approach are that it requires a great deal more volunteer effort and organization. We have aimed to keep registration fees low, but in future years this may require increases in registrations costs for the conference to maintain financial stability.

# Summary of key issues that the membership of the SIGACT will have to deal with in the next 2-3 years

Funding and articulating the importance of theoretical computer science are perennial issues that are being addressed by the Committee for the Advancement of Theoretical Computer Science (CATCS) in conjunction with SIGACT. We have effectively fundraised to increase the Knuth prize from $5,000 to $10,000 thanks to a private donor (for three years). We might have to fund raise additional funds for future years. The SIGACT Service Award was increased from $1,000 to $3,000.

Membership in SIGACT has been flat. Since generally there are minimal specific benefits for SIGACT membership after joining the ACM, this is perhaps not surprising. We also need to think about ways to simply offer a lifetime membership.

SIGACT needs to do more to support programs and events to have a broader reach to historically under-represented groups. We strongly suggest that the next SIGACT EC prioritize this issue.

Another key issue relates to open access. By and large, the community is deeply supportive of open access and is encouraged by recent efforts by the ACM to make conference papers more readily and freely accessible. A natural consequence of this may be decreased funding for SIGACT through the ACM Digital Library program, which provides the bulk of our discretionary budget. At this stage we are making SIGACT News freely available on the SIGACT website.

# Volunteer Development Process

SIGACT now has a number of sub committees working to improve diversity in TCS, by running the STOC Theory Women Workshop (Barna Saha, Sofya Raskhodnikova and Virginia Vassilevska Williams) and as well as a sub-committee to identify top new papers for coverage in CACM (Research Highlights) consisting of Ronald de Wolf, Yuval Ishai, Irit Dinur and Jelani Nelson (chair). We hope to recruit more volunteers for other activities. Maverick Woo has kindly helped modernize and update the SIGACT website and spent time adding new news items. Amit Sahai kindly took on the role of co-ordinating awards. We do need a sub-committee to solicit for conference locations for STOC. Right now this is handled by the SIGACT EC.

Award committees for the Knuth prize, Gödel prize and SIGACT Distinguished Service Award also evolve and change every year with new members being added and members rotating out. This year the award committees for the SIGACT Distinguished Service Award were Alistair Sinclair (chair), Dieter van Melkebeek and Rebecca Wright. The Knuth prize award committee was Hal Gabow (chair), Noam Nisan, Ronitt Rubinfeld, Dana Randall, Madhu Sudan and Andrew Yao. The Gödel prize committee was Samson Abramsky, Anuj Dawar (chair), Joan Feigenbaum, Robert Krauthgamer, Dan Spielman and David Zuckerman.

The PC chair for 2022 STOC will be Anupam Gupta, with the conference itself being in Rome (Italy) with Stefano Leonardi being the local arrangements chair. The next SIGACT EC will handle STOC 2023 fully (including selecting the PC chair, location etc).

**We are delighted to welcome the new SIGACT EC of Ken Clarkson, Valerie King, Shachar Lovett, Tal Rabin (chair), and Chris Umans.**

**SIGAI Annual Report**

**July 2020 - June 2021**

**Submitted by: Sanmay Das, Chair**

**Health and Viability**

The membership and financial numbers for SIGAI continue to be strong even in the face of the COVID-19 pandemic. We have also been able to maintain a robust program of conference activity, detailed below, including bringing new sponsored conferences (of particular note, AIES, IVA and EAAMO) into the fold in recent years, and continue the trajectory we began a few years ago of expanding our activity in the space of awards, student funding, and special projects funding. We have also supported policy activities and AI outreach, and increased our joint activities with other major organizations, including AAAI, IJCAI, and INFORMS. We provide more details on all of these areas below.

**Diversity, Equity, and Inclusion**

SIGAI emphasizes the importance of diversity, equity, and inclusion in all our activities. For many years, we have especially supported students from underrepresented groups in conference attendance through programs like doctoral consortia and student travel grants. In recent years, the centrality of AI and machine learning in society has increased concerns about how algorithmic decision-making, fueled by the capabilities of AI, could reinforce inequities and create injustices in society. SIGAI has responded with strong support of two new conferences in this area, AIES (AI, Ethics, and Society), co-sponsored with AAAI, and EAAMO (Equity and Access in Algorithms, Mechanisms, and Optimization, starting in 2021), co-sponsored with SIGecom, which grew out of the Mechanism Design for Social Good workshop series that SIGAI has been supporting for the past few years. These are both wonderful venues for interdisciplinary work in the area, and they also attract a much more diverse set of participants than most computer science conferences or groups. Our special projects funding also prioritizes outreach to communities that are underrepresented in computing, both within and outside the US. Finally we are actively recruiting a DEI focused appointed officer to work specifically on expanding our portfolio of EDI activities.

**Awards**

SIGAI presents three 3 major awards annually, two of which are relatively new.

The ACM SIGAI Autonomous Agents Research Award is presented for excellence in research in the area of autonomous agents. The recipient is invited to give a talk at the International Conference on Autonomous Agents and Multiagent Systems (AAMAS). The 2021 ACM SIGAI Autonomous Agents Research Award was presented (virtually) at AAMAS 2021 in London, United Kingdom to Professor Vincent Conitzer, the Distinguished University Professor of New Technologies and Professor of Computer Science, Professor of Economics, and Professor of Philosophy at Duke University, as well as Head of Technical AI Engagement at the Institute for Ethics in AI, and Professor of Computer Science and Philosophy, at the University of Oxford. Prof. Conitzer's highly cited work in multi-agent systems spans interdisciplinary areas in game theory, social choice, and economics and includes foundational contributions to the field of computational social choice, helped to define the field of automated mechanism design, and provided complexity results on Nash equilibrium as well as leader-follower games.

ACM SIGAI also sponsors the ACM SIGAI Industry Award for Excellence in AI , an annual award which is given to an individual or team in industry who created a fielded AI application in recent years that demonstrates the power of AI techniques via a combination of the following features: novelty of application area, novelty and technical excellence of the approach, importance of AI techniques for the approach and actual and predicted societal impact of the application. Due to the pandemic there was no award made in 2020. It was recently announced that the winner of the 2021 award is DrAid, an intelligent assistant for radiologists developed by VinBrain, a subsidiary of Vingroup in Vietnam. The award will be presented at the International Joint Conference on Artificial Intelligence (IJCAI) in August 2021, through an agreement with the IJCAI Trustees.

ACM SIGAI sponsors, jointly with AAAI, the AAAI/ACM SIGAI Doctoral Dissertation Award to recognize and encourage superior research and writing by doctoral candidates in AI. This annual award is presented at the AAAI Conference on AI in the form of a certificate and is accompanied by the option to present the dissertation at the AAAI conference as well as to submit a six page summary to both the AAAI proceedings and the ACM SIGAI newsletter. The winner of the 2019 AAAI/ACM SIGAI Dissertation Award, Jiajun Wu of the Massachusetts Institute of Technology, for his work entitled Learning to See the Physical World. Two runners-Up were also honored: Aishwarya Agrawal of the Georgia Institute of Technology for Visual Question Answering and Beyond, and Li Dong of the University of Edinburgh for Learning Natural Language Interfaces with Neural Models. All winners were honored during AAAI-21 in February.

**Significant Papers**

Notable papers appearing in conferences sponsored and in-cooperation with ACM SIGAI include:

Children as Robot Designers, Patrícia Alves-Oliveira, Patrícia Arriaga, Ana Paiva, Guy Hoffman, Best Design Paper HRI 2021

Robot Gaze Can Mediate Participation Imbalance in Groups with Different Skill Levels, Sarah Gillet, Ronald Cumbal, André Pereira, José Lopes, Olov Engwall, Iolanda Leite, Best User Study Paper, HRI 2021

Explainable AI for Robot Failures: Generating Explanations that Improve User Assistance in Fault Recovery. Devleena Das, Siddhartha Banerjee, Sonia Chernova. Best Technical Advance Paper, HRI 2021

Challenges and Opportunities for Replication Science in HRI: A Case Study in Human-Robot Trust. Daniel Ullman, Salomi Aladia, Bertram F. Malle. Best Theory and Methods Paper, HRI 2021

ProtoAI: Model-Informed Prototyping for AI-Powered Interfaces” Eytan Adar, Colleen M. Seifert, Hariharan Subramonyam. Best Paper, IUI 2021

Detecting Emergent Intersectional Biases: Contextualized Word Embeddings Contain a Distribution of Human-Like Biases. Wei Guo, Aylin Caliskan. AIES 2021

Fair Bayesian Optimization.

Valerio Perrone, Michele Donini, Muhammad Bilal Zafar, Robin Schmucker, Krishnaram Kenthapadi, Cedric Archambeau. AIES 2021.

Scalable Anytime Planning for Multi-Agent MDPs. Shushman Choudhury, Jayesh Gupta, Peter Morales and Mykel Kochenderfer. Best Paper, AAMAS 2021

An Agent-Based Model to Predict Pedestrians Trajectories with an Autonomous Vehicle in Shared Spaces. Manon Prédhumeau, Lyuba Mancheva, Julie Dugdale and Anne Spalanzani. Best Student Paper, AAMAS 2021

Cyber Attack Intent Recognition and Active Deception using Factored Interactive POMDPs. Aditya Shinde, Prashant Doshi and Omid Setayeshfarm. Best Application Paper, AAMAS 2021

Automating Just-In-Time Comment Updating. Zhongxin Liu, Xin Xia, Meng Yan, Shanping Li. ACM SIGSOFT Distinguished Paper, ASE 2020

Broadening Horizons of Multilingual Static Analysis: Semantic Summary Extraction from C Code for JNI Program Analysis.

Sungho Lee, Hyogun Lee, Sukyoung Ryu.

ACM SIGSOFT Distinguished Paper, ASE 2020

ChemTest: An Automated Software Testing Framework for an Emerging Paradigm.

Michael C. Gerten, James I. Lathrop, Myra Cohen, Titus H. Klinge.

ACM SIGSOFT Distinguished Paper, ASE 2020

Problems and Opportunities in Training Deep Learning Software Systems: An Analysis of Variance.

Viet Hung Pham, Shangshu Qian, Jiannan Wang, Thibaud Lutellier, Jonathan Rosenthal, Lin Tan, Yaoliang Yu, Nachiappan Nagappan.

ACM SIGSOFT Distinguished Paper, ASE 2020

Scalable Multiple-View Analysis of Reactive Systems via Bidirectional Model Transformations.

Christos Tsigkanos, Nianyu Li, Zhi Jin, Zhenjiang Hu, Carlo Ghezzi.

ACM SIGSOFT Distinguished Paper, ASE 2020

Summary-Based Symbolic Evaluation for Smart Contracts.

Yu Feng, Emina Torlak, Rastislav Bodik.

ACM SIGSOFT Distinguished Paper, ASE 2020

Likang Yin, Vladimir Filkov.

Team Discussions and Dynamics During DevOps Tool Adoptions in OSS Projects, ACM SIGSOFT Distinguished Paper, ASE 2020

**Conference Activity**

SIGAI’s conference activity is overseen by the EC and especially by our conference coordination officer, Louise Dennis. Our meetings have continued to be impacted by COVID-19. However we are gradually beginning to see events move towards hybrid modes of delivery and away from fully online only events. However, even so, we expect to continue to support online events for some time to come.

ACM SIGAI sponsored or co-sponsored the following conferences in the last year:

IVA 2020: International Conference on Intelligent Virtual Agents

CSCS 2020: Computer Science in Cars Symposium

ASE 2020: International Conference on Automated Software Engineering

WI 2020: International Conference on Web Intelligence

KCAP 2021: International Conference on Knowledge Capture

IUI 2021: Annual Conference on Intelligent User Interfaces

AIES 2021: Conference on AI, Ethics and Society

HRI 2021: International Conference on Human-Robot Interaction

and it will sponsor at least the following conferences coming up in 2021:

EAAMO 2021: Conference on Equity and Access in Algorithms, Mechanisms, and Optimization

IVA 2021, ASE 2021, CSCS 2021

ACM SIGAI also approved the following in-cooperation requests from events covering a wide thematic and geographical range across the international AI community:

AIVR 2020 and 2021: Artificial Intelligence and Virtual Reality

AAMAS 2021 and 2022: International Conference on Autonomous Agents and Multiagent Systems

FDG 2021: International Conference on the Foundations of Digital Games

ICEIS 2021: International Conference on Enterprise Information Systems.

IMPROVE 2021: International Conference on Image Processing and Vision Engineering

ICINO 2021: International Conference on Informatics in Control, Automation and Robotics

ICAIL 2021: International Conference on AI and Law

ICIKS 2021: International Conference on Information and Knowledge Systems

AIMLSystems 2021: International Conference on AI-ML-Systems

IC3K 2021: International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management

IJCKG 2021: International Joint Conference on Knowledge Graphs

ICAART 2022: International Conference on Agents and Artificial Intelligence

**Special Projects and Non-Conference Programs**

**Newsletter:** *AI Matters,* the ACM SIGAI newsletter is distributed via the ACM SIGAI mailing list but also openly available on the ACM SIGAI web-site (at sigai.acm.org/aimatters/). Co-editors Iolanda Leite and Anuj Karpatne have beenAI Matters features articles of general interest to the AI community. ACM SIGAI publishes four issues of its newsletter AI Matters per year. In 2021 we welcomed Dilini Samarasinghe, Assistant Conference Coordination Officer for ACM SIGAI, identified through the ACM Future of Computing Academy, to our regular editorial team. She is now editing the events column together with Louise Dennis. The recurring columns in AI matters have included AI Interviews (with interesting people from academia, industry, and government), AI Amusements (including AI humor, crossword puzzles, and games), AI Education, AI Policy Issues, AI Events (which includes conference announcements and reports), AI Dissertation Abstracts and News from AI Groups and Organizations, and AI Latest Research Trends (where we invite recent recipients of competitive grants to write about their latest research projects).

In addition to our regular columns, other featured articles this year included, for example, reports from SIGAI sponsored events such as the Fourth Workshop on Mechanism Design for Social Good and the “Decoding AI” event targeting high school students and the general public (both published in Volume 7, Issue 1). AI Matters is also publishing extended abstracts of winners and runner ups from the AAAI/SIGAI Dissertation Award.

**Activities Fund:** Starting in 2019 ACM SIGAI has started the annual SIGAI Activities Fund. This fund seeks to promote outreach in all aspects of AI. Activities must contain a strong outreach component to either students, researchers, or practitioners not working on AI technologies or to the public in general. The purpose is to promote a better understanding of current AI technologies, including their strengths and limitations, as well as their promise for the future. Examples of fundable activities include (but are not limited to) AI technology exhibits or exhibitions, holding meetings with panels on AI technology (including on AI ethics) with expert speakers, creating podcasts or short films on AI technologies that are accessible to the public, and holding AI programming competitions. ACM SIGAI looks for evidence that the information presented by the activity will be of high quality, accurate, unbiased (for example, not influenced by company interests), and at the right level for the intended audience.

In the 2020-2021 cycle we accepted two projects:

Try AI: Micro-Internship Edition from Elizabeth Bondi and Alexis Stokes to develop a micro-internship program in which college students may participate in research with a Harvard researcher (PhD student, postdoc, and/or faculty) in the field of artificial intelligence (AI) for 1 week.

The 4th Workshop on Mechanism Design for Social Good (MD4SG '20) from Francisco Javier Marmolejo Cossio and Faidra Monachou which was held online and sought to highlight work where techniques from algorithms, optimization, and mechanism design, along with insights from other disciplines, have the potential to improve access to opportunity for historically underserved and marginalized communities.

Writeups of all funded activities are published in AI Matters.

**Website and social media:** With the help of freelancer Andrea Alessandri, we are transitioning the SIGAI website to a more modern look and feel using WordPress. The new website will present a more standardized and professional appearance and more clearly lay out ways for visitors to interact with SIGAI as well as improved accessibility. Moreover, the new platform greatly streamlines the process for updating the website, which will help keep content up to date. We have also recruited a new dedicated officer, Matt Luckcuck, to manage SIGAI's social media accounts with the aim of increasing the “naturalistic” usage of the account and planning the information and publicity pipeline.

**Public policy activities:** ACM SIGAI promotes the discussion of policies related to AI through posts in the AI Matters Blog and the Newsletter Public Policy column. The Public Policy Officer, Dr. Larry Medsker, helps SIGAI identify external groups with common interests in AI public policy, encourages ACM SIGAI members to partner in policy initiatives with these organizations, disseminates public policy ideas to the ACM SIGAI membership with the goal of ensuring that every technologist is educated, trained and empowered to prioritize policy and ethical considerations in the design and development of intelligent systems. As a group, we study how organizations collect and analyze data and whether these practices are consistent with recommendations by ACM AI policy groups. Our mission is to share AI policy ideas and information among SIGAI members and beyond.

Through the Public Policy officer, ACM SIGAI participates in the work of the ACM US Technology Policy Committee. ACM USTPC addresses US public policy issues related to computing and information technology and regularly educates and informs US Congress, the US Administration and the US courts about significant developments in the computing field and how those developments affect public policy. For example, in the 2020-21 period the ACM SIGAI Public Policy officer continued activities related to SIGAI policy efforts, such as work with the ACM USTPC team that is writing a piece for Nature Comment on the ethics and policy implications of research on machine learning and face recognition. The Public Policy Officer is also on the ACM USTPC team overseeing the management and production of ACM TechBriefs. In other 2020-21 activities related to ACM Public Policy, he became Co-Editor-in-Chief of the new journal AI and Ethics, and he was the moderator of a panel on AI and Facial Recognition at the ALGOL 2021 annual conference.

**Education activities:** Our education activities have continued at a strong pace under the guidance of our Education Activities Officer, Todd Neller. It was another good year for expanding our Model AI Assignment archive (http://modelai.gettysburg.edu/). Our EAAI-2021 track was again successful, attracting 6 new accepted, peer-reviewed projects into our archive which were presented virtually at EAAI-2021 on February 6 and 7 (https://pages.mtu.edu/~lebrown/eaai/index.html).

The EAAI-2021 Mentored Undergraduate Research Challenge (MURC), Gin Rummy (http://cs.gettysburg.edu/~tneller/games/ginrummy/eaai/), engaged 50 faculty mentors, industry mentors, and students who formed 14 teams which resulted in 14 Gin Rummy AI submissions, 14 paper submissions, and 13 papers accepted through peer review. This represents a new record participation for an EAAI MURC.

At EAAI-2021, we announced our latest mentored undergraduate research challenge for EAAI-2022: AI-Assisted Game Design (http://cs.gettysburg.edu/~tneller/games/aiagd/index.html). Also, for the first time, we (Todd Neller and Rick Freedman) are forming a new committee structure for the MURC, with a two-year, over-lapping co-chair position that is expected to rotate among MURC program committee members. This should ensure both diverse problem-domains and a strong, coordinated effort to supply ready-made, supported research challenges to faculty and undergraduates who would benefit.

**Job fair:** AAAI and ACM SIGAI have partnered to run the popular AAAI/ACM SIGAI Job Fair for the last seven years. In lockstep with the growth of AAAI and the growth of the greater artificial intelligence and machine learning (AI/ML) community, our once-small job fair also grew. At AAAI-20, thirty-eight companies and universities formally attended, typically with a booth, team of recruiters, swag, and other representatives, increasing from twenty-six companies during the job fair's previous run in 2019, and twenty-one companies in the year prior to that. In 2021, Michael Albert (U Virginia), John Dickerson (Maryland), and Matthew Taylor (Alberta) co-ran the job fair, which was virtual-only for the first time due to COVID. Roughly fifteen companies and other organizations attended, a drop from the previous year(s); this, as with many things, was almost certainly due to the forced move to virtual due to the pandemic. Still, as shown on our dedicated domain <https://aaaijobfair.com/> for the job fair, we were able to connect interested job seekers with internships and jobs, and participating firms were able to present themselves, albeit virtually. In 2022, Michael Albert (U Virginia) and John Dickerson (Maryland) will be co-running the job fair. We intend to be more proactive about virtual-only participation and will likely leverage Gather.town to facilitate live (virtual) in-person meetings between job seekers and representatives from firms, which should hopefully more closely mimic the traditional, in-person job fair.

**AI-OR Workshop Series:** SIGAI, joint with the CCC (Computing Community Consortium) and INFORMS, is co-organizing three agenda setting workshops to explore synergy and opportunity at the nexus of Artificial Intelligence and Operations Research. Each workshop will consist of a set of brief talks designed to inform and generate discussion about opportunities that each community will find novel and exciting. On September 23 and 24, 2021, we will jointly run the first of three workshops. Each workshop will have about 40 invited participants from across AI and OR. The organizing committee includes members of the AI, ML, and OR communities: Sanmay Das (GMU), John Dickerson (Maryland), Sven Koenig (USC), Ramayya Krishnan (CMU), Radhika Kulkarni (Cornell), Pascal Van Hentenryck (Georgia Tech), and Phebe Vayanos (USC). We have many speakers confirmed for the first workshop (e.g., Stephen Wright, Andrea Lodi, Katia Sycara, Satinder Singh, David Simchi-Levi, Ranga Nuggehalli, Robert Hampshire, Subbarao Kambhampati, Aaron Roth, Milind Tambe, Cynthia Rudin, Margret Bjarnadottir, and likely others), and are happy to support a cross-cutting agenda that spans multiple related disciplines. Following this first workshop, we will co-organize two additional workshops likely in Nov/Dec of 2021 and Jan/Feb of 2022; the foci of those workshops will be set at this coming first workshop, but will likely include heavier overlap with policymakers and with practitioners.

**Key Issues**

Like every SIG, we will have to deal with the question of what conferences will look like going forward, and how to support students and others in accessing and getting the benefits of conferences in whatever future formats they take place. SIGAI has been dealing with the issue, from before the pandemic, that we do not have a single conference that most of our members regularly attend. Therefore, there isn’t a centralized meeting place for an annual business meeting, or the ability to build a sense of SIGAI identity in the membership through a conference. We hope that the solutions people are working on necessitated by the pandemic may help us in resolving this issue as well.

**SIGAPP FY’21 Annual Report**

**July 2020 - June 2021**

**Submitted by: Jiman Hong, Chair**

**SIGAPP Mission**

The SIGAPP mission is to further the interests of the computing professionals engaged in the development of new computing applications and applications areas and the transfer of computing technology to new problem domains.

**SIGAPP Officers**

Chair - Jiman Hong, Soongsil University, Seoul, Korea

Vice Chair – Tei-Wei Kuo, National Taiwan University, Taiwan

Secretary – Alessio Bechini, University of Pisa, Pisa, Italy

Treasurer – JungYeop (John) Kim, Utica College, USA

Immediate Past Chair – Sung Y. Shin, South Dakota State University

Web Master - Hisham Haddad, Kennesaw State University, USA

ACM Program Coordinator, Irene Frawley, ACM HQ

**Status of SIGAPP**

Due to the sudden COVID-19 outbreak, the main event that took place within SIGAPP, the Symposium on Applied Computing (SAC) had no chance to be held in the ordinary in-person format this year like last year. SAC was scheduled to be held in Gwangju, Korea this year, but was held as a virtual meeting due to COVID-19. However, instead, the organizing committee and all the authors did their best to keep the possibility to present research works and share comments and ideas in a new format, by means of an online web platform. More details about SAC will follow in the next section.

Reliable and Convergent Systems (RACS) which was scheduled to be held in Gwangju, Korea in October 2020 was also held as a hybrid (simultaneous virtual and in-person) meeting due to the impact of the COVID-19. RACS started a SIGAPP in-cooperated conference and 10% partial sponsored conference of SIGAPP from 2012, and it has become SIGAPP's new fully sponsored conference from 2019 because the steering committee and the organizing committee have run RACS successfully over the past 7 years. RACS 2020 was also successful and has been beneficial for SIGAPP.

SIGAPP has a 50% sponsored conference, Proactive and Experience in Advanced Research Computing Conference (PEARC) which was held as a virtual meeting in July 2021, and a 10% sponsored conference, 2020 International Conference on Intelligent Computing and Its Emerging Applications (ICEA 2020) which was held as a hybrid (simultaneous virtual and in-person) meeting in December 2020. SIGAPP will continue supporting SAC, RACS , PEARC, and ICEA in the coming years.

In addition, ACR is now stabilized, and we have begun publishing quarterly electronically since the spring of 2012. Ultimately, we would like to have ACR appear in the SCI (Science Citation Index). ACR contains invited papers from world-renowned researchers and selected papers presented by prominent researchers and professionals who attended the SAC, RACS, PEARC, and ICEA. The selected papers have been expanded, revised, and peer-reviewed again for publishing in ACR. The next issue will be published in the fall of 2021. We hope that ACR will serve as a platform for many new and promising ideas in the many fields of applied computing. It is strongly related to nearly every area of computer science, and we feel an obligation to serve the community as best we can. The papers in ACR represent the current applied computing research trends. These authors truly contribute to the state of the art in applied computing.

SIGAPP has a number of In-cooperation conferences, and the list of In-cooperation conferences are below. For reference, this year, due to the sudden COVID-19 outbreak, many conferences that had an in-cooperated relationship were canceled.:

* MEDES '21, International Conference on Management of Digital EcoSystems, Hammamet , Tunisia 11/01/21 – 11/03/21
* BRAINS '21, 3rd Conference on Blockchain Research & Applications for Innovative Networks and Services, Paris, France, 09/27/21-09/30/21
* SMA '21, The 10th International Conference on Smart Media and Applications, Gusan, Republic of Korea 09/09/21 – 09/11/21
* SBSI '21, XVII Brazilian Symposium on Information Systems, Uberlandia, Brazil, 06/07/21-06/10/21
* ECBS '21 Conference on the Engineering of Computer Based Systems, NoviSad, Serbia, 05/26/21-05/27/21
* MEDES '20, 12th International Conference on Management of Digital EcoSystems, Virtual, United Arab Emirates, 11/02/20-11/04/20
* BRAINS '20, 2nd Conference on Blockchain Research & Applications for Innovative Networks and Services, Paris, France, 09/28/20-09/30.20
* SMA '20, The 9th International Conference on Smart Media and Applications, Jeju, Korea, 09/17/20-09/30/20

**Status of SAC**

Through the expansion of benefits for our members, SIGAPP will continue to seek stable membership and strive to increase the number of members. SIGAPP’s strength and uniqueness among ACM SIGs provide a great opportunity for scientific diversity and offer a crosscutting of multiple disciplines within the ACM community.

The total number of SIGAPP members in 2021 is 492. Membership has increased over the past several years, but it has decreased temporarily in the last year. The officers look forward to continuing to work with the ACM SGB to further develop the SIG by increasing membership and converting the ACR to a new journal on applied computing. In addition, SIGAPP will develop mobile apps and utilize SNSs in the future to further expand and corroborate our interpersonal network, and promote the relationship between members of SIGAPP.

Member benefits provided by SIGAPP are as follows.

* Subscription to Applied Computing Review (Published quarterly);
* Reduced registration fee for SIGAPP conferences (SAC, RACS);
* CD-ROM proceedings of SAC;
* Access to all SIGAPP material in the ACM Digital Library:
* SAC conference proceedings and Applied Computing Review (ACR).

Community benefits provided by SIGAPP are as follows.

* 100% Sponsorship of SAC and RACS conference;
* 50% Sponsorship of PEARC conference;
* 10% Sponsorship of ICEA conference;
* Best Paper/Poster awards at the SAC, RACS, and PEARC conferences;
* Distinguished Service Award for outstanding service to SAC and RACS;
* Student travel support to SAC and RACS;
* SIGAPP Web site, including old electronic version of Applied Computing Review.

**Fund Balances**

The Fund balance has increased due in large part to the success of sponsored conferences including SAC and RACS in getting generous local supports, and the ACM DL revenue has continuously increased.

In an effort to aid the SAC community during the economic fallout caused by the global COVID-19 pandemic, SIGAPP and SAC had decided to fully refund SAC 2020 registration fees and to take the registration fee for less than $100 for SAC 2021. For this reason, SIGAPP's fund balance has decreased but SIGAPP is still financially sound and the fund balance is good evidence of the quality improvement of the SIGAPP.

|  |  |  |
| --- | --- | --- |
| **Fiscal Year** | **Fund Balances** | **Digital Lib. Revenue** |
| **Amount** | **Amount** |
| July 2020~June 2021 | $858,077 | $42,004 |
| July 2019~June 2020 | $757,248 | $40,438 |
| July 2018~June 2019 | $760,807 | $60,046 |
| July 2017~June 2018 | $721,005 | $50,545 |
| July 2016~June 2017 | $671,653 | $48,983 |

**Status of SAC**

The 35th and 36th Annual editions of SAC have marked another successful event for the Symposium on Applied Computing even though it was held on an online web platform All the authors did their best to keep the possibility to present research works and share comments and ideas in a new format, by means of an online web platform. The online web platform for participating in the online edition of SAC 2021 is ready and accessible at the following URL: https://acmsac.ecs.baylor.edu/#/app/

A paper-level chat was also provided to all attendees to place Q/A and comments, as it usually happens in face-to-face presentations. The online platform was kept open till mid-June 2021 and all the interactions have occurred on dedicated chats; any attendee was free to browse content at her/his will and post comments on chats.

37 Tracks were finally accepted for SAC 2021. The prescreening and selections were made based on the success of those Tracks in the previous SACs as well as targeting new and emerging areas. The Call for Papers for these Tracks attracted 764 final paper submissions from 56 different countries. The submitted papers underwent the blind review process and 190 papers were finally accepted as regular papers for inclusion in the Conference Proceedings and presentation during the Symposium. The final acceptance rate for SAC 2021 is 24.9% for the overall track. In addition to the accepted full papers, 61 submissions that received high enough review scores were accepted as short papers for the Poster Program.

SIGAPP’s tentative plan is to host the SAC 2022 in Brno, Czech Republic from April 25 to April 29, 2022. The website <http://www.sigapp.org/sac/sac2022/> has further details such as the symposium committee, technical tracks, and track chairs. SAC 2023 is being considered for Gwangju, Korea. A decision by the SAC steering will be made soon. To date, 2023 SAC local host proposals have been submitted from Iasi, Romania, Sydney Australia, and Dublin Ireland.

**Significant Top 3 Programs (Events)**

1. Student Grants: We have implemented the Student Travel Award (STAP) for students who would otherwise have difficulty attending the sponsored conferences. The STAP continues to be successful in assisting the SIGAPP student members in attending conferences sponsored by the SIGAPP. Every year, 40~45 students have been granted awards, and $40,000~$50,000 has been spent for the students. We also hope to implement a Developing Countries Travel Award for faculty-level researchers from developing countries who would otherwise have difficulty attending the SAC conference to broaden participation geographically. We could not implement this award for SAC 2020 and SAC 2021 which were held as virtual meetings, but we will reimplement this award starting from SAC 2022.

2. Chapters: Especially, far East Asian countries such as Korea, China, Taiwan, and Hong Kong are supporting the applied and convergent computing at the government level. Therefore, we have made new SIGAPP chapters in these countries and increase the number of SIGAPP members through the SIGAPP chapters. In the near future, SIGAPP Japan will be established to conduct various academic events with the existing 6 SIGAPP Chapters.

The SIGAPP will also support the joint seminar or small workshop between SIGAPP chapters of neighboring countries (eg. SIGAPP Korea, SIGAPP China, SIGAPP Taiwan, and SIGAPP Hong Kong) to have the opportunity to share their research works.

3. Feedback from the Participants: SAC and RACS have received feedback from the participants every year. Steering Committee of SAC, RACS and SIGAPP officers try to improve SIGAPP and sponsored conferences including SAC and RACS by analyzing the result of the feedback.

**Membership Development Process**

Membership has decreased in some years and increased in some years. The officers look forward to continuing to work with the ACM SGB to further develop the SIG by increasing membership and converting SIGAPP ACR, Applied Computing Review to a new journal on applied computing.

Through the expansion of benefits for our members, SIGAPP has continued to seek stable membership and strive to increase the number of members. SIGAPP’s strength and uniqueness among ACM SIGs provide a great opportunity for scientific diversity and offer a crosscutting of multiple disciplines within the ACM community.

In addition, SIGAPP will develop mobile apps and utilize SNSs in the future to further expand and corroborate our interpersonal network and promote the relationship between members of the SIGAPP.

**Volunteer Development Process**

SIGAPP’s volunteer process has been successful, but we will continue to improve and establish our volunteer development process which is an essential issue for SIGAPP.

SIGAPP Executive Committee keeps looking for the new volunteer to serve the future SIGAPP officers. We have encouraged SIGAPP members to serve as a volunteer for SAC conference which is the flagship conference of the SIGAPP. The development process is as follows,

* Encourage to submit the track proposal of the SAC, and server as the track chair
* Encourage to serve the SAC organizing committee member based on the successful track chair records.
* Encourage to be a candidate for the SIGAPP officer election.

In addition, we have tried to think about a career path for young researchers in their career development, including Career Award, and Young Researcher Award and a queue of service positions from TPC members, Track Chairs, to Conference Chairs. It will also attract people to join and work together in the SIGAPP.

# **SIGARCH Annual Report**

# **July 2020 – June 2021**

**Submitted by: Babak Falsafi, Chair**

Our previous annual reports discussed the launching of several new initiatives to address each of the three components of our mission statement – technical exchange, talent development and recognition, and outreach. These three components have a strong emphasis on diversity and inclusion with initiatives that have impacted communities across ACM and beyond. Over the last year, we solidified many of these initiatives and started new ones, thanks to volunteers from the broader community. In the coming year, besides solidifying existing initiatives, we plan to focus on specific ones that help improve the health of our conferences, our community, as well as the publication and conference organization processes. Like diversity and inclusion, we hope that these initiatives transcend beyond SIGARCH and help improve other SIGs and the broader computing community.

**TECHNICAL EXCHANGE**

(1) Meetings: SIGARCH (co-)sponsors a strong portfolio of conferences, many of which co-host a variety of highly attended specialized workshops and tutorials on leading-edge topics. We highlight below two conferences: ISCA, the premier conference for computer architecture (co-sponsored with IEEE-CS TCCA), and ASPLOS, the premier multidisciplinary systems conference that brings together architecture, programming languages, and operating systems (co-sponsored with SIGPLAN and SIGOPS).

The 47th ISCA was held virtually in June 2020 due to COVID. The conference featured six workshops, nine tutorials, three keynotes, an inaugural industry track session (see below), twelve technical paper sessions (with both record submissions of 428 papers and 77 accepted papers), and twelve mini panels. ISCA 2020 was the first online edition of ISCA with a record number of registered attendees of 1,701 and

$99,950 sponsored funds which were deferred for use in ISCA’21.

ASPLOS’20 was supposed to be held in Lausanne at EPFL but became the first conference in our community to go online due to COVID in March 2020. The conference featured a strong technical program with a record of 86 papers and 479 paper submissions. The program included three keynotes, five workshops, and eight tutorials. With the dedication and due diligence of the conference organizers (the program co-chairs and the general chair), the entire program moved to an online format with a sudden decision of just one week as COVID hit the world and Switzerland banned all large-scale

in-person events. While the conference boasted a record number of (slack) attendees of 1,028, the lack of familiarity with online platforms and a virtual conference format resulted in a lower degree of engagement among attendees as compared to a physical conference.

(2) ISCA industrial track: To boost participation from industry, there was a proposal at the ISCA’19 business meeting to create an industry track for product papers which was well received. A recent CAT blog post studied 2000+ ISCA papers from 1973-2018 concluding a decline in participation from industry. While industrial product papers are of great value to our community, the guidelines for reviewing and evaluating such papers have to be revisited because they are fundamentally different from research papers with models or prototypes of proposed architectures that allow for flexibility in exploration. Many see great value in papers about working hardware that combine novel ideas that must work well together to help us understand the difficulty, cost, and performance of the ideas and the overall system. The track received 21 abstracts out of which five were selected for inclusion in the program. Six other abstracts that were gauged by the program committee as high-quality were invited for submission to a special issue of IEEE Micro in 2020.

(3) Annual SIGARCH visioning workshops: The visioning workshops have been suspended due to COVID because organizers would prefer to have in-person meetings. The next workshop, which is on Bio-inspired computing, is planned for 2022.

**TALENT DEVELOPMENT & RECOGNITION**

(1) ACM/IEEE Eckert-Mauchly award: This is the most prestigious award in computer architecture, given for contributions to computer and digital systems architecture. The 2020 recipient was Luiz Barroso for “pioneering the design of warehouse-scale computing and driving it from concept to industry.”

(2) SIGARCH Maurice Wilkes award: This is the most prestigious award given to a researcher in the first 20 years of their career and went to Luis Ceze and Karin Strauss for “contributions to storage and retrieval of digital data in DNA.”

(3) SIGARCH/TCCA influential ISCA paper award : This award recognizes a paper from the ISCA 15 years earlier. The 2020 recipient was “Interconnections in Multi-Core Architectures: Understanding Mechanisms, Overheads and Scaling” by Rakesh Kumar, Victor V. Zyuban, Dean M. Tullsen.

(4) ASPLOS influential paper award: This award recognizes ASPLOS papers from 10 or more years ago. The 2020 recipients were “Energy-efficient computing for wildlife tracking: design tradeoffs and early experiences with ZebraNet” by Philo Juang, Hidekazu Oki, Yong Wang, Margaret Martonosi, Li Shiuan Peh, and Daniel Rubenstein in ASPLOS 2002, and “A comparison of software and hardware techniques for x86 virtualization” by Keith Adams and Ole Agesen in ASPLOS 2006.

(5) SIGARCH Alan D. Berenbaum Distinguished Service Award: This award is presented annually to an individual who has contributed important service to the computer architecture community. The 2020 recipient was Alvin Lebeck for “creating, curating, and architecting the Computer Architecture Today blog, which has transformed the way in which our community connects and communicates.” May Berenbaum, Alan Berenbaum’s sister, together with the SIGARCH chair announced the award at the online ceremony.

(6) SIGARCH/TCCA Outstanding Dissertation Award: This award is presented annually to recognize excellent thesis research by doctoral candidates in the field of computer architecture. The 2020 recipient was Caroline Trippel from Princeton (advised by Margaret Martonosi), for her dissertation entitled “Concurrency and Security Verification in Heterogeneous Parallel Systems.” The award citation was “for developing efficient, formal, hardware-aware concurrency verification methods, which resulted in the identification of important correctness and security vulnerabilities.” Honorable mentions went to Mengjia Yan from UIUC (advised by Josep Torrellas) for her dissertation entitled “Cache-based Side Channels: Modern Attacks and Defenses,” with the award citation for “introducing secure processor and cache architecture designs that effectively thwart cache-based side channel attacks, including new attacks proposed in the dissertation,” and to Joseph Earl McMahan from UCSB (advised by Timothy Sherwood) for the dissertation entitled “The ZARF Architecture for Recursive Functions,” with the award citation for “introducing a novel approach to software verification and cross-stack hardware design for critical systems by rethinking instruction-set architectures from a mathematical perspective.”

(7) CACM Research Highlights: SIGARCH has a four-member standing committee to nominate papers for CACM Research Highlights. The candidate papers are solicited through a survey of conference attendees as well as nominations by Program Chairs of the most prestigious conferences sponsored by SIGARCH. These candidates are then forwarded to the CACM Editorial Board to make the final decision. The nominated papers are also listed on the SIGARCH website to reflect the high prestige of the papers being selected. There were two papers nominated to the CACM Editorial Board in 2020: “Architecting Noisy Intermediate-Scale Trapped Ion Quantum Computers” by Prakash Murali, Dripto M. Debroy, Kenneth R. Brown, and Margaret Martonosi from ISCA 2020, and “Orbital Edge Computing: Nanosatellite Constellations as a New Class of Computer System” by Bradley Denby and Brandon Lucia from ASPLOS 2020.

(8) Honoring retirees: Jointly with TCCA, we launched a program in 2017 to honor at ISCA the contributions of members of our community who are retiring or have recently retired. In 2020, we didn’t have any retirees to announce.

(9) Remembering recently departed members: With TCCA, we also launched a program at ISCA in 2017 to remember members of our community who have passed away. We mourned the passing of Sang Lyul Min, Professor of Computer Science and Engineering at Seoul National University (SNU). Prof. Jaejin Lee, a colleague of Prof. Min at SNU, provided a tribute at ISCA’20.

(10) Student mentoring: We continued our “Meet a Senior Architect” mentoring program at ISCA’20 under the leadership of Joel Emer. The program matches students with mentors (through questions asked in the conference registration form), providing students the opportunity to meet 1-on-1 with a senior architect for about half an hour at the conference. Starting with 17 mentors and 33 students in 2016, this year the program attracted 140 mentors and 182 students. The program has been growing in size and has moved on to virtual platforms for the 2020 virtual conferences. We have expanded the mentoring program to other conferences (e.g., ASPLOS, MICRO) together with CASA (see below) which offers a “Meat a Senior Student” mentoring program.

(10) Women In Computer Architecture (WICArch): WICArch was created in 2018 as part of SIGARCH to build a community of female architects, celebrate their accomplishments, and boost talent development for women in architecture. Natalie Enright Jerger (the current SIGARCH vice chair) chairs the WICArch subcommittee. WICArch has launched a number of initiatives including a webpage showcasing female architects and their profiles, a flyer widely publicizing women in computer architecture (and systems) for the academic recruiting season, a strong Slack community, and a monthly webinar series. WICArch created a Bylaws document in 2020 and has launched an official election process for the positions of Chair, Vice Chair, and Executive Committee members.

(11) Computer Architecture Student Association (CASA): In 2020, Elba Garza, a PhD student at Texas A&M, and Raghav Pothukuchi, a PhD student at UIUC launched CASA in response to calls for mentorship of junior students in the community by senior students. CASA is an independent student-run organization with the express purpose of developing and fostering a positive and inviting student community within computer architecture. SIGARCH has been co-sponsoring CASA together with IEEE TCCA with funds for activities aligned with its mission. SIGARCH also hosts CASA on the sigarch.org website. CASA also runs the “Meet a Senior Student” together with SIGARCH’s “Meet a Senior Architect” at our conferences.

**OUTREACH**

(1) Computer Architecture Podcasts: Boris Grot, our Communication’s Team chair launched the Computer Architecture Podcasts in 2020 with Suvinay Subramanian and Lisa Hsu as the editors to interview leading figures in the architecture community about cutting-edge topics in architecture, their vision, and career experiences. The podcasts are available in standard formats and are hosted at comparchpodcast.podbean.com. In 2020 there were a total of three podcasts with Kim Hazelwood of Facebook, Bill Dally of Nvidia, and Jim Larus of EPFL. Since its launch, the podcasts have been downloaded over 4700 times.

(2) Computer Architecture Today (CAT): CAT has emerged as a successful platform for our community members and those in related fields to discuss diverse topics of interest, thanks to the dedicated efforts of the founding blog editor, Alvin Lebeck, and the current blog editor, Rajeev Balasubramonian, with the help of the associate blog editor, Vijay Reddi. As of January 2020, the incoming associate blog editor is Christina Delimitrou together with Vijay Reddi remaining as the associate editor. This year the blog featured 49 articles with over 100,000 views.

(3) Communication Team: We have a new Communication Team with Boris Grot as the chair, Samira Khan as the content editor (for the website, announcements, and the newsletter), and Jayneel Gandhi as the video editor in charge of the SIGARCH YouTube! channel. Adrian Sampson remains the social media editor. The YouTube! channel, which was originally created to host the visioning workshop talks, is now a platform to host all recordings for the virtual/hybrid conferences, starting with ASPLOS’20. Boris Grot also helped ASPLOS’20 organizers to replicate the iscaconf.org efforts and create the

asplos-conference.org to host the ASPLOS websites. The SIGARCH website now also has a “Featured Announcements” section at the top of the portal currently featuring our commitment to diversity and inclusion, as well as, our denunciation of racism statements.

**GRANTS & SUPPORT PROGRAMS**

(1) Talent development grants: We have launched financial support for initiatives aimed at developing talent, improving well-being, and advancing diversity and inclusion for the computer architecture community. The Undergrad Architecture Mentoring Workshop (Uarch) was inaugurated at ISCA’19 and targeted boosting participation from undergrads in parts of the world and institutions with lower average participation at computer architecture conferences. The workshop raised $56K to host 49 students from 26 colleges and universities from around the world. These programs will be expanded in 2020 to include workshops for early-career academics and student mentoring.

(2) Student travel grants: Student travel grant for conferences is our flagship benefit for student members. All conferences where SIGARCH co-sponsors at a level greater than 33% are eligible for student travel grant support at levels of $5K-$20K. Survey results in 2016 indicated that 39% of the respondents said they would come to ISCA only if they received some travel grant and 5% of the students used personal funds to cover the difference between actual costs and these travel grants. In 2020, we continued supporting our student members through the travel grants at sponsored conferences.

(3) Diversity and inclusion grants: SIGARCH provides financial support for a number of initiatives aimed at developing talent, improving well-being, and advancing diversity and inclusion for our members at various levels of seniority at SIGARCH-sponsored events. In 2020, we financially sponsored the Undergrad Architecture Mentoring Workshop (Uarch), Young Architect Workshop (Yarch), and the grad cohort of CRA Committee on Widening Participation in Computing Research (CRA-WP).

(4) Companion assistance and childcare grants: SIGARCH was a pioneer in supporting travel grants for companions for childcare or disability support for those attending professional meetings while traveling. These have expanded to supporting on-site childcare. We are pleased to continue seeing an increase in applications for these grants as well as to see IEEE TCCA supporting its own similar program.

**VIOLATIONS OF CODE OF ETHICS & PUBLICATION PROCEDURES**

On February 8th, 2021, ACM publicly announced a summary of the Joint Investigative Committee’s (JIC’s) investigation into allegations of professional and publications-related misconduct in our community. We thank ACM for their tremendous effort in having impaneled JIC and truly appreciate the conclusion of JIC’s investigation and that appropriately severe penalties were given to the perpetrators.

The troubling events in the community in the past two years have revealed areas where our policies and processes can be improved to deter and prevent misconduct, promptly detect and investigate it when it happens, and enforce penalties on the perpetrators. Unfortunately, with this announcement, many questions remain unanswered regarding our policies and processes. We outlined a few of these questions in a Computer Architecture Today blog. We understand that ACM is aware and is working on many of these areas and look forward to clear guidelines to help reinstate the trust and confidence in our system.

In our annual report last year, we listed a number of initiatives we have taken in response to the events starting in 2019 including extending CARES’ mandate to cover aid with reporting violations of publication and review policies and code of ethics, announcing clear ethics guidelines to all program committee members at ISCA and ASPLOS, and tightening security and activity tracking in HotCRP. This year, in addition we have accomplished the following:

(1) Best practices for conference reviewing: Partly in response to allegations of the violation of ethics and review processes, SIGARCH and TCCA created a joint task force with two members from each Executive Committee (Boris Grot and José Martínez for SIGARCH, Daniel Jiménez and Moin Qureshi for TCCA) to prepare a best-practices document for anonymity, conflict of interest and ethics guidelines for program committee chairs, authors and reviewers. A draft of this document was presented to the community for feedback and the feedback is currently being integrated, with plans to make the document publicly available in the fall of 2021. The document will hopefully inspire other SIGS to adopt similar best practices as they see fit.

(2) Aid for conference organizers: We have launched several initiatives to help guide conference organizers. In 2020, to help balance the reviewing load in the community and improve diversity/inclusion, we launched the Architecture PCDB, a database of service history from reviewers in four computer architecture conferences, and made them public on the SIGARCH website. The webpage tracks the history of service by a reviewer as a main or external program committee member. We are preparing a PC and GC packet for organizers. Besides general information to guide the organizers, the packets also include pointers to tools for review processes (for Program Chairs) and ACM’s and IEEE’s policies and processes on violation of code of ethics (for both Program and General Chairs).

(3) ConflictDB: One of the key concerns for conferences in our community is the increase in the number of submitted papers and review load. Program chairs are now running main program committees of 100 members with over 400 papers submitted. The PC Chair guidelines packet includes pointers to

open-source tools for use by organizers to crawl DBLP and identify conflicts. Self-declared conflicts, conflicts not evident through DBLP because of new collaborations, or other forms of conflicts that may need to be considered as outlined in the Best Practices for Conference Reviewing document still require a manual check which is prohibitive given the number of papers, authors, and reviewers involved. In 2020, we launched the development of ConflictDB that enables tracking both DBLP-crawled and self-declared conflicts (through two-way confirmation) for use by the community across multiple computer architecture conferences.

**SUMMARY**

SIGARCH remains a financially healthy and vibrant organization while increasing the scope of its initiatives to sponsor activities for technical exchange, talent development, and recognition, outreach, and grants/support programs with a strong emphasis on diversity and inclusion. It takes a village to launch and deliver on these initiatives. We would not be able to realize our vision without the dedication of a large number of volunteers in various committees. We gratefully acknowledge the ACM staff, notably our liaison J. C. Peeples, for their support and for graciously handling the increased workload.

Respectfully submitted,

Babak Falsafi, Chair

On behalf of the SIGARCH Executive Committee

Sarita Adve

Joel Emer

Natalie Enright Jerger

Boris Grot

Martha Kim

José Martínez

Karin Strauss

**SIGBED Annual Report**

**July 2020 – June 2021**

**Submitted By: James H. Anderson**

# Awards

SIGBED offers several awards to recognize outstanding work by members of the community. Details about the awards, selection processes, and nomination deadlines can be found on SIGBED's awards page, https://sigbed.org/awards/.

The *Paul Caspi Memorial Dissertation Award* is a SIGBED award established in 2013. The award recognizes outstanding doctoral dissertations that significantly advance the state of the art in the science of embedded systems, in the spirit and legacy of Dr. Paul Caspi's work. In conjunction with CPS-IoT Week in Spring 2021, this year’s award was given to Arpan Gujarati of Technische Universität Kaiserslautern, Germany, for his thesis *Towards “Ultra-Reliable” CPS: Reliability Analysis of Distributed Real-Time Systems*.

The *SIGBED Early Career Award* was established in 2017. The award recognizes outstanding contributions by early career investigators in embedded, real-time, and cyber- physical systems. In conjunction with CPS-IoT Week in Spring 2021, this year’s award was given to Swarun Kumar of Carnegie Mellon University.

The *SIGBED Frank Anger Memorial Award* is a student award in the name of late Dr. Frank Anger to promote cross-disciplinary research between embedded systems and software engineering. SIGBED solicits applications from qualified student members who have published a paper at a SIGBED-sponsored conference in the current or previous year. The submission deadline is usually at the end of August. After several years during which no award was given due to the lack of nominations, last year we revamped the selection process and began to advertise it aggressively. The effort seemed to have paid off: we received several stellar candidates from the community. The 2020 award was given to Adeola Bannis of Carnegie Mellon University. We are currently soliciting nominations for this year’s award.

SIGBED also sponsors the *SIGBED-EMSOFT Best Paper Award*. The annual award is presented to the individual(s) judged by an award committee to have written the best paper appearing in the EMSOFT (Embedded Software) conference proceedings. The selection criteria are the scientific quality of the paper and the exposition of the ideas.

The 2020 SIGBED EMSOFT Best Paper Award was given to the paper “Efficient Feasibility Analysis for Graph-based Real-Time Task Systems,” by Jinghao Sun, Rongxiao Shi, Kexuan Wang and Nan Guan. The selection process for the 2021 SIGBED-EMSOFT Best Paper Award is currently underway, and the winner will be announced during the ES Week 2021 in October this year.

Last year, we also introduced a new award program, the *ACM SIGBED Scholars Program*. The purpose of this program is to recognize promising young scholars with an interest in the Internet of Things, embedded systems, or cyber-physical systems. The program is open to students of Computer Science or Computer Engineering currently enrolled in an undergraduate program, or who have received their bachelor’s degree in the past year. No prior research work in the area is required. In selecting awardees, an emphasis is placed on increasing diversity. The first group of SIGBED Scholars was selected in conjunction with CPS-IOT Week 2020. Unfortunately, due to the COVID-19 crisis (and all conferences being virtual), we temporarily postpone this year’s program. However, it is our intent to resume this award program as soon as the COVID-19 situation is under control.

# Student Travel Grants

To promote excellence in embedded systems education and research, SIGBED offers travel grants for students to attend ESWEEK and CPS-IoT Week, the premier forums in the areas of embedded and cyber-physical system design areas. The travel grants can be used to partially cover conference registration and/or hotel accommodation. The SIGBED leadership views travel grants as one of the best investments into the SIG future and the budget allocation for travel grants has been increased every year.

* ESWEEK 2018 in Torino, Italy: SIGBED awarded 15 grants, and the total amount of travel awards was $15,000.
* CPS-IoT Week 2019 in Montreal, Canada: We received 15 applications for support, out of which 11 were selected according to the published criteria. However, only 7 grants were funded, because 4 applicants were not able to obtain visas to attend the event. A total of $5,200 was awarded.
* ESWEEK 2019 in New York, USA: A total of 22 grants were awarded, of which 16 grants were funded by SIGBED (the remaining were funded by SIGDA). The total amount of travel awards SIGBED supported was $15,045.
* CPS-IoT Week 2020 and 2021 (virtual): Since the conferences were completely virtual and registration was free for attendances, no travel grant was needed.
* ESWEEK 2020 and 2021 (virtual): Since the conferences were completely virtual and registration fee was minimal, no travel grant was required.

We plan to continue provide student travel grants to help students cover the cost of conference registration when the conferences are held physically again or if needed even in the virtual setting.

# ACM SIGBED Student Research Competition

Besides regular student travel grants, SIGBED also offers funding support for undergraduate students to attend the ACM SIGBED Student Research Competition (SRC), which was organized by ESWEEK for the first time in 2019. The SRC is a forum for undergraduate and graduate students to share their research results, exchange ideas, and improve their communication skills while competing for prizes. In ESWEEK 2019, three undergraduate students were selected to receive the grants, and a total of $1587.23 was awarded. Last year, the competition could not take place because of COVID-19. This year, the SRC was held at the CPS-IoT Week in May 2021; however, as the conferences were virtual and registration is free, no grant was needed.

In addition to SIGBED grants, other sources of support were available to attendees as well.

# Diversity Grants

Besides travel grants, SIGBED also offers several other types of support that aims to promote diversity and to better support researchers within the community. SIGBED has provided $1000 towards support for an N2Women Young Researcher Fellowship award. This award supported attending a networking event that has been organized at CPS-IoT Week 2019 by Networking Networking Women (N2Women) to foster connections among women in communications and networking research. Furthermore, SIGBED also awarded a total of $2,450 in childcare financial support for researchers with young children to attend the ESWEEK 2019 conferences. In addition, SIGBED funded the Women at ESWEEK 2019 Dinner event, with a total amount of $628.03. Due to the COVID-19 crisis, all conferences have become virtual, so no support was needed in 2020 and 2021.

Moving forward, SIGBED continues to be committed to providing funding to foster diversity and improve the representation of women and underrepresented groups, as well as to better support researchers with family and children in the embedded systems community.

# New SIGBED Website and Blog

The old SIGBED website was beginning to show its age. (As one younger SIGBED member put it, the old website looked “so 1990s”.) To address this issue, we created an entirely new website with a more modern look last year. Please see https://sigbed.org/. The website has been constantly updated with fresh content, and it has become a useful source of references for the awards and events sponsored by SIGBED.

In addition, the new SIGBED blog that we created (as a replacement for *SIGBED Review*) has attracted many contributions by highly active researchers that reflect cutting-edge work on embedded systems being done today. Since its inception, the SIGBED blog has published twenty-five high quality articles on a variety of topics: cutting-edge research, thought-provoking ideas, conference reports, obituary and more. Sixteen articles were contributed from our team of regular contributors and the rest were from non-regular contributors in the community. Please see https://sigbed.org/blog/ for more details.

# Events Highlighting New Areas of Interest at Conferences

The main conferences supported by SIGBED are invariably concerned with identifying new directions and challenges for the research community and related industries. A key mechanism for this is through keynote presentations offered to conference attendees by luminaries in key related areas.

ESWEEK 2020 (which was held virtually) featured two keynotes on emerging research related to COVID-19 and on open challenges and future horizons in embedded systems:

* “Skin-Like Wireless Wearables-From Premature Babies in the NICU to Patients with COVID-19” by John A. Rogers of Northwestern University.
* “Digital Twins: Challenges and Opportunities in Various Industries” by Prith Banerjee of ANSYS.

Similarly, CPS-IOT WEEK 2021 featured the following keynotes, discussing CPS foundations and novel applications, as well as significant challenges in AI-enabled CPS:

* "Optimizing Machine Learning on Any Device, Automatically!" by Matt Welsh of OctoML.
* "Toward AI-enhanced Design of Resilient Cyber-Physical Systems: a Journey from Inception to Present Times" by Bruno Sinopoli of Washington University in St. Louis.
* "Foundations of Programming Cyber-Physical Systems," by Rupak Majumdar of Max Planck Institute for Software Systems.

In addition to keynote presentations, the SIGBED-sponsor conferences also organized panels that provide interactive discussions on important research challenges and potential opportunities. ESWEEK 2020 held a panel on ““Post COVID-19 Cyber Security: The Challenges and Solutions,” moderated by Sri Parameswaran, with panelists Richard Buckland of University of New South Wales, Farinaz Koushanfar of UCSD, Nasir Memon of NYU, and Ingrid Verbauwhede of KU Leuven.

# Innovative Programs that Provide Service to Some Part of our Technical Community

SIGBED continues to sponsor two major federated conferences, CPS-IoT WEEK (comprised in 2021 of HSCC, ICCPS, IPSN and RTAS, and IoTDI) in the spring and ESWEEK (comprised of CASES, CODES+ISSS, and EMSOFT) in the fall, as well as several other leading conferences in the embedded systems community, including NOCS, LCTES, CHASE, SenSys, and MEMOCODE.

Besides the new blog, the SIGBED-MEMBERS mailing list is used for announcement of events of interest to the community.

# Recognitions

* SIGBED Member Lothar Thiele received the IEEE TCRTS Achievement and Leadership Award in 2021.
* SIGBED Member Sam H. Noh was named ACM Fellow in 2021.
* SIGBED Vice Chair Wang Yi was named ACM Fellow in 2021.
* SIGBED Member Chenyang Lu was named ACM Fellow in 2021.
* SIGBED Member Tarek Abdelzaher was named IEEE Fellow in 2021.

# Issues

Like all other SIGs, COVID-19 has created substantial challenges to our activities, preventing several of our plans from being materialized. For example, we put significant

effort into creating the new SIGBED Scholars program; however, due to the transition to virtual-only conferences, our first class of young scholars had to miss the opportunity to attend CPS-IOT Week 2020 in person, and we also had to temporarily postpone the selection of new scholars for this year. Similarly, the pandemic has also created many obstacles to our planned activities on diversity and on fostering undergraduate research. Nevertheless, with the increasing availability of vaccines and physical conferences more likely to be within reach, we hope to resume and double down these efforts moving forward.

**SIGCAS Annual Report**

**July 2020 – June 2021**

**Submitted by: Douglas Schuler, SIGCAS Chair**

1. Comment on the ways in which the SIG is a healthy and viable organization

Computers and Society provides a multi-faceted and increasingly critical perspective for examining the impacts and implications of the work of our profession. We appreciate our role within the family of ACM SIGs and we are striving to fulfill our obligations.

There was a fairly extensive turnover of leadership in the year before this but the current board has been working collaboratively to plan and execute a solid program. The SIG is healthy and viable in the main indicators including newsletter production, awards, support for conferences, and member communication. Two of our board members, Richard Blumenthal and Michael Goldweber, are serving on the CS202x steering committee to help ensure that an effective and meaningful coverage of computers and society issues is part of the next CS ACM/IEEE/AAAI curricula recommendations.  Our newsletter is coming out regularly and offers a wide variety of content. Our editor, Richard Blumenthal, has been putting out a high quality product for the past two years. We've launched a "Short Pieces" feature to the newsletter to encourage diverse viewpoints. And, for what it's worth, our Twitter account has approximately doubled its number of followers over the last year.

We are now in the midst of organizing a SIGCAS Showcase virtual event for this September that will be available to our members and to anybody else who is interested. Besides showcasing our two award winners, we will have two industry panels, an educational panel, and a panel devoted to climate change and computing which should provide broad appeal to our members as well as to people outside of SIGCAS.

2. Describe your efforts related to Diversity, Equity, and Inclusion.

Over the past two years Michelle Trim has been writing an ongoing feature in the SIGCAS newsletter which highlights issues around equity and oppression. One example of this is "Refusing to Unmake the Lemonade, or How Not to Go Back to Normal" which was printed in the most recent issue. Moreover, last November (2020) the SIGCAS executive board conducted a survey of SIGCAS members to get a picture of who we are, where we work and live, what we're interested in, and what the membership would like to see the board do to better fulfill the SIGCAS mission. Following discussions with the executive board, SIGCAS Vice Chair Lisa Kaczmarczyk implemented the online survey, which was completed by 20% of SIGCAS members  While revealing a diversity of backgrounds and interests among our members, it also revealed a lack of diversity in terms of race, gender, and geographical distribution of members worldwide. The results were presented to the SIGCAS membership in the Chair's Column of the SIGCAS Newsletter. We also used the results to begin discussions with a consultant in relation to a DEI program. We have also begun discussing these issues with other SIGs. This is an important aim within our SIG and we are hoping to see real results in the upcoming year.

3. Provide a list of awards and recipients

The SIGCAS board made two awards this year. The "Making a Difference" award was given to Deanna Kosaraju, the Founder of Global Tech Women, a network of women in technology that provides resources, inspiring role models, and mentoring while helping to create communities around the world. The "Outstanding Service" award was given to Barbara Boucher Owens, for her many contributions to SIGCAS over the years. Both awards will be presented during our upcoming SIGCAS Showcase event and Deanna Kosaraju will be giving a keynote address.

4. List significant papers on new areas that were published in proceedings

SIGCAS sponsors two conferences: COMPASS and GoodIT. While both published excellent papers in their respective areas, it is not clear to the SIGCAS Board if any qualify for enumeration here. On the other hand, it should be noted that COMPASS 2021 had an incredibly diverse selection of accepted papers addressing issues, such as identifying hazards in socio-technological systems and biases in automated systems as well as papers on animal protection, crime, health, modeling, inequality, AI, sensing, and many many others. Payal Arora, of Erasmus University Rotterdam helped provide a reminder that computers are not magic machines that have a bias towards improving things, a misperception that many in the commercial sector help propagate. COMPASS has submitted a request for a regular ACM journal which is being reviewed for viability by ACM.

5. Describe conference activity

SIGCAS has been working in cooperation with two conferences of particular significance to SIGCAS:

ACM COMPASS which was inspired by the United Nations Sustainable Development Goals (SDGs). ACM COMPASS 2021 promotes multi-disciplinary and cross-disciplinary research and practice—including new research methods & practice and innovative approaches to design, systems & evaluation—that address key challenges for sustainable societies, such as equality, health, education, poverty, accessibility, conservation, climate change, energy, infrastructure and economic growth. Notably, the conference is "committed to approaches and research that address the challenges faced by under-represented and marginalized communities."

GoodIT (Information Technology for Social Good) which will be held later this year in a hybrid mode (most delegates in person, in Rome, Italy, and others attending remotely) focuses on the application of IT technologies to the social good. It focuses on "global citizens uniting to unlock the potential of individuals, technology, and collaboration to create positive societal impact."

Most of the usual "in cooperation" conferences that align with SIGCAS were not held this past year, or the organizers did not seek in-cooperation status.

6. Comment on special projects and non-conference programs that provided service to some part of your technical community

Our survey, discussed above, was one step towards improving the communication among the membership and the board and understanding the interests and expectations of the members. Another opportunity to advance this understanding will happen in September 2021 with the with our Town Hall discussion forum within the overall SIGCAS Showcase.

I have written to various people within the ACM community (the officers in the new SIGEnergy group, the main organizer in the new CSE curricular effort, and the editors at DGOV) about issues related to computers and society. The SIGEnergy organizers were very responsive and asked for recommendations for somebody to invite to their conference. The organizer of the CSE effort was very responsive to the recommendation to focus on social issues in terms of education. Finally, the editors of DGOV asked me to submit a commentary for their special issue on New Directions of Chinese Governance.

There are two active communities within SIGCAS:

HFOSS (Humanitarian Free and Open Source Software). This community focuses both on HFOSS projects in general, and strategies for incorporating HFOSS development in the CS curricula.

CSG-Ed (Computing for the Social Good in Education). This community focuses on how to shift CS education to be more focused on the use of computing for the betterment of society.

Both communities hold events throughout the year. Both groups held affiliated events co-located with the SIGCSE Annual Technical Symposium in addition to quarterly "meet ups/open houses."

Finally, the SIGCAS Board has authorized the use of funds for a DEI (though we prefer JEDI - Justice, Equity, Diversity and Inclusion) project to take place towards the end of 2021. The goal of this project is to inform the Board on specific activities that will attract a more diverse set of new members to the SIG.

7. A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years

Several activities that are intended to help improve SIGCAS synergistically are now planned or are actively being pursued. One of our goals is doubling our membership. Also we have definitely determined that increased diversity, equity, and inclusion is critical to SIGCAS. To this end we are in discussion with a DEI consultant (and members of other ACM SIGs) to help us increase diversity within SIGCAS as well as to increase the engagement within SIGCAS and the number of members. And being more visible to the world at large is key to membership increases and progress in DEI.

One of the main issues facing SIGCAS is what the leadership should do is to promote more engagement among the membership and in general how to make a positive impact on society. Computers and society is a vast area, one that has become perhaps the defining feature of our era. But its vastness and the complexity and inherent interdisciplinarity of how computerization and society interact makes it difficult to coalesce. One approach that we are exploring is establishing working or issue-oriented groups within SIGCAS or perhaps across ACM as a whole. The other issue is establishing to the degree that it's useful and necessary what SIGCAS could or should include in its purview and what belongs in other ACM SIGs. Along these lines we are considering the idea of establishing liaisons between SIGCAS and other SIGs. These issues are also very relevant when we consider how best to use our resources such as our newsletter and web site, and what events and other projects we organize.

**SIGCHI Annual Report**

**July 2020 – June 2021**

**1. The SIG is a healthy and viable organization**

SIGCHI continues to be on solid financial ground and our sponsored conferences are running smoothly. The SIG has successfully survived 1.5 years of COVID-19 with relatively small financial dents. In fact, the SIG has been offering financial support for attending its virtual conferences to all members who have sought this support. The involvement of the community in shaping key decisions for the SIG and its conferences is also growing, which is evident from the activity on social media, and through participation across virtual events and initiatives organized by the Executive Committee (EC), as documented below.

**2. Efforts related to Diversity, Equity, and Inclusion (DEI)**

Post-pandemic, the SIGCHI Development Fund committee that was led by Neha Kumar (then SIGCHI VP at Large, now SIGCHI President) took on the charge of revising and managing the [SIGCHI Development Fund](https://sigchi.org/resources/sigchi-development-fund/) and the [Gary Marsden Travel Awards](https://medium.com/sigchi/gary-marsden-travel-awards-66a0c09ba6cd), particularly in support of virtual and hybrid events and participation. It also set up the [SIGCHI Latin America Committee](https://medium.com/sigchi/muito-prazer-un-placer-conocerte-nice-to-meet-you-8b6609e60808) to strengthen SIGCHI’s ties and presence in Latin America. Other initiatives launched by the committee included the [Community Events and Holiday calendars](https://sigchi.org/community/), aimed at better coordinating information regarding events and holidays across the global SIGCHI community. These allowed SIGCHI members to be more informed of HCI activity in other parts of the world that they could participate in, and also share their cultural and regional constraints for event/conference organizers to be informed. The [Voices of SIGCHI](http://medium.com/sigchi) Medium publication, featuring regular blog posts, was an effort to bring together diverse voices from different parts of the world. These efforts continue to be developed.

From March to August, 2021, a series of ten [Equity Talks](https://www.youtube.com/watch?v=YixuoZNy0Tk&list=PLqhXYFYmZ-VdgN7nr6KoCgtsT5x_Owr2Q) was organized on the topics of (1) being global, (2) making SIGCHI accessible, (3) reviewing and mentorship, (4) infrastructures for equity, (5) understanding gender, (6) research and practice, (7) future of SIGCHI, (8) SIGCHI across chapters, (9) making SIGCHI sustainable, and (10) race and SIGCHI. Each of these sessions was recorded, with captioning and sign language support, and the recordings have been uploaded on SIGCHI’s YouTube channel and summarized in blog posts on the [SIGCHI Medium](https://medium.com/sigchi) publication. Prior to these talks, the Executive Committee also organized a series of [Ask-Me-Anything](https://www.youtube.com/watch?v=3ASXtU380vk&list=PLqhXYFYmZ-VeC7bL2J0hG2ejhYDDNJMz4) sessions in July-December 2020. These were targeted towards hosting conversations around each of the roles on the EC, so that the community could be more informed of the work of the various EC members. Both sets of EC events have been community-facing virtual events aimed at engaging SIGCHI members in conversations around improving transparency and accountability within the community.

We continue the work of [SIGCHI CARES](https://sigchi.org/resources/sigchi-cares/), which was first established in January 2020 to support those who experience discrimination and/or harassment at SIGCHI events, offering them an open and confidential conversation, which, with the affected individual(s)’ consent, we hope to cultivate better awareness of discriminatory dynamics on the part of event organizers and increasing the accountability of conference organizers, event staff, and conference attendees. CARES also works closely with other established allies within the SIGCHI community, such as Allyship. Over the course of 2020-2021, we have expanded our remit to include handling cases around peer reviewing, coercion, and abuse in the publication process. Shaowen Bardzell (then SIGCHI VP at Large) stepped down as the chair of SIGCHI CARES in June 2021 to focus on her new responsibilities as the Executive Vice President on the new SIGCHI Executive Committee. The new co-chairs of SIGCHI CARES are Celine Latulipe and Michael Muller. The SIGCHI CARES committee currently has 11 members.

Related to our broader DEI efforts is the establishment of the [Critical and Sustainable Computing](https://chi2021.acm.org/for-authors/presenting/papers/selecting-a-subcommittee#Critical-and-Sustainable-Computing) paper subcommittee at ACM CHI2021. This subcommittee welcomes HCI research connected to themes of social justice, global sustainability, critical-reflective research practice, artful and aesthetic experiences, and critical computing—all in pursuit of meaningful alternatives to the status quo. The subcommittee is epistemologically pluralistic, welcoming of a range of perspectives, approaches, and contributions that might take interpretivist, empirical, activist, political, ethical, critical, and/or pragmatic approaches to both societal challenges and how HCI research frames itself in relation to them. The roots of the values that underpin this new subcommittee can be extended back to the mid-1970s, with the 1975 [Aarhus Decennial Conference focusing on critical computing](https://conferences.au.dk/aarhus2015/the-aarhus-decennial-series/), and the lively discussion of HCI’s impact on society has grown ever since (the ACM DIS conference series began having Critical Computing as one of the paper subcommittees in 2019). The critical stance of HCI research has been continually sharpened to consider people, our own individual and collective expressions of our humanity and solidarity, as more than just interchangeable cogs in the machine. The Critical and Sustainable Computing subcommittee aspires to support expressions of research that foster deliberative self-awareness and care in the research, design, and development of interactive systems. It engages the broader HCI community’s own contributions—both positive and negative—to concerns such as criticality and ethics in computing, social justice, and climate crisis and by the brave actions of those within computing and beyond who have challenged societies to be more just.

In the second year of our term, we opened [two new Adjunct Chair positions](https://sigchi.org/2020/10/towards-a-more-equitable-accessible-and-responsive-sigchi/) to support DEI initiatives: AC for Equity and AC for Accessibility. We recruited two ACs in each role. On the equity front, Adriana Vivacqua took the lead in putting together the SIGCHI Latin America Committee, mentioned above, to help build ties and increase interaction between Latin American groups and the SIGCHI community. This involved reaching out to the community through questionnaires, meetings, and roundtable talks. Vinoba Vinayagamoorthy undertook efforts to learn how our 24 conferences’ steering committees operate, as well as their diverse needs and priorities.

On the accessibility front, a new [Vision for an Accessible SIGCHI](https://medium.com/sigchi/vision-for-an-accessible-sigchi-17e902836b8f) introduced by ACs Stacy Branham and Soraia Prietch details a strategy for equitable participation of our members with disabilities. Towards meeting this vision, we secured annual contracts with providers of sign language interpreting and real-time human captioning. These services have been used to broaden the reach of our virtual public events, including our widely-viewed [Equity Talk video series](https://www.youtube.com/playlist?list=PLqhXYFYmZ-VdgN7nr6KoCgtsT5x_Owr2Q). We have tripled our dedicated accessibility budget for the 2021-22 fiscal year and formed an [Accessibility Committee](https://sigchi.org/2021/07/welcoming-the-new-sigchi-accessibility-committee/) to expand support for accessibility initiatives going forward.

**3. Awards and Recipients**

**SIGCHI Lifetime Research Award**

Scott Hudson, ​​Carnegie Mellon University

**SIGCHI Lifetime Practice Award**

John Richards, IBM Research Division

**SIGCHI Lifetime Service Award**

Wendy Kellogg, Retired

Phillippe Palanque, Université Toulouse III – Paul Sabatier

**SIGCHI Social Impact Award**

Maria Cecília Calani Baranauskas, State University of Campinas (UNICAMP)

Andy Dearden, Sheffield Hallam University

Juan Gilbert, University of Florida

**SIGCHI Academy**

Maneesh Agrawala, Stanford University

Ann Blandford, University College London

Jeff Heer, University of Washington

Jonathan Lazar, University of Maryland

Fabio Paterno, CNR-ISTI

Rosalind Picard, MIT

Fernanda Viegas, Google

Allison Woodruff, Human-computer Interaction Researcher

**SIGCHI Outstanding Dissertation Award**

Josh Andres, IBM Research-Australia

Arunesh Mathur, Princeton University

Qian Yang, Cornell University

### 4. Significant Papers from the SIG (Best Paper Award Recipients at CHI 2021)

* What Do Hackathons Do? Understanding Participation in Hackathons Through Program Theory Analysis — *Jeanette Falk, Gopinaath Kannabiran, Nicolai Brodersen Hansen*
* Falx: Synthesis-Powered Visualization Authoring — *Chenglong Wang, Yu Feng, Rastislav Bodik, Isil Dillig, Alvin Cheung, Amy J Ko*
* "Can I Not Be Suicidal on a Sunday?": Understanding Technology-Mediated Pathways to Mental Health Support — *Sachin R Pendse, Amit Sharma, Aditya Vashistha, Munmun De Choudhury, Neha Kumar*
* CapContact: Super-resolution Contact Areas from Capacitive Touchscreens — *Paul Streli, Christian Holz*
* RadarNet: Efficient Gesture Recognition Technique Utilizing a Miniaturized Radar Sensor — *Eiji Hayashi, Jaime Lien, Nicholas Gillian, Leonardo Giusti, Dave Weber, Jin Yamanaka, Lauren Bedal, Ivan Poupyrev*
* Screen Recognition: Creating Accessibility Metadata for Mobile Applications from Pixels — *Xiaoyi Zhang, Lilian de Greef, Amanda Swearngin, Samuel White, Kyle Murray, Lisa Yu, Qi Shan, Jeffrey Nichols, Jason Wu, Chris Fleizach, Aaron Everitt, Jeffrey P Bigham*
* LGBTQ Persons' Pregnancy Loss Disclosures to Known Ties on Social Media: Disclosure Decisions and Ideal Disclosure Environments — *Cassidy Pyle, Lee Roosevelt, Ashley Lacombe-Duncan, Nazanin Andalibi*
* Increasing Electrical Muscle Stimulation’s Dexterity by means of Back of the Hand Actuation — *Akifumi Takahashi, Jas Brooks, Hiroyuki Kajimoto, Pedro Lopes*
* Designing Menstrual Technologies with Adolescents — *Marie Louise Juul Søndergaard, Marianela Ciolfi Felice, Madeline Balaam*
* The Show Must Go On: A conceptual model of conducting synchronous participatory design with children online — *Kung Jin Lee, Wendy Roldan, Tian Qi Zhu, Harkiran Kaur Saluja, Sungmin Na, Britnie Chin, Yilin Zeng, Jin Ha Lee, Jason Yip*
* Building for ‘We’: Safety Settings for Couples with Memory Concerns — *Nora McDonald, Helena M. Mentis*
* Oh, Snap! A Fabrication Pipeline to Magnetically Connect Conventional and 3D-Printed Electronics — *Martin Schmitz, Jan Riemann, Florian Müller, Steffen Kreis, Max Mühlhäuser*
* Getting Ourselves Together: Epistemic Burden and Data-centered Participatory Design Research — *Jennifer Pierre, Roderic Crooks, Morgan Currie, Britt Paris, Irene Pasquetto*
* "Everyone wants to do the model work, not the data work": Data Cascades in High-Stakes AI — *Nithya Sambasivan, Shivani Kapania, Hannah Highfill, Diana Akrong, Praveen Paritosh, Lora M Aroyo*
* Resisting the Medicalisation of Menopause: Reclaiming the Body through Design — *Marianela Ciolfi Felice, Marie Louise Juul Søndergaard, Madeline Balaam*
* U!Scientist: Designing for People-Powered Research in Museums — *Mmachi God'sglory Obiorah, James K.L. Hammerman, Becky Rother, Will Granger, Haley Margaret West, Michael Horn, Laura Trouille*
* “Why lose control?” A Study of Freelancers' Perspectives with Gig Economy Platforms — *Juan Carlos Alvarez de la Vega, Marta E. Cecchinato, John Rooksby*
* "That courage to encourage": Participation and Aspirations in Chat-based Peer Support for Youth Living with HIV — *Naveena Karusala, David Odhiambo Seeh, Cyrus Mugo, Brandon Guthrie, Megan A Moreno, Grace John-Stewart, Irene Inwani, Richard Anderson, Keshet Ronen*
* The Ethics of Multiplayer Game Design and Community Management: Industry Perspectives and Challenges — *Lucy A. Sparrow, Martin Gibbs, Michael Arnold*
* Coupling Simulation and Hardware for Interactive Circuit Debugging — *Evan Strasnick, Maneesh Agrawala, Sean Follmer*
* Impact of Task on Attentional Tunneling in Handheld Augmented Reality — *Brandon Victor Syiem, Ryan M. Kelly, Jorge Goncalves, Eduardo Velloso, Tilman Dingler*
* XRgonomics: Facilitating the Creation of Ergonomic 3D Interfaces — *João Marcelo Evangelista Belo, Anna Maria Feit, Tiare Feuchtner, Kaj Grønbæk*
* Heuristic Evaluation of Conversational Agents — *Raina Langevin, Ross J Lordon, Thi Avrahami, Benjamin R. Cowan, Tad Hirsch, Gary Hsieh*
* Clandestino or Rifugiato? Anti-immigration Facebook Ad Targeting in Italy — *Arthur Capozzi, Gianmarco De Francisci Morales, Yelena Mejova, Corrado Monti, André Panisson, Daniela Paolotti*
* The Landscape and Gaps in Open Source Fairness Toolkits — *Michelle Seng Ah Lee, Jatinder Singh*
* Understanding Data Accessibility for People with Intellectual and Developmental Disabilities — *Keke Wu, Emma Petersen, Tahmina Ahmad, David Burlinson, Shea Tanis, Danielle Albers Szafir*
* How to Evaluate Object Selection and Manipulation in VR? Guidelines from 20 Years of Studies — *Joanna Bergström, Tor-Salve Dalsgaard, Jason Alexander, Kasper Hornbæk*
* Designing Interactive Transfer Learning Tools for ML Non-Experts — *Swati Mishra, Jeffrey M Rzeszotarski*

**5. Conference Activity**

SIGCHI-sponsored conferences were all conducted in a fully virtual format in 2020-2021.  As opposed to events having to pivot when pandemic conditions worsened, most conferences planned to go fully virtual from the onset. This change in the planning process brought a learning curve on best practices for virtual conferences, and the need for increased sharing of experiences with different tools and formats. Andrew Kun, the SIGCHI VP for Conferences, organized a series of panel discussions to facilitate such knowledge sharing. In these panels, members of all SIGCHI-sponsored conference steering committees and organizing committees for upcoming conferences. These virtual panels were received well by the participants, and we will be organizing them regularly in the new EC term (2021-2024).

Through in-depth interviews conducted with several general chairs of SIGCHI conferences, we highlight the following lessons learned for the virtual segments of future conferences:

* In the case of hybrid (and potentially all-virtual) conferences, make the shift to online early. Think online-first not virtual-first!
* Consider using the virtual conference activities towards radically expanding the conference playing field, attracting those on the peripheries of the conference community. Think global!
* No platform is going to be perfect, but combining platforms (e.g., Zoom and Discord) or working with the platform’s team to tailor it to a conference (e.g., OhYay for IMX 2021) might work well.
* Be inclusive when it comes to time and time zones. Make sure the (dis)comfort is distributed. Not all of the attendees will ever make all of the sessions. Leave enough room for attendees to tend to their in-person lives.
* Invest care and effort into planning social events. Lots can be done remotely, e.g., karaoke events, virtual tours, yoga classes, board games.
* Cater to students, who are arguably more impacted by the lack of an in-person experience than senior scholars. Facilitate as many conversations with/for students as possible.
* Distribute the costs to recognize that different attendees have different capacities to pay for attending. Use or appeal to SIGCHI resources when possible.
* Finally, think people-first! Include CARES representatives, keep open channels for people to reach out, and prioritize participation of new and old members.

Overall, SIGCHI sponsored conferences continue to navigate the current global pandemic with grace, skill and commitment to community and science.  Due to the efforts of our volunteer organizers, most of our planned specialized conferences were successfully conducted, and our community remains strong.

**6. Special Projects and Non-Conference Programs that Provided Service**

See 2 above regarding the following programs:

* SIGCHI Development Fund,
* Gary Marsden Travel Awards,
* SIGCHI Equity Talks, and
* SIGCHI CARES.

**7. Key Issues Facing SIGCHI**

We highlight the key issues facing our SIG below. These are also areas within which we are recruiting adjunct chairs (ACs), or have already, and will be setting up teams to broaden and deepen the focus.

* **Global/Local:** Many members of our EC are committed to growing SIGCHI’s presence as a global entity, with strong local ties and roots. Our VPs at Large and VP Chapters will ensure a strong set of activities and conversations “across borders”. We will focus on introducing new chapters and developing existing ones, creating regional committees in support of building HCI community across relatively less HCI-dense parts of the world.
* **Awards:** We are rethinking our awards programs to ensure that these are more inclusive, and target a more diverse set of nominations than before.
* **Sustainability:** Our AC for sustainability and their team will help SIGCHI shape its response to climate change and environmental collapse by deciding how to cut back on travel as a community, carefully move our activities online, and analyze possible changes our conferences and researchers could take on in support.
* **Accessibility:** Having recently recruited our Accessibility Committee, we will ensure that our conferences, EC and community events, publications, website, etc. are all accessible, and that our membership receives the necessary education to recognize the importance of communicating in ways that are sensitive towards the disabled members in our community.
* **Volunteering:** We will be investing in creating and sustaining leadership and mentorship pipelines for our volunteers, across conference and community roles.
* **Equity:** Challenges in the realm of equity continue and we will ensure that we learn to not only ensure that there is equal representation at all levels throughout the SIG, but that this participation is also equitable, whether we look at marginalization on account of race, gender, class, religion, or any other factor.
* **Community Support:** We have done well in regards to supporting our community through “virtual travel awards” and development funds. Now that we have the mechanisms in place, we look forward to a more directed and inclusive approach to making this support useful and usable for our entire, global membership.
* **Partnerships:** We will be looking to grow our partnerships with a variety of organizations across the board, including practitioner organizations such as UXPA, adjacent research communities such as SIGGRAPH and SIGCAS, and HCI communities in Africa and Asia.

**SIGCOMM Annual Report**

**July 2020 - June 2021**

**Submitted by: Roch Guerin, Past Chair**

SIGCOMM is ACM's professional forum for the discussion of topics in the field of communications and computer networks, including technical design and engineering, regulation and operations, and the social implications of computer networking. SIG members are particularly interested in the systems engineering and architectural questions of communications.

SIGCOMM continues to be a thriving organization serving a broad community of researchers from both academia and industry interested in all aspects of computer networking. We sponsor several successful, single-track, high-impact conferences, several of them in cooperation with other SIGs. There are a number of highlights to report from the past year.

### Education Initiatives

As the COVID-19 pandemic extended into the past year, our educational efforts continued to be of great importance. The SIG kept up its aggressive efforts to support the well-being and education of students around the globe. In collaboration with the EU's EMPOWER initiative, and the NSF PAWR Project Office, the SIG helped launch The Networking Channel (https://networkingchannel.eu/), an online talk series centered around the networking research and education communities. The channel was launched in March 2021 and has already gained a strong and consistent following, with hundreds of participants each week. The channel has diverse representation, with participants from all continents, from a broad spectrum of university types (R1/R2, teaching universities, etc.). The talks are interactive, taking live questions and encouraging participation from the community. Topics range from next-generation networking technologies, to how to succeed in graduate school (the latter had over 800 registrants). The series will continue into the fall, where we expect to have topics such as "Teaching online during the pandemic and beyond" (to help support the many educators still grappling with how to effectively reach students in our increasingly online profession, and "Research directions in Wireless" (to help students and young faculty think of research ideas in this exciting space).

With students at home and separated physically from their home institutions there is danger of them becoming isolated from both educational and support structures critical to their learning. To address this The SIG has also launched multiple virtual environments to support students during the pandemic. For example, we have launched an ACM SIGCOMM Slack workspace. Slack is a collaborative platform which includes chat functions as well as the ability to share and interact on files and activities. The workspace has been a rousing success, growing to over 2,300 members, and maintaining regular and ongoing discussions on a variety of networking and network-education related topics. The platform also contains a channel run by a licensed social worker from the University of Illinois at Urbana-Champaign Counseling Center to provide emotional and wellness support to students during these challenging times.

A third challenge encountered in the era of COVID-19 is supporting virtual conferences. One thing that is becoming clear is students are becoming more isolated at these events. The ability to run into each other in lunch lines, catch the authors after events, the happenstance meetings in hallways, seem like small things but are so crucial to the creation of new ideas and strengthening the social and intellectual bonds that make up our community. Students and new faculty are especially prone to this given the early stage of their careers. To address this, the SIG was heavily involved in helping select and customize platforms that can better support interactions at ACM SIGCOMM 2021. First, based on the success of similar initiatives the SIG undertook last year, the SIG offered a collection of "matchmaking" services where students are paired up for virtual meetings with faculty who shared similar interests to them. The SIG also created a "Student Welcome" session, to be held the Friday before the conference, where students will be provided with advice on how to attend a conference (how to approach people, how to manage your time, etc), and where they will be given the opportunity to ask any question they may have on how to make the most of their experience in attending a virtual conference. In addition, the SIG led the creation of "flocks", where professionals will be paired up with groups of students, whom they will then shepherd throughout the event, encouraging them to interact with other participants, and offer general advice. The SIG also helped introduce novel ideas into the conference's Gather.town environment, including various social whiteboarding activities, interactive games, and a fun scavenger hunt to help break the ice.

As the situation with vaccinations progressed, the SIG also noted an opportunity to begin initiatives to increase some aspects of in-person interactions. In particular, the SIG worked with SIGCOMM'21 to launch the concept of "pods" -- events where groups of individuals could get together to listen to and discuss talks as they are presented (virtually) at a conference, in locations where it is safe and proper to do so. The SIG led creation of multiple pods, and created avenues for other individuals to propose creation of their own pods. This initiative was well-received and appears successful, with several pods in the process of being stood up, both in the US and internationally.

In addition to these efforts, the SIG has done a few other things as well. First, the SIG has worked with the ACM SIGCOMM Computer Communications Review (CCR) to create a new track on education. Several education papers have been submitted and accepted for publication. The CCR website which publishes the papers tracks views each paper gets, and we found that the education papers received the highest number of views of all papers in the issue, for every issue since the education track was created (two issues so far). Second, the SIG leveraged community input to develop list of the most important papers in the field of networking, and placed the list for public use on Wikipedia[[1]](#footnote-1). Third, the SIG has started an interview series with "Great Educators" in the field of networking - one interview has taken place so far, and we expect to conduct interviews at a slow rate over the next year for periodic release in CCR.

### Conferences and associated support

The SIG sponsors an eponymous flagship conference and is the sole sponsor of the following conferences: CoNEXT, Information-Centric Networking (ICN), and the HotNets Workshop. The SIG also co-sponsors the following conferences: Internet Measurement Conference (IMC), SenSys, ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS), Symposium on SDN Research (SOSR), and ANRW, the joint ACM and IETF Applied Networking Research Workshop.

In addition to conferences we sponsor or co-sponsor, we are in-cooperation with a number of events, including the International Conference on Network and Service Management (CNSM), the International Teletraffic Congress (ITC), the USENIX Symposium on Networked Systems Design and Implementation (NSDI), the ACM Conference on Embedded Networked Sensor Systems (SenSys), the ACM Multimedia Systems Conference (MMSys), the Network Traffic Measurement and Analysis (TMA) conference, the International Conference on Future Internet Technologies (CFI). In addition, we also support a number of regional conferences, COMSNETS, AINTEC, and APNET, through an in-cooperation status and travel grants programs, although, as with our other conferences, travel grants have been put on hold during the pandemic.

Because of the COVID-19 pandemic, all our conferences switched to a virtual mode in 2020 and the SIG decided early on to extend this to 2021. The switch was particularly challenging for the SIGCOMM 2020 conference that was to be held in NYC and that had to pivot to a virtual mode very late in its planning process. The organizers, however, stepped up to the task and while there were a few scheduling challenges, this first virtual edition of the conference was a success. More importantly, the fact that the organizers embraced the opportunity to explore various alternatives for making virtual conferences more interactive also provided a wealth of information that proved invaluable in helping other conferences, including the 2021 edition of the SIGCOMM conference itself, plan for a successful virtual presence. From a sneak preview at the platform that has been put in place for the 2021 edition of the conference that is to be held in a couple of weeks, the level of sophistication and the many options now available for interactions points to a more mature and well thought-out process. A good part of that is to be credited to the early efforts that went into organizing the 2020 edition and to the volunteers who helped translate the lessons learned in 2020 into significant improvements for 2021.

These efforts also paid off on the financial front, as all our conferences were successful in weathering the financial uncertainty that resulted from the pandemic and the switch to virtual platforms. In particular, the 2020 edition of the SIGCOMM closed with a sizable surplus of ~$90k, due to the lower costs associated with a fully remote conference and continued strong industry support for the event in spite of the fact that a virtual platform was arguably sub-optimal for them. Part of the lessons learned from the 2020 experience actually led to changes in how sponsors can connect with conference participants in a virtual setting, and the hope is that those changes will help address some of the concerns they had expressed following the 2020 conference.

While dealing with the pandemic and its impact on our conference consumed much of our Conference Coordinator’s attention, he also undertook a number of initiatives aimed at improving our process for coordinating and managing our conferences. This included:

* A complete rewrite of our conference handbook with updated and expanded links to relevant documents and policies, and additional information to improve the organizational process.
* The creation of “a reverse calendar” applicable to all SIG conferences that provides conference organizers with a detailed time-line of what needs to be done and when ahead of the conference dates themselves. The calendar is useful to both conference organizers who can use it to plan their activities, and also to the SIG that can use it to make sure that things are on track.
* Spearheaded a discussion within the EC that produced an updated document describing conditions for granting in-cooperation status to various events, and laid out expectations for the renewal of such in-cooperation status.
* Initiated discussions with conference volunteers in anticipation of a post-covid return to normal to determine what this would mean for conference organization. In particular, as the SIG opted to require that a remote participation option be preserved even after returning to an in-person format, this raised questions on how to best handle such an option. There is much uncertainty on how to best do this and remains a matter of considerable debate. It also creates logistical and financial challenges for conference organizers, at least until we gain some experience with how the SIG community takes advantage of the availability of such an option.

In addition to these efforts, the Conference Coordinator also worked with the IMC Steering committee to help with its restructuring towards ensuring an active involvement in the planning of future editions of the conference.

Because the SIG’s finances continue to be strong, as we consider a return to in-person (hybrid) events, this will allow us to continue to offer and even expand a strong travel grant program with a special focus on increasing diversity. Unfortunately, due to SIG events still being fully remote in this reporting year, “Diversity and Outreach” efforts could mostly only focus on fee vouchers for remote attendance. This also affected the N2Women Workshop that was held with SIGCOMM 2020, and we hope that the SIG’s expanded support for N2Women will take full effect once we return to in-person events. Also affected by the pandemic was our generous general student travel support (typically totaling around $100k per annum) as well as invited speaker travel funds and special diversity grants to facilitate participation in PC meetings by members from under-represented areas. We plan to fully resume the SIG’s financial support of (travel) grants aimed at students and/or junior faculty as soon as possible.

We also plan to fully resume the SIG financial support of the several regional conferences in computer networking the SIG is associated with. In particular, the current set of regional conferences we support financially includes COMSNETS, a major networking conference in India, the Asian Internet Engineering Conference (AINTEC), and a conference focused on the Asia-Pacific region, APNET. COMSNETS has been quite successful and has become a strong regional event in its own right, and AINTEC has started to more fully realize its original goals of broadening participation in the Asia-Pacific region, by targeting events outside its original Thailand location. Last but not least, the SIG continued its support for the development of a research community in Latin America, through LANCOMM, a student workshop. The SIG would have provided support for both student travel grants as well as invited keynote speakers for LANCOMM'20, but unfortunately the workshop could not be held due to the COVID-19 situation in Brazil.

The SIG also supports a handful of summer schools with grants. This year, we provided grad cohorts 18K, the APnet conference with 10K, and the ANWR’21 workshop co-located with IETF with 3K.

In addition, the SIG offers support for special initiatives upon request.

**Miscellaneous.** We are continuing the practice of waiving the SIGCOMM contingency share for our fully sponsored conferences to give the organizers more flexibility and allow them to keep registration fees as low as possible.

On the logistics front, the SIG has continued to work with AMS to provide administrative support to our volunteers. AMS provides day-to-day support to the EC, but has also been involved in various operational aspects of our conferences, and in particular in helping select and customize online event management platforms to facilitate greater interactions during virtual conferences. Those additional services have come at a cost, but have helped offload a significant burden from volunteer organizers, and we hope they have helped make the experience of attending virtual events more enjoyable and productive for our members and supporters alike. We anticipate carrying out a careful assessment of the relative benefits that those platforms afford as we explore how to best structure SIG events in a post-pandemic world.

### Newsletter

The SIG’s newsletter, Computer Communications Review (CCR), continues to publish four issues per year. Since 2016, CCR has been published entirely on both the ACM Digital Library and at https://ccronline.sigcomm.org. We now publish three types of articles: technical papers, educational contributions, and editorials. The editorial contributions range from meeting reports to reflections on the evolution of the field. Technical papers are peer-reviewed by members of the editorial board and external reviewers. Educational papers are handled by the SIGCOMM education director, and reviewed by him and the CCR editor. Educational papers are peer-reviewed (as technical papers are) but using a different standard than technical papers, so as to facilitate the dissemination of contributions that may be inspiring to the SIGCOMM community. Just as technical papers, for the sake of review transparency, educational papers are published with an open review[[2]](#footnote-2). We accepted 3 educational papers since the start of this new type of contributions, most of which have proved very popular as per the number of views recorded on CCR-online.

Since taking over as CCR editor, the new editor has introduced minor changes to the editorial board, mostly in retiring some board members who wanted to leave and introducing new ones to improve coverage of popular areas. The reviewing process has also evolved, by improving the review transparency through more open communication between authors and reviewers, and by making the newsletter more open to various types of contributions that add value to the community. These changes have been positively received by the SIGCOMM community, as per (1) the personal feedback received from authors, who appreciate the increased transparency in how decisions are made, as well as through (2) the steady increase in submissions of both editorial notes and educational contributions. We believe that CCR is strengthening its role as the newsletter of the SIG, by focusing less on publishing technical papers (which should normally appear either in our conferences or more traditional archival journals) and more on informing the community as well as allowing community members to

discuss timely topics.

### Awards

**SIGCOMM Lifetime Achievement Award**: This year, SIGCOMM recognized two Internet pioneers with the lifetime award. Dr. **Amin Vahdat** from Google, and Prof. **Lixia Zhang** from UCLA. The award recognizes Dr. Vahdat for groundbreaking contributions to data center and wide area networks, and Prof. Zhang for pioneering work in Internet protocol development. Both awards will be presented during the annual SIGCOMM conference.”

The award committee consisted of Bruce Davie (VMWare), Craig Partridge (Colorado State University, chair), and Karen Sollins (MIT).

**SIGCOMM Doctoral Dissertation** **Award for Outstanding PhD Thesis in Computer Networking and Data Communication:** The award for the best doctoral dissertation submitted in 2019 went to two recipients as well, Dr. **Deepak Vasisht** for his thesis titled “Towards Realizing the Internet-of-Things Vision: In-body, Homes, and Farms”, and Dr. **Mina Tahmasbi Arashloo** for her thesis titled “Stateful Programming of High-Speed Network Hardware”. Dr. Vasisht is recognized for visionary research on internet-of-things services with concrete impact solving human-critical problems in different application areas including in-body, homes, and agriculture. Dr. Tahmashi Arashloo is recognized for pioneering the idea of raising the level of programming abstraction, and for proposing a new architecture for programming network transport protocols in FPGAs and a new language and compiler system for developing stateful applications for software-defined networks.

The committee consisted of Christophe Diot (Google, chair), Jim Kurose (UMass Amherst), Lili Qiu (University of Texas at Austin), Catherine Rosenberg (University of Waterloo), and Geoff Voelker (UC San Diego).

## SIGCOMM Rising Star Award: The recipient of the 2019 SIGCOMM Rising Star Award was Ethan Katz-Bassett from ColumbiaUniversity. The award was in recognition of outstanding research contributions, early in his career, in improving the reliability and performance of Internet services. His practical and principled measurement-driven approach has led to innovative high-impact contributions across academia and industry.

## The rising star award committee consisted of Lixin Gao (University of Massachusetts, Amherst), Thomas Karagiannis (MSR Cambridge, chair), Craig Partridge (Colorado State University), Lili Qiu (University of Texas at Austin).

**SIGCOMM Test of Time Paper Award**: One paper was selected for the 2019 award by a committee composed of Paul Barford (University of Wisconsin-Madison), Hamed Haddadi (Imperial College London, chair), Thomas Karagiannis (Microsoft Research Cambridge), Sue Moon (KAIST), Walter Willinger (NIKSUN). The *paper* is:*“*A network in a laptop: rapid prototyping for software-defined networks" by Bob Lantz, Brandon Heller, and Nick McKeown, in ACM HotNets 2010.

Using illustrative cases studies, the paper demonstrates how a Mininet-based design can be wrapped in a VM to create a “network appliance” that can be distributed over the Internet so that anyone with a laptop can download and run a ``living, breathing” example of a new networked system. The paper has had a profound impact on catalyzing collaborative network research by setting new standards for reproducible networking research in the form of “runnable papers.”

**SIGCOMM Networking Systems Award**: This award was awarded for the third time in 2020 by a committee comprised of: Anja Feldmann (Max-Planck-Institut für Informatik), Srinivasan Keshav (University of Cambridge, chair), and Nick McKeown (Stanford University).

**“The ns family of network simulators (ns-1, ns-2, and ns-3)”**

“ns” is a well-known acronym in networking research, referring to a series of network simulators (ns-1, ns-2, and ns-3) developed over the past twenty five years. ns-1 was developed at Lawrence Berkeley National Laboratory (LBNL) between 1995-97 based on an earlier simulator (REAL, written by S. Keshav). ns-2 was an early open source project, developed in the 1997-2004 timeframe and led by collaborators from USC Information Sciences Institute, LBNL, UC Berkeley, and Xerox PARC. A companion network animator (nam) was also developed during this time [Est00]. Between 2005-08, collaborators from the University of Washington, Inria Sophia Antipolis, Georgia Tech, and INESC TEC significantly rewrote the simulator to create ns-3, which continues today as an active open source project.

All of the ns simulators can be characterized as packet-level, discrete-event network simulators, with which users can build models of computer networks with varying levels of fidelity, in order to conduct performance evaluation studies. The core of all three versions is written in C++, and simulation scripts are written directly in a native programming language: for ns-1, in the Tool Command Language (Tcl), for ns-2, in object-oriented Tcl (OTcl), and for ns-3, in either C++ or Python. ns is a full-stack simulator, with a high degree of abstraction at the physical and application layers, and varying levels of modeling detail between the MAC and transport layers. ns-1 was released with a BSD software license, ns-2 with a collection of licenses later consolidated into a GNU GPLv2-compatible framework, and ns-3 with the GNU GPLv2 license. ns-3 [Hen08, Ril10] can be viewed as a synthesis of three predecessor tools: yans [Lac06], GTNetS [Ril03], and ns-2 [Bre00]. ns-3 contains extensions to allow distributed execution on parallel processors, real-time scheduling with emulation capabilities for packet exchange with real systems, and a framework to allow C and C++ implementation (application and kernel) code to be compiled for reuse within ns-3 [Taz13]. Although ns-3 can be used as a general-purpose discrete-event simulator, and as a simulator for non-Internet-based networks, by far the most active use centers around Internet-based simulation studies, particularly those using its detailed models of 4G LTE (led by CTTC) and Wi-Fi systems. The project is now focused on developing models to allow ns-3 to support research and standardization activities involving several aspects of 5G NR, next-generation Wi-Fi, and the IETF Transport Area.

The ns-3-users Google Groups forum has over 9000 members (with several hundred monthly posts), and the developer mailing list contains over 1500 subscribers. Publication counts (as counted annually) in the ACM and IEEE digital libraries, as well as search results in Google Scholar, describing research work using or extending ns-2 and ns-3, continue to increase each year, and usage also appears to be growing within the networking industry and government laboratories. The project’s home page is at [https://www.nsnam.org](https://www.nsnam.org/), and software development discussion is conducted on the ns-developers@isi.edu mailing list.

The main authors of ns-1 were (in alphabetical order): Kevin Fall, Sally Floyd, Steve McCanne, and Kannan Varadhan. ns-2 had a larger number of contributors. Space precludes listing all authors, but the following people were leading source code committers to ns-2 (in alphabetical order): Xuan Chen, Kevin Fall, Sally Floyd, Padma Haldar, John Heidemann, Tom Henderson, Polly Huang, K.C. Lan, Steve McCanne, Giao Nguyen, Venkat Padmanabhan, Yuri Pryadkin, Kannan Varadhan, Ya Xu, and Haobo Yu. A more complete list of ns-2 contributors can be found at: <https://www.isi.edu/nsnam/ns/CHANGES.html>.

The ns-3 simulator has been developed by over 250 contributors over the past fifteen years. The original main development team consisted of (in alphabetical order): Raj Bhattacharjea, Gustavo Carneiro, Craig Dowell, Tom Henderson, Mathieu Lacage, and George Riley.

Recognition is also due to the long list of ns-3 software maintainers, many of whom made significant contributions to ns-3, including (in alphabetical order): John Abraham, Zoraze Ali, Kirill Andreev, Abhijith Anilkumar, Stefano Avallone, Ghada Badawy, Nicola Baldo, Peter D. Barnes, Jr., Biljana Bojovic, Pavel Boyko, Junling Bu, Elena Buchatskaya, Daniel Camara, Matthieu Coudron, Yufei Cheng, Ankit Deepak, Sebastien Deronne, Tom Goff, Federico Guerra, Budiarto Herman, Mohamed Amine Ismail, Sam Jansen, Konstantinos Katsaros, Joe Kopena, Alexander Krotov, Flavio Kubota, Daniel Lertpratchya, Faker Moatamri, Vedran Miletic, Marco Miozzo, Hemanth Narra, Natale Patriciello, Tommaso Pecorella, Josh Pelkey, Alina Quereilhac, Getachew Redieteab, Manuel Requena, Matias Richart, Lalith Suresh, Brian Swenson, Mohit Tahiliani, Cristiano Tapparello, Adrian S.W. Tam, Hajime Tazaki, Frederic Urbani, Mitch Watrous, Florian Westphal, and Dizhi Zhou. The full list of ns-3 authors is maintained in the [AUTHORS file](https://gitlab.com/nsnam/ns-3-dev/-/blob/master/AUTHORS) in the top-level source code directory, and full commit attributions can be found in the git commit logs.

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**New SIGCOMM members as ACM Fellows and ACM Distinguished Members**

At the ACM level, one SIGCOMM member was elevated to the rank of ACM Fellow this year: David Maltz. Other members of the community recognized as ACM Distinguished Members included Fan Bai, Eric W. Burger, Panagiotis Papadimitratos, and Anees Shaikh.

### Industry Liaison Board

The SIG’s industrial liaison board (ILB) was established several years ago with the goal of coming up with ideas and suggestions to increase industry participation at SIG-sponsored conferences. The ILB is currently chaired by Venkat Padmanabhan from Microsoft. The ILB has not been active in the reporting period. The new EC should consider revitalizing the ILB by appointing new members and leaders, or officially disbanding it.

Some of the activities the ILB supported during its active years included:

* **Student dinners** at in-person events (mostly SIGCOMM).
* **Industry Days** which had lukewarm responses and were hence put on hold some years ago. The Applied Networking Research Workshop (ANRW) collocated with IETF meetings has established itself as a successful venue for exchanges between part of the SIGCOMM community and the IETF community, which covers a significant part of the industry.
* **ILB structure**. The structure of the ILB has been formalized, with a size of 6 members, each serving a 3-year term. So 2 new members would join and 2 rotate out each year. However, shortly after this formalization, the ILB became inactive, and so the rotation has not occurred as planned.

### Diversity and Outreach

**N2Women partnership**. On August 10th, 2020 we held the second edition of the N2Women diversity workshop co-located with a SIG sponsored conference; this time organized as a virtual event that took place in conjunction with our main conference, SIGCOMM'20. The workshop, which contributes to increasing gender diversity, included talks and posters, of which the the best one and two runners-up were recognized with awards. We supported the workshop by providing free registration to the workshop and the main conference as well as prizes to best poster awards (free registration to the upcoming SIGCOMM'21 conference). The 11th N2Women workshop (the 3rd to be held in partnership with SIGCOMM) will again be held virtually on August 21st, 2021, with SIGCOMM'21. The upcoming workshop includes a keynote by Jennifer Rexford, a panel with senior members of the community, and mentoring sessions.

**CRA-WP support.** The CRA-WP Grad Cohort Workshop was originally designed to help foster greater participation by women graduate students in computing fields, but in 2020 it was changed to "Widening Participation (WP)" and split into two workshops, called CRA-WP Grad Cohort for Women, and CRA-WP Grad Cohort Workshop for Inclusion, Diversity, Equity, Accessibility, and Leadership Skills (IDEALS, formerly URMD). We continue to provide $15k in yearly support for both CRA-WP workshops. The support is used to allow students to attend these events. We also support attendance of the workshops by a couple of senior SIG members to represent the SIG. The workshops include a mix of formal presentations, informal discussions and social events. Participants can build mentoring relationships and develop peer networks that are intended to form a basis for ongoing activities during their graduate career and beyond. The IDEALS and CRA-WP workshops were held online in March and April because of the pandemics. The remote events included an app aimed at fostering participation. Several SIGCOMM members participated in both events as mentors.

**LANCOMM**. The second edition of LANCOMM was to be held again along with the SBRC symposium in May 2020. However, SBRC was rescheduled to take place in December 2020 because of the pandemic, and eventually was held virtually. Because the LANCOMM organizers felt that it would not be effective to the host the workshop virtually, the 2020 edition was cancelled. The community in Latin America was deeply affected by COVID-19, including the loss of one of the LANCOMM 2020 chairs. Once normality is reestablished and conferences can be held in person again, we anticipate resuming the organization of new editions of LANCOMM.

**Geo-diversity Travel Grants**. The SIG has been increasing the number and value of travel grants under the geo-diversity category. However, as already mentioned in this document, all the work associated with travel grants had to be suspended because the events sponsored or co-sponsored by the SIG were held virtually in 2020-2021. Travel grants, to the extent the name remains appropriate, were limited to waiving conference registration fees.

**Consistent Policies for SIG events**. Towards ensuring that all SIG events comply with properly displaying the ACM and SIG policies that attendees need to be made aware of, especially when it comes to issues related to discrimination, harassment, and privacy; something that was unevenly done before, the SIG created and distribted a document that summarizes those requirements and that is to be used by all SIG events.

**CARES Committee** (Committee to Aid REporting on discrimination and haraSsment policy violations). The SIGCOMM CARES committee was formally introduced in 2019. It is intended to help prevent and address any form of unacceptable behavior at events associated with the SIG, including providing support and guidance to individuals who may have been the victims of such violations. Its creation was in part in recognition of the fact that reporting discrimination and harassment to a person of authority, *e.g.,* conference chairs, SIG officers, or ACM staff, can be intimidating, especially in the face of an already traumatic experience. CARES committee members can serve as an alternative and are also intended as a source of advice on how to approach such a situation and ensure it is investigated by ACM. Committee members are available to listen and help anyone who has either experienced or witnessed discrimination and harassment at any event promoted by the SIG, or needs counseling on how to handle it. Committee members attended the four most important SIG-sponsored events, which this year were all held online: SIGCOMM, CoNEXT, IMC, and HotNets.

Around August 2020, the role of the committee was expanded to include any harassment-related issues that may arise as part of the paper publication process. Soon after, two complaints, both connected to the same case, were submitted in relation to an issue that arose during the 2020 HotNets Workshop review process. The case was further publicized through a number of related posts in online social networks. The case raised a number of issues on both best practices regarding paper reviews and the role of CARES itself in light of its expanded responsibilities. The resulting discussions, internal to CARES, led to a document with a set of recommendations[[3]](#footnote-3) aimed at community stakeholders, including PC chairs, Steering Committees, ACM and CARES itself. The CARES committee members who helped draft those recommendation were Sujata Banerjee - VMware, Marinho Barcellos (co-chair) - University of Waikato, NZ, Craig Partridge - Colorado State University, Jennifer Rexford - Princeton University, Justine Sherry - Carnegie Mellon University, and Ellen Zegura (co-chair) - Georgia Tech. At this time (July 2021), the terms of the current members are ending, and it is anticipated that the composition of the CARES committee will change in August 2021. It is also anticipated that the CARES committee will use this opportunity to put forward a formal rotation policy that will guide future term durations.

### Issues facing the SIG

The perennial issue of declining or stagnant membership persists, but as was mentioned during one of the community meetings at a recent SIGCOMM conference, membership numbers may be the wrong metric to focus on and we should instead focus on ensuring the continued relevance of the events we sponsor and exploring new ways of meeting the needs of our broader community, be they SIG members or not. As the continued success of our conferences attests, there is (still) a vibrant community associated with the technical activities we help organize, and it may be best to concentrate on how to make those events as accessible and productive as possible rather than focus on the somewhat artificial metric of success of membership.

In that regard, one of the important issues facing the SIG in the coming year is how to best transition the events it helps organize as we, hopefully, emerge from the COVID-19 pandemic. The SIG has committed to preserving a remote attendance option, but how to best realize this in an environment where in-person participation will most certainly also be available does not have a simple answer. The goal is to offer a meaningful experience to both in-person and remote participants, ideally with opportunities for interactions that transcend physical location, while acknowledging that differences are unavoidable. In addition to organizational challenges, the organization of such hybrid events also introduces financial challenges as it can make forecasting attendance more difficult, and this complicates planning for space, food, and beverages. There are, therefore, real risks for hybrid events to default to the lowest common denominator of in-person and virtual events, while creating higher financial risks than either type of events. Navigating those risks will require careful planning by the SIG as well as soliciting regular input from its community[[4]](#footnote-4) to avoid altogether missing the mark.

On the flip side, there is, however, no denying that a silver-lining of the pandemic has been to force us to experiment with virtual events, realize that much more was possible than had been anticipated, and triggered interest in developing options to further improve them. This has had a positive impact, not only when it comes to meeting sustainability goals, but also in facilitating attendance of those events by a more diverse audience. These positive factors are some of the reasons behind the SIG’s intent on preserving a remote attendance option in the events it supports. The pandemic has also had some negative impact on the SIG’s effort to improve diversity. Of note is the disruption it has created with the SIG’s effort to increase participation from South America and deciding when and how to resume those efforts (support of the LANCOMM student workshop) will be one of the challenges the SIG faces over the next year.

Finally, while the standing-up of the CARES committee represents a positive step when it comes to offering resources to members of the SIGCOMM community who may have experienced discrimination or harassment, this remains work in progress. The committee’s mandate has been continuously evolving as ACM has expanded the scope of topics it would oversee, and those changes have revealed a need for better communicating to SIG members both the scope and limitations in what the CARES committee can do.

**SIGCSE Annual Report**

**July 2020 - June 2021**

**Submitted by: Adrienne Decker, Chair**

The scope of SIGCSE is to provide a global forum for educators to discuss research and practice related to the learning, and teaching of computing, the development, implementation, and evaluation of computing programs, curricula, and courses at all education levels, as well as broad participation, educational technology, instructional spaces, and other elements of teaching and pedagogy related to computing.

1. Health and Viability of the SIG

SIGCSE is a reasonably healthy SIG. Our membership for this annual report is down slightly from the previous year, mainly due to the cancellation of the SIGCSE Technical Symposium in 2020, which coincides with many membership renewals. Attendance at conferences while slightly lower than pre-pandemic levels has held steady for this year. We have had large responses to our special projects awards program. We have created two new steering committees during this annual reporting period. One for ICER and one for the SIGCSE Technical Symposium. We were able to recruit and fill the positions for both steering committees with ease, so we feel that we have a fairly strong base of volunteers. We have charged the steering committees for all of our conferences to work on plans for growing our volunteer base for running our events to ensure that we have newer members being recruited and trained to take on larger responsibilities for the SIG.

2. Efforts related to Diversity, Equity and Inclusion

The newly-established ACM Global Computing Education Conference (CompEd) will be offered initially once every two years and will be hosted in countries that do not currently have an annual SIGCSE conference. The second conference (CompEd 2021) was scheduled to be held in Hyderabad, India in December 2021, but has been postponed due to the Covid-19 pandemic. The organizers and steering committee feel that this event, drawing people from communities not normally served by a SIGCSE conference should be held as an in-person event and are going to do so when it is determined feasible. The CompEd steering committee is actively seeking out venues in South America for the third CompEd conference.

In June 2020, the SIGCSE Board called for volunteers to form a SIGCSE Committee on diversity, equity, inclusion, and anti-racism to help better guide the SIGCSE community in these efforts. Leadership for this group had been identified and sessions were held with the community at the SIGCSE Technical Symposium, but as of the filing of this report, the official charter for a committee had not yet been filed with the board. The board also met with another group interested in helping to promote more inclusion of faculty at HBCU institutions at our events. We are working with them to find organize events and activities for members of that community.

3. Awards

The 2021 SIGCSE Award for Outstanding Contribution to Computer Science Education was presented to Stephen A. Edwards from Virginia Tech in the United States. His work focuses on development of automatic grading tools, particularly Web-CAT, which is an automatic grading tool for computer programs that has been used by over 90 institutions worldwide. He has a 2004 SIGCSE Technical Symposium paper that was given the honor of one of the Top 10 Symposium Papers of all Time in 2019. He is an ACM Distinguished Educator and has chaired the SIGCSE Technical Symposium in 2017.

The 2021 SIGCSE Award for Lifetime Service to the Computer Science Education Community was given to Cary Laxer from Rose-Hulman Institute of Technology in the United States. Cary’s contribution to the community has been one of service to the conferences of SIGCSE. He was program co-chair of the SIGCSE Technical Symposium in 1993 and general co-chair in 1995. He has been the long-standing face behind the registration desk of the SIGCSE Technical Symposium since 1996. He also has been registrar and treasurer of the ITiCSE conference. He has also worked with ABET, becoming Commissioner Chair in 2020-2021.

The 2021 SIGCSE Test of Time award was awarded to was " The Incredible Shrinking Pipeline," authored by Tracy Camp. The paper was originally printed in Communications of the ACM in 1997. This paper was the first article devoted to exploring and analyzing data related to women’s participation in computing and revealed just how many women the field of computing had lost from 1980 to 1994. It is the most cited paper about gender issues in undergraduate computing.

4. Significant papers on new areas that were published in proceedings

The 2020 ACM International Computing Education Research Conference (ICER 2020) had two best paper awards, and an honorable mention.

The Best Reviewed Paper Award was given to two papers who had the maximum possible overall score from reviewers and strong positive recommendations from their meta-reviewers. The papers were: “Exploring Student Behavior Using the TIPP&SEE Learning Strategy”, authored by Diana Franklin, Jean Salac, Zachary Crenshaw, Saranya Turimella, Zipporah Klain, Marco Anaya (University of Chicago), Cathy Thomas (Texas State University) and “What Do We Think We Think We Are Doing?: Metacognition and Self-Regulation in Programming”, authored by James Prather (Abilene Christian University), Brett A. Becker (University College Dublin), Michelle Craig (University of Toronto), Paul Denny (University of Auckland), Dastyni Loksa (University of Washington), Lauren Margulieux (Georgia State University). Special mention was given to: “Exploring the Enacted Computing Curriculum in K-12 Schools in South Asia: Bangladesh, Nepal, Pakistan, and Sri Lanka”, authored by Tehreem Anwar, Arturo Jimenez, Arsalan Bin Najeeb, Bishakha Upadhyaya (Knox College), Monica M. McGill (Knox College & CSEdResearch.org)for its call to action on the scope of international research.

The John Henry Award is selected by the conference attendees and was presented to “Hedy: A Gradual Language for Programming Education”, authored by Felienne Hermans (Leiden University)

In 2021 the SIGCSE Technical Symposium gave best paper awards for three different categories of papers. In each category the top three papers were identified.

In the Experience Report and Tools category the Best paper was: “How a Remote Video Game Coding Camp Improved Autistic College Students' Self-Efficacy in Communication” by Andrew Begel, Microsoft Research; James Dominic, Clemson University; Conner Phillis, KeyMark, Inc.; Thomas Beeson, Clemson University; Paige Rodeghero, Clemson University. The Second Best paper was “Inside the Mind of a CS Undergraduate TA: A Firsthand Account of Undergraduate Peer Tutoring in Computer Labs” by Julia M. Markel, UC San Diego; Philip J. Guo, UC San Diego. The Third Best paper was “Understanding Immersive Research Experiences that Build Community, Equity, and Inclusion” by Audrey Rorrer, UNC Charlotte; Breauna Spencer, University of California, Irvine; Sloan Davis, Google; Sepi Hejazi Moghadam, Google; Deborah Holmes, UNC Charlotte; Cori Grainger, Google.

In the Position Papers and Curricula Initiatives category the Best paper was “Creating a Multifarious Cyber Science Major” by Raymond W. Blaine, U.S. Military Academy; Jean R. S. Blair, U.S. Military Academy; Christa M. Chewar, U.S. Military Academy; Rob Harrison, U.S. Military Academy; James J. Raftery, U.S. Military Academy; Edward Sobiesk, U.S. Military Academy. The Second Best paper was “Confronting Inequities in Computer Science Education:A Case for Critical Theory by Aleata Hubbard Cheuoua, WestEd. The Third Best paper was “Developing an Interdisciplinary Data Science Program” by Mariam Salloum, University of California, Riverside; Daniel Jeske, University of California, Riverside; Wenxiu Ma, University of California, Riverside; Vagelis Papalexakis, University of California, Riverside; Christian Shelton, University of California, Riverside; Vassilis Tsotras, University of California, Riverside; Shuheng Zhou, University of California, Riverside.

In CS Education Research category the best paper was “Real Talk: Saturated Sites of Violence in CS Education” by Yolanda A. Rankin, Florida State University; Jakita O. Thomas, Auburn University; Sheena Erete, DePaul University. The Second Best paper was “Investigating the Impact of the COVID-19 Pandemic on Computing Students' Sense of Belonging” by Catherine Mooney, University College Dublin; Brett A. Becker, University College Dublin. The Third Best paper was “Superficial Code-guise: Investigating the Impact of Surface Feature Changes on Students' Programming Question Scores” by Max Fowler, University of Illinois at Urbana-Champaign; Craig Zilles, University of Illinois at Urbana-Champaign.

The Best Paper of ITiCSE 2021 was “ `It’s a bit weird, but it’s ok’? How female Computer Science students navigate being a minority” by Emily Winter, Lisa Thomas and Lynne Blair, with Honorable Mention given to: “Teaching testing with modern technology stacks in undergraduate software engineering courses” by Scott Chow, Tanay Komarlu and Phillip Conrad.

5. Describe conference activity

SIGCSE Sponsored 3 conferences in this reporting year:

ICER 2020, held virtually, was originally scheduled in Dunedin, New Zealand. August 8-13, 2020. Attendance: 319

SIGCSE Technical Symposium 2021, held virtually, was originally scheduled in Toronto, Canada. March 13-20, 2021. Attendance: 1756.

ITiCSE 2021, held virtually, was originally scheduled in Paderborn, Germany. June 26-27, 2021 (working groups), Main conference June 28-July 1, 2021. Attendance numbers are not final, but there were over 250 attendees registered for the event.

6. Comment on special projects and non-conference programs that provided service to some part of your technical community

The SIGCSE Special Projects Fund provides grants up to $5000 per project and has a call for proposals in November and May of each year.

The November 2020 call resulted in 30 applications of which three were funded for an acceptance rate of 10%. Sue Sentance and Hayley Leonard from the Raspberry Pi Foundation, Cambridge, UK were awarded $5,000 for a project titled "Developing criteria for K-12 learning resources in computer science that challenge stereotypes and promote diversity." Michael Lodi, Marco Sbaraglia and Simone Martini from Alma Mater Studiorum - Università di Bologna, Bologna, Italy were awarded $4,800 for a project titled "Big Ideas of Cryptography." Rita Garcia from University of Adelaide, Adelaide, Australia was awarded $3,006 for a project titled "Student communication during group projects: Reporting on gender bias language."

The May 2021 call resulted in 37 applications of which four were funded for an acceptance rate of 11%. Monica McGill from CSEdResearch.org and Michelle Friend from University of Nebraska Omaha, USA, were awarded $4,500 for a project titled "Solve this! Problems of practice teachers face in K-12 CS Education." Francisco Castro, Earl W. Huff Jr., Gayithri Jayathirtha, Yerika Jimenez, Minji Kong, Natalie Araujo Melo, Amber Solomon, and Jennifer Tsan from University of Massachusetts Amherst, USA were awarded $4,098 for a project titled "Telling Our Narratives: Expanding Equity Within Computing Education." Nasser Giacaman, University of Auckland, New Zealand was awarded $4,960 for a project titled "Git Utilities for Instructors and Education Researchers." Evelyn Zayas from Rasmussen University, Melbourne, Florida, USA was awarded $3,360 for a project titled "Develop Kahoot Interactive Lessons for AP CS Principles."

ITiCSE 2021 had five working groups on the following topics: (1) Post-COVID Educational Landscapes, (2) Towards a Curricula Framework to Support the Design of eSports Courses in Higher Education, (3) Chronicling the Evidence for Broadening Participation, (4) Exploring and Assessing Practical Computing Competencies, (5) Planning a Conceptual Framework Approach for Teaching Cloud Fundamentals. The participants in the working groups develop a research project that culminates in a peer-reviewed paper. The projects foster international research collaborations.

Every other year the SIGCSE Board runs a workshop for department chairs. The SIGCSE Department Chairs Roundtable features small group discussions on challenges of being a Department Chair and finishes with a panel of diverse and experienced Department Chairs. The group discussions tackle topics such as the significant administrative and personnel issues that chairs must handle; leadership and management styles, time management, legal issues, establishing priorities, and communication. The Department Chairs Roundtable took place on March 12 and March 13 for 3 hours each day as an event held before the 2021 Technical Symposium. The workshop was organized by Ran Libeskind-Hadas (Harvey Mudd College) and Cynthia Lester (Georgia State University).

On alternate years the SIGCSE Board runs a workshop for graduate students and new academics. The next New Educator’s Workshop will be held in Providence, Rhode Island, USA in February 2022.

SIGCSE has a Travel Grant Program for faculty and teachers who have never attended the SIGCSE Technical Symposium. Due to the online nature of the Technical Symposium in 2021, the board suspended this program. Those awarded travel grants in 2020 and not able to use them will be allowed to use them in 2022. The program is expected to resume in 2022.

There were two doctoral consortia associated with SIGCSE conferences during this year.

A doctoral consortium ran virtually just prior to the 2020 The International Computing Education Research Conference (ICER). The students presented their work to the discussants and engaged in discussion about various topics with regard to graduate school, research, and careers. The doctoral consortium was attended by 18 graduate students in computer science education. 11 of the participants were women, 5 were men, and 2 participants did not disclose their gender. 8 participants were from the United States, 2 from Canada, 4 from Europe, 1 from Africa, 2 from New Zealand, and 1 from Australia. SIGCSE typically provides travel grants to the students and partial funding for lodging during the workshop and also during ICER 2020. However, since the conference was virtual, travel support was not needed. Students instead only received free registration for the conferences. The SIGCSE Board will continue to fund up to twenty Doctoral Consortium grants for participants of the ICER conference in 2021.

There was also a doctoral consortium virtually associated with ITiCSE 2021. 11 students attended the event, which was supported ACM Europe. The doctoral consortium was organized by Neena Thota, (University of Massachusetts Amherst, USA) and Andreas Mühling, (Christian-Albrechts-Universität zu Kiel, Germany)and focused on nurturing students’ research and orienting them in the ITiCSE community.

7. Key Issues for the Next 2-3 Years

The main challenge is the adaptation of conferences from strictly in-person events to hybrid or fully online events. For 2021, all of our conferences were scheduled to be online only events. The challenge for these events is to make them as valuable to the community in terms of engagement as in-person events. These types of events also present an opportunity to engage those who were previously unable to attend in-person events for various reasons with the community. For 2022, we polled the SIGCSE community and the overwhelming response was that the community wanted to return to in-person events while still allowing those unable to travel to participate. As such, we have asked all conferences for 2022 to develop a plan to allow forms of virtual participation together with the in-person event. Each conference will develop their own plan for “hybrid” and we look forward to piloting new ideas. However, the challenges of the logistics of hybrid events still exist and will continue to exist for years to come. However, as of the end of this year, all four of SIGCSE’s conference have steering committees to help guide and shape the direction of the conferences.

**SIGDA Annual Report**

**July 2020 - June 2021**

**Submitted by: SIGDA Executive Committee Members**

SIGDA has been a vibrant special interest group which sponsors and organizes multiple activities benefiting the design and design automation community. Due to the outbreak of coronavirus (COVID-19), this past year has presented special challenges but also some good opportunities for hosting virtual events and outreach. Below are the highlights of the activities for the reporting period.

* **Comment on the ways in which the SIG is a healthy and viable organization**
* **Describe your efforts related to Diversity, Equity, and Inclusion.**
* **Provide a list of awards and recipients**
* **List significant papers on new areas that were published in proceedings**
* **Describe conference activity**
* **Comment on special projects and non-conference programs that provided service to some part of your technical community**
* **A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.**

**EFFORTS RELATED TO DIVERSITY, EQUITY, AND INCLUSION**

SIGDA is committed to advancing diversity and broadening the participation of professionals from under-represented groups within the design and design automation community. SIGDA has set aside funds specifically for diversity related efforts. The fund is managed by the SIGDA Diversity Committee (currently with 11 members spreading across North and Asia, Europe and South America, and chaired by Evangeline Young, Chinese University of Hong Kong). Unfortunately, due to COVID, the committee has cancelled planned diversity related activities.

Recognizing the importance of diversity and ethics, SIGDA EC has approved

the addition of a new position, i.e., SIGDA Diversity and Ethics Chair. The duties of Diversity and Ethics Chair include the following:

* Disseminate ACM policies to SIGDA sponsored conferences and SIGDA related ACM journals
* Consult and work with ACM SIGDA sponsored conferences on issues related to diversity and ethics
* Help develop new ethics and diversity policies collected from ACM sponsored conferences
* Help enforce penalties determined by ACM COPE (Committee On Professional

Ethics)

An open call for nomination of the Diversity and Ethics Chair was closed on June 25th, 2021. The new SIGDA EC is in the process of vetting the nominations.

**AWARDS**

SIGDA gave out two major research related awards in this reporting period. SIGDA Pioneer Achievement Award:

To honor a person for lifetime, outstanding contributions within the scope of electronic design automation, as evidenced by ideas pioneered in publications, industrial products, or other relevant contributions. The award is based on the impact of the contributions throughout the nominee’s lifetime.

The SIGDA 2021 Pioneering Achievement Award winner is Professor Jacob A. Abraham, UT Austin, *for pioneering and fundamental contributions to manufacturing testing and fault-tolerant operation of computing systems..*

A. Richard Newton Technical Impact Award in Electronic Design Automation

To honor a person or persons for an outstanding technical contribution within the scope of electronic design automation, as evidenced by a paper published at least ten years before the presentation of the award. This award is jointly sponsored by ACM SIGDA and IEEE CEDA.

The ACM/IEEE A. Richard Newton Technical Impact Award in Electronic Design Automation in 2020 goes to J. Waicukauski, E. Lindbloom, B. Rosen and V. Iyengar for their paper “Transition Fault Simulation,” *IEEE Design & Test of Computers,* Volume: 4, Issue: 2, pp. 32-38, April 1987.

SIGDA gave out two awards targeting junior researchers in this reporting period. ACM Outstanding Ph.D. Dissertation Award in Electronic Design Automation

This award is given to an outstanding Ph.D. dissertation that makes the most substantial

contribution to the theory and/or application in the field of electronic design automation.

The winner of the 2021 ACM Outstanding Ph.D. Dissertation Award in Electronic Design Automation is Ahmedullah Aziz, for his dissertation “Device-Circuit Co- Design Employing Phase Transition Materials for Low power Electronics”, Purdue University, Advisor: Sumeet Gupta.

SIGDA Outstanding New Faculty Award

This award recognizes a junior faculty member early in her or his academic career who demonstrates outstanding potential as an educator and/or researcher in the field of electronic design automation.

The SIGDA Outstanding New Faculty Award in 2021 goes to Zheng Zhang, University of California, Santa Barbara.

SIGDA gave out two service-related awards in this reporting period.

Distinguished Service Award

This award is given to individuals who have dedicated many years of their career in extraordinary services to promoting, leading, or creating ACM/SIGDA programs or events.

The 2020 SIGDA Distinguished Service Award recipients are

* + Deming Chen, University of Illinois Urbana-Champaign, *for distinguished contributions to the design automation and reconfigurable computing communities, and*
  + Evangeline F. Y. Young, Chinese University of Hong Kong, *for outstanding leadership in promoting diversity in the ACM/SIGDA community*.

Meritorious Service Award

This award is given to individuals who have performed professional services above and beyond traditional service to promoting, leading, or creating ACM/SIGDA programs or events.

The 2021 SIGDA Service Award goes to Bei Yu, Chinese University of Hong Kong, *for service as SIGDA Web Chair from 2016 to 2021, SIGDA Student Research Competition Chair in 2018 and 2019, and other SIGDA activities*.

**SIGNIFICANT PAPERS**

The paper below received the 2021 ACM TODAES Best Paper Award. The paper significantly advances the area of system-on-chip verification.

Sumit K. Mandal, Ganapati Bhat, Janardhan Rao Doppa, Partha Pratim Pande, Umit

Y. Ogras, “An Energy-Aware Online Learning Framework for Resource Management in Heterogeneous Platforms,” ACM Transactions on Design Automation of Electronic Systems, Volume 25, Issue 3, May 2020, Article No.: 28, pp 1–26.

**INNOVATIVE PROGRAMS**

SIGDA devoted significant efforts to improve diversity and industry relations. Furthermore, in response to the COVID-19 situation, SIGDA, in collaboration with IEEE CEDA, initiated a new virtual seminar series. These activities are summarized below.

**Industry Collaboration**

The industrial advisory board (IAB) of SIGDA had several discussions about how the IAB contributed to the SIGDA community in general. The IAB generally agrees to

improve the presence of industrial experts in SIGDA’s education and technical activities and provide necessary support and guidance to the organization of these activities.

**Design Automation WebiNar (DAWN)**

Design Automation WebiNar (DAWN) has organized three webinars in August, September, and December 2020. The topics cover hardware security, manuscript publishing, and quantum computing. More details about DAWN can be found at: [www.eda-dawn.org.](http://www.eda-dawn.org/)

**Mini Workshop on Holding Virtual Conferences**

SIGDA held virtually (typically taking place at ICCAD as an in-person meeting) the annual conference representative meeting on June 16th. 2020 for SIGDA-sponsored conferences. The meeting was organized as a mini workshop. The particular focus of this mini workshop was to support conferences with their plans to go virtual. Since there was not much experience available, this event was planned as a platform to exchange ideas and experiences with various virtual formats. During the workshop, conferences that already had their events virtually shared their experience while others presented their virtual plans. It became clear that there is no solution that fits all, mainly because the size of each event is quite different. The feedback we received indicates that this meeting was a helpful first step and platform for exchanging ideas/experience to plan and conduct virtual events. This year’s ConfRepMeeting will be organized by the new SIGDA Conference Chair.

**Nominating papers to Communications of ACM (CACM)**

SIGDA EC has developed a procedure to nominate one paper each year (starting in 2021) to be considered as a Research Highlight candidate paper in CACM. The goal is to select a high-quality paper with more general appeal to help promote research in the design automation field.

**OUTREACH ACTIVITIES**

Because the flagship conference of SIGDA, Design Automation Conference (DAC) is postponed to December, all SIGDA sponsored activities at DAC including Ph.D. Forum, Design Automation Summer School, University Demo, Early Career Workshop and Richard Newton Fellowship are delayed. The Cadathlon at International Conference of Computer-Aided Design (ICCAD) was cancelled last year due to the pandemic; however the ACM Student Research Competition (SRC) was held. A total of 32 students (6 undergraduate and 26 graduate students) participated in it, and the top three from each category advanced to the ACM Grand Finals. The Ph.D. Forum at Design, Automation, Test in Europe Conference received a total of 39 submissions out of which 24 contributions were accepted based on 146 reviews from 18 PC members. The Student Research Forum (SRF) at Asia and South Pacific Design Automation Conference (ASPDAC) 2021 accepted 28 participating students from Asia, Europe and North America (doubled compared to 2020) and there were over 110 participants from all the continents (more industry experts were able to join the forum due to the easier virtual format).

Besides the above activities, SIGDA communicates using SIGDA E-News.

**KEY ISSUES FACING SIGDA**

* The transition to virtual formats for conferences during COVID, opens new opportunities and challenges that need to be pursued. The transition to virtual format for exhibits remains a challenge and has the potential to be a significant financial stress on SIGDA, if virtual format continues.
* The impact of co-location of the Design Automation Conference with SEMICON West, which was delayed due to COVID, needs to be evaluated. With proper attention, this has the potential to enhance the reach of SIGDA even further.
* SIGDA will need to continue investing in new topics and in geographically diverse locations as membership growth increases outside the US.
* There was significant discussion on the award eligibility criteria triggered by the Turing award announcement resulting in the creation of the Diversity and Ethics Chair position. SIGDA needs to ensure that the position indeed addresses the ethics

related concerns and make adjustments if needed.

**SIGDOC FY ’21 Annual Report**

**July 2020 – June 2021**

**Submitted by: Daniel P. Richards, Chair**

**Overview**

The ACM Special Interest Group for Design of Communication (SIGDOC) provides a forum for researchers and practitioners of the design of communication, including but not limited to those doing work in information architecture, information design, content management, user experience, user documentation (traditional and user-contributed), as well as governmental, scientific, and public participatory contexts. SIGDOC’s overall mission is to: advance the state of knowledge; encourage the research; and support the interdisciplinary practice of the design of communication.

**Health and Viability of SIGDOC**

SIGDOC remains a consistently healthy organization, holding steady at around 200 members. Most of our members attend and participate actively in our yearly conference. For example, 158 of our 197 members registered for our virtual event last October 2020. The numbers for this year’s October conference—again a virtual one—are higher so far in terms of submissions. Since our membership is so intimately tied to conference registration, we hope to have a slight uptick in membership for 2021. In terms of finances, SIGDOC continues to rest upon a significant surplus.

The current SIGDOC Executive Committee (EC) has agreed to stay on for a second two-year term (2021-2023), which means the chair, vice chair, secretary-treasurer, publication editor, and past chair will have been in leadership for a total of 4 years when the second terms end. This consistency has been good for the organization, given that there was a bit of a quick turnover from the past couple chairs. The consistency has allowed for the EC to revise bylaws to reflect current best practices and develop more robust documentation to aid in onboarding more easily volunteers for conferences. The revision of our bylaws (to be submitted by the end of 2021) reflects SIGDOC’s commitment to equity and diversity and a vision towards building in more technical committees to extend its reach into other corners of industry.

Our main publication, *Communication Design Quarterly (CDQ)*, has continued to evolve into one of the more reputable publications in the field of technical communication, in no small part due to its commitment to publishing and reviewing in more equitable ways. As *CDQ* approaches its 10th volume in 2022, we expect submission numbers to continue to increase.

**Diversity, Equity, and Inclusion**

There were two steps taken this year by the EC to further promote in both philosophical and practical ways diversity, equity, and inclusion.

The first step was the decision by the EC as a group and the individual members therein to sign the “Anti-Racist Scholarly Reviewing Practices: A Heuristic for Editors, Reviewers, and Authors.”[[5]](#footnote-5) This living document was composed by a diverse group of major scholars in the field of technical communication and co-signed by nearly all members of the field in significant editorial positions. The open, public document itself gives explicit guidance on how to engage in anti-racist review practices, guided by the question: “How might we dismantle the existing exclusionary and oppressive philosophies and practices of reviewing in the field of technical and professional communication and replace them with philosophies and practices that are explicitly anti-racist and inclusive?” The SIGDOC EC unequivocally supports this heuristic and is working on integrating its content into our own review practices pertaining to our publications and conference submission systems.

The second step was to allot for 2021 our new annual budgetary line item ($2000) dedicated to inclusion to pay a group of scholars in the field to conduct an audit of our organizational documentation through the lens of inclusion, equity, and diversity. This group was granted full access to the internal workings of SIDGOC and spent the summer evaluating our organization and composing a recommendation report for actions SIGDOC can take moving forward to improve its commitment to inclusion. The report, titled “SIGDOC Anti-Racist and Inclusion Consulting Recommendation Report” was submitted by Dr. Genevieve Garcia de Mueller, Dr. Donnie J. Sackey and Dr. Natasha N. Jones on June 30, 2021. The recommendations fell into two categories and were outlined as such:

1. Recommendation 1: Survey of SIGDOC Membership: “We recommend that SIGDOC Executive Committee survey members in order to find out how the members experience SIGDOC (as an organization) and also in order to identify possible opportunities for SIGDOC to build and expand on anti-racist and inclusive organization practices that are already in place.”
2. Recommendation 2: Revision of Bylaws: “We reviewed the SIGDOC Bylaws in order to identify opportunities for integrating anti-racist and inclusive practices into the processes, procedures, and operations of the organization [and] we found that the bylaws are quite vague and that leadership interpretation of the bylaws in the future could potentially present problems and leave room for resistance to (or even refusal to) consider issues of racial equity, justice, accessibility, and inclusivity.” To remedy the vagueness, the group recommended that we:
   1. Revise our organizational purpose.
   2. Expand the newly designated board position of Access Chair.
   3. Include demographic information in yearly reports.
   4. Emphasize diversity in our elections.

We plan on implementing each recommendation. Further, and more immediately to honor recommendation 2c, we include the follow demographic information of our latest membership report, contextualized against the entire ACM membership demographics:

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*Figure 1: Gender identification by all of ACM members (top) and SIGDOC (bottom). “None” means no response was given.*

Table

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*Figure 2: Racial and ethnic identification by all of ACM members (top) and SIGDOC (bottom). “None” means no response was given.*

Table

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*Figure 3: Disability identification by all of ACM members (bottom) and SIGDOC (top). “None” means no response was given.*

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*Figure 4: Professional identification by all of ACM members (bottom) and SIGDOC (top). “None” means no response was given.*

Table

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*Figure 5: Age identification by all of ACM members (bottom) and SIGDOC (top). “None” means no response was given.*

We will continue to include demographic information from our yearly membership reports into our annual reports to the purpose of transparency and data-supported organizational action.

**Awards and Recipients**

The following awards and recognitions were given over the past year:

1. **Career Advancement Research Grants**:
   1. “Exploring Risk and Crisis Communication Practices of Transnational Feminists in Ensuring Equity and Justice During COVID-19” — Sweta Baniya, Ph.D, Virginia Tech
   2. “Queer Becomings: The Ethics, Rhetoric, and Materiality of Care in Trans Networks” — Avery Edenfield, Ph.D, Utah State University
2. **Best Paper** (in conference proceedings):
   1. **2020 Best Paper Award** goes to “Migrants as Place-Makers: The Role of Technical Communicators in (re)Locating Place” by Gabriel Lorenzo Aguilar
   2. **2020 Honorable Mention** in the Best Paper Award goes to “Preparing Future UX Professionals: Skills, Dispositions, and Competencies” by Emma Rose (University of Washington – Tacoma), Cynthia Putnam (DePaul University), and Craig M. McDonald (Pratt Institute).
3. **Diana Award**, given to an organization, institution, or business for their long-term contribution to the field of communication design: Writing, Information, and Digital Experience (WIDE) Lab at MSU
4. **Student Research Competitions** (from 2020 Conference), see Table 1:

|  |  |  |
| --- | --- | --- |
| *Graduate Division* | | |
| **Name** | **Affiliation** | **Title** |
| (1st) Danielle Stambler | University of Minnesota | “Eating Right” and User Experience with an Employee Wellness Program |
| (2nd) Sarah Fadem | Rutgers University | Designing a Decision Aid for Patients Considering Bone Marrow Transplant |
| (3rd) Nicole Lowman | SUNY University at Buffalo | Advising the Buffalo Police Advisory Board: Toward a More Usable Technology |
| *Undergraduate Division* | | |
| **Name** | **Affiliation** | **Title** |
| (1st) Sanjana Ponnada | Arizona State University | Improving user experience and accessibility of CDC’s COVID-19 symptoms self-checker with better design practices |
| (2nd) Rita Flanagan | University of Pittsburgh | Principles of Technical and Public Communication as a Provisional Framework for Undergraduate Researchers Writing with and About Indigenous Peoples |
| (3rd) Kenyan Burnham, Adam Narine, Christopher Trotter | Texas Tech, Ontario Technical University, University of Minnesota | Instructor Roles in Higher Education During the COVID-19 Pandemic |

*Table 1: Microsoft Student Research Competition Award winners.*

We plan on given the same awards next year, save for the switching to the Rigo Award (alternating years for Diana and Rigo Awards).

**Significant Proceedings Papers**

Some significant proceedings papers, based on clicks, downloads, and citations, are as follows:

* Quan Zhou. 2020. Building Design Thinking into Content Strategy. In Proceedings of the 38th ACM International Conference on Design of Communication (SIGDOC ‘20). Association for Computing Machinery, New York, NY, USA, Article 3, 1–5. DOI:https://doi.org/10.1145/3380851.3416738
* Jenya Edelberg and Joseph Kilrain. 2020. Design Systems: Consistency, Efficiency &amp; Collaboration in Creating Digital Products. In Proceedings of the 38th ACM International Conference on Design of Communication (SIGDOC ‘20). Association for Computing Machinery, New York, NY, USA, Article 8, 1–3. DOI:https://doi.org/10.1145/3380851.3416743
* Jessica Lynn Campbell. 2020. A Mixed-methods Approach to Evaluating the Usability of Telemedicine Communications. In Proceedings of the 38th ACM International Conference on Design of Communication (SIGDOC ‘20). Association for Computing Machinery, New York, NY, USA, Article 20, 1–6. DOI:https://doi.org/10.1145/3380851.3416755
* Michael Meng, Stephanie M. Steinhardt, and Andreas Schubert. 2020. Optimizing API Documentation: Some Guidelines and Effects. In Proceedings of the 38th ACM International Conference on Design of Communication (SIGDOC ‘20). Association for Computing Machinery, New York, NY, USA, Article 24, 1–11. DOI:https://doi.org/10.1145/3380851.3416759
* Claire Lauer and Shaun O'Brien. 2020. The Deceptive Potential of Common Design Tactics Used in Data Visualizations. In Proceedings of the 38th ACM International Conference on Design of Communication (SIGDOC ‘20). Association for Computing Machinery, New York, NY, USA, Article 27, 1–9. DOI:https://doi.org/10.1145/3380851.3416762
* Alison Cardinal, Laura Gonzales, and Emma J. Rose. 2020. Language as Participation: Multilingual User Experience Design. In Proceedings of the 38th ACM International Conference on Design of Communication (SIGDOC ‘20). Association for Computing Machinery, New York, NY, USA, Article 28, 1–7. DOI:https://doi.org/10.1145/3380851.3416763

These pieces also do a good job at representing the various areas of expertise of our members.

**Conference Activity**

Our flagship conference is our annual SIGDOC conference, which typically takes place in the summer or fall of each year. The SIGDOC 2020 conference took place in October (5th through 9th) virtually and was originally scheduled to be held at the University of North Texas in Denton, TX, USA.

The theme was “A New Decade of Technology and Design,” which invited scholars, practitioners, and teachers to consider looking forward to the possibilities and pitfalls of new academic and industry practices, technologies, audiences, and contexts. The conference committee included:

* Conference Chair: Stacey Pigg, North Carolina State University
* Local Conference Co-Chairs: Chris Lam (University of North Texas) & Autumn Hood (Sabre)
* Program Co-Chairs: Daniel Hocutt (University of Richmond) and Josephine Walwema (University of Washington)
* Student Research Competition Co-Chairs: Jason Swarts (NC State University) and Sonia Stephens (University of Central Florida)
* Sponsorship Chair: Jordan Frith, Clemson University
* Accessibility Chair: Sean Zdenek, University of Delaware
* Social Media Manager: Jason Tham, Texas Tech University
* Communications Manager: Luke Thominet, Florida International University
* Website Manager: Adam Strantz, Miami University (Ohio)
* Student Representative: Nupoor Ranade

We had 58 items that were peer reviewed and published in the proceedings, including 43 papers and panel abstracts and 15 poster abstracts as part of the Student Research Competition. The 58 items represent the highest number of peer reviewed pieces we have ever published in the proceedings. In all, we had 155 attendees registered for the conference (another record). We saw a robust engagement with graduate and undergraduate students who participated in our Microsoft Student Research Competition. At the conference, we included the following features:

* Keynote by: Women of Color in Computing Collaborative
* Live topical conversations on: Pandemic-Related Communication and Antiracist and Social Justice Activism
* Editors’ roundtable
* Workshops
* Ignite talks featuring industry practitioners in the great Dallas/Denton area

The research that our members are presenting at our conference continues to address salient issues and themes in the fields of communication design, user experience, and technical communication.

**Special Projects**

There are currently three special projects at various stages of development:

1. *History*. The EC applied for an ACM History Committee Fellowship but did not receive funding. We intend to reapply next year and continue to work towards making our history more visible to new members.
2. *Technical Committees*. We are currently in talks with the OASIS DITA Adoption Committee to facilitate a transition of their team from OASIS to SIGDOC. This would be our first official technical committee.
3. *Open Access Resources*. The SIGDOC Chair and some members are working towards a project titled DART (data repository), which would provide open access data from various publications in the field of technical communication.

**Key Issues for the Future**

We have identified the following issues and plans that will occupy our time over the next 2 years:

* *Virtual conferences*. SIGDOC 2021 will be our second virtual event and we are thinking through what it might mean to always offer a virtual attendance option. This also means thinking through how to balance accessibility budgets and the subsequent increase in registration costs.
* *Conference siting*. We will continue to work on formalizing our conference site selection framework.
* *Revise bylaws*. Our bylaws are out of date, and we wish to update them to reflect our current practices and values. These will be submitted in 2021.
* *Connecting to industry*. We are still committed to community partnerships through the development of a Community Liaison position on the board, whose responsibility would be to do outreach for community partners and solicit and program at least one community-driven panel. We also think investing more in Technical Committees can help connect to industry in substantial ways.

In addition to these new strategies, we will continue working with Women in Technical Communication and supporting the Microsoft Student Research Competition.

# 

**SIGEVO FY’21 Annual Report**

**July 2020 - June 2021**

**Submitted by: Franz Rothlauf, Chair since July 2019**

**EXECUTIVE BOARD**

Elections to the Executive Board have taken place this year, and one third of the board has been renewed. The following members had their term ending in 2021: Jürgen Branke, Emma Hart, Gabriela Ochoa, Wolfgang Banzhaf, Juan Merelo, Erik Goodman. Una-May O’Reilly chaired the nomination committee. The newly elected members are Jürgen Branke, Emma Hart, Gabriela Ochoa, Gisele L. Pappa, Bing Xue, and Andrew Sutton. The members of the current Executive Board is available on [SIGEVO web site](https://sig.sigevo.org/index.html/tiki-index.php?page=SIGEVO%20Executive%20Board).

# **Comments on the ways in which the SIG is a healthy and viable organization**

Currently, SIGEVO is doing well.

SIGEVO continues to be in good shape financially, with events not producing deficits. Our reserves are healthy, which will allow us to take the risk and running a hybrid GECCO in 2022. This year, SIGEVO gave out no student travel grants. A Call for innovative projects have been issued during GECCO closing session.

This year GECCO had a record-high number of partcipants with more than 930 attendees. We believe this is due to the higher inclusiveness of the online format of GECCO. Along with a high number of participants, we have a high number of SIGEVO members.

# **Describe your efforts related to Diversity, Equity, and Inclusion**

We are constantly working on increasing diversity, equity, and inclusion. For this years Executive Board elections, we nominated a high number of woman and 66% of the new board members are women (4 out of six). In addition, Emma Hart was elected as new treasurer. The woman-at-GECCO workshop (online this year) was a great success with many participants and interesting discussions.

As we run GECCO this year as a pure online event, we were able to increase the inclusiveness of GECCO. We had more submissions from underrepresented countries and this year for the first time the largest group of authors of accepted papers are from China. This would not been possible without offering an online participation to the conference.

# **Provide a list of awards and recipients**

# 2021 SIGEVO Impact Award

# Evolving a diversity of creatures through novelty search and local competition. Lehman, J., Stanley, K.O. GECCO'11, pp. 211-218.

# Exploratory landscape analysis. Mersmann, O., Bischl, B., Trautmann, H., Preuss, M., Weihs, C., Rudolph, G. GECCO'11, pp. 829-836.

# 2021 SIGEVO Dissertation Award

# Winner: ''Design and Application of Gene-pool Optimal Mixing Evolutionary Algorithms for Genetic Programming" by Marco Virgolin

# Honorable Mention: ''Methods for Tight Analysis of Population-based Evolutionary Algorithms" by Denis Antipov

# Honorable Mention: Accelerating Evolutionary Design Exploration with Predictive and Generative Models by Adam Gaier

# 2021 SIGEVO chair lecture

# Why AI is Harder Than We Think. Melanie Mitchell. Santa Fe Institute, USA.

GECCO awards:

Competitions:

* 13 competitions were held at GECCO-2021 with awards and prizes presented at the SIGEVO Annual Meeting.

Humies Awards:

* The most prominent competition at GECCO is the Humies Award for the best human-competitive application of Evolutionary Computation methods published in the last year. Strict criteria are applied for what work becomes eligible in the competition, and a panel of five independent judges is responsible for the selection of winners of $10,000 in cash prizes donated by Third Millennium Online Products Inc. Six were selected as finalists, and presented during GECCO. Three of them were awarded.

GECCO Best Paper Awards:

* were given in different categories. The same rules as before applied to the nominations (the minimum submission numbers for a best paper award are 20, with smaller tracks collaborating to select a best paper among their union set.

# **List significant papers on new areas that were published in proceedings**

# To identify significant papers on new areas is a difficult task as many breakthroughs only become viewed as breakthroughs a few years after they have been published. At GECCO 2021, a new track on neuroevolution was created. As best paper in this area the paper “Policy Gradient Assisted MAP-Elites” by Olle Nilsson and Antoine Cully was awarded.

# In the other tracks, the following papers were identified by the track chairs as most promising papers:

* Self-Adjusting Population Sizes for Non-Elitist Evolutionary Algorithms: Why Success Rates Matter (Mario Alejandro Hevia Fajardo, Dirk Sudholt)
* Biodiversity in Evolved Voxel-based Soft Robots (Eric Medvet, Federico Pigozzi, Alberto Bartoli, Marco Rochelli)
* Genetic Algorithm Niching by (Quasi-)Infinite Memory (Adrian Worring, Benjamin Eugen Mayer, Kay Hamacher)
* Greedy Approximated Hypervolume Subset Selection for Many-objective Optimization (Ke Shang, Hisao Ishibuchi, Weiyu Chen)
* A Novel Surrogate-assisted Evolutionary Algorithm Applied to Partition-based Ensemble Learning (Arkadiy Dushatskiy, Tanja Alderliesten, Peter A. N. Bosman)
* A Generalizability Measure for Program Synthesis with Genetic Programming (Dominik Sobania, Franz Rothlauf)
* Evolutionary Minimization of Traffic Congestion (Maximilian Böther, Leon Schiller, Philipp Fischbeck, Louise Molitor, Martin S. Krejca, Tobias Friedrich)

# **Describe conference activity**

# GECCO 2021 (July 2021)

* This was a pure online event located in Lille.
* Slightly lower submissions (362) than in previous years, perhaps due to large wave of COVID in February.
* Record number of participants: 944.
* LBA submissions was lower than previous year. Competition also had higher submissions, Workshops were pretty much the same.
* iThenticate was used for the first time. Very positive experience.
* Opening keynote ~280 attendees, poster sessions ~200 attendees, second keynote ~200 attendees, SIGEVO keynote ~337 attendees.
* Those who entered Gathertown liked it.
* ACM YouTube channel has a limit of 100 video uploads per day, but we had 441 videos in the GECCO 2021 playlist. Must realize that one must start early, or otherwise have ACM increase this limit.

GECCO 2022: to be planned on the East coast in the US. Planning on track, although last-minute changes of location due to Covid19.

**Comment on special projects and non-conference programs that provided service to some part of your technical community**

This year, all energy went into the transformation of GECCO towards a pure online event.

**A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.**

* What is a proper format of a hybrid conference?
* How can we increase sustainability and reduce our carbon footprint? This question is related to the future hybrid format. The plan is to aim for onsite participation for those researchers that have short travel times to the conference location; in exchange, researchers that have long travel distances should have the change to participate online. We believe that such a format also increases inclusiveness.

**SIGITE Annual Report**

**July 2020 - June 2021**

**Submitted by: Barry Lunt, Past Chair**

# Current Status – How we’re a healthy SIG

Most members renew their membership regularly. We have a core of over 50 members who attend nearly every yearly conference and contribute papers. Members contribute to the SIGITE listserve where quick responses by other members has been the norm, and those responses are very helpful.

# SIGITE Efforts related to Diversity, Equity and Inclusion

Our Chair and Past Chair have both been to training in these areas and are committed to see that the relevant ACM standards are upheld at all SIGITE meetings and conferences. Since our founding in 2004, we have had no problems of any kind in this area, and we are working to keep it this way.

# List of Awards and Recipients

SIGITE has no formally-approved awards, and thus no recipients.

# Significant Papers on new areas published in proceedings

The SIGITE 2020 conference had the following significant papers:

1. Deep Learning in the IT Curriculum; Amy K Hoover, Adam Spryszynski, Michael Halper; New Jersey Institute of Technology.
2. Hacking the Non-Technical Brain: Maximizing Retention in a Core Introductory IT Course; Eric M Sturzinger, Daniel S Hawthorne, Thomas A Babbitt; United States Military Academy.

# Conference activity

Past and Under Development Conferences

SIGITE continues to be financially stable and organizationally strong

* 245 members in fiscal year 2021-2020 (compared to 277 in the previous year). Membership communications include listserv, web site, newsletter, and an annual conference.
* Total members since the organization's inception in 2003 is 1719 members from 78 countries.

The 21st ACM SIGITE Annual Conference on IT Education took place virtually, October 7-9, 2020, and was hosted by the University of Nebraska Omaha. Participation and submissions, compared to previous year, were as follows:

* 235 attendees (vs. 153)
* 118 submissions (vs. 88).

The submissions were distributed as follows:

* Panels - 3
* Workshops – 5
* Big Idea Talks (Abstracts) - 5
* Teacher Experience Track (abstracts) - 4
* Posters (Abstracts) - 25
* Papers: 57 accepted from 85 paper submissions: 67% acceptance rate
* Overall acceptance rate based on total submissions: 54%

Any particular highlights of the conference? – The host University of Nebraska Omaha did an amazing job of turning this into a fully virtual conference, and it went much more smoothly than we would have expected. The number of attendees was the highest ever, and the online platforms used worked very well.

The 22nd ACM SIGITE 2021 Annual Conference on IT Education is co-hosted by Brigham Young University and Utah Valley University and will take place at the Snowbird Resort, October 6-9, 2022.

Submissions

* Papers: 18 accepted from 33 paper submissions: 55% acceptance rate
* There were 3 panels accepted, 3 workshops, and 13 big idea talks to be presented as posters.
* Total submissions: 52 (vs 118 in 2020), overall acceptance rate: 71% (v. 54% in 2020) **Future Plans – what’s coming up in the next 6-12 months? When is completion date?** Future Conferences

SIGITE conferences have been scheduled for:

* 2022 – Illinois Institute of Technology
* 2023 – not yet assigned

# Special Projects and non-conference programs

SIGITE has sponsored several research projects into the IT community, and plans to continue to support this type of research to strengthen the IT community. The reports on these projects have been very well received and have been very useful.

# Key Issues to deal with in the next 2-3 years

How can we still provide significant value in our annual conferences with the ongoing pandemic?

We will need to update the IT model curriculum by about 2027, which will be 10 years from the previous update and is only about 5+ years away.

Enrollment in IT programs, as is often the case, goes up and down; we need to find better ways to handle these up- and down-turns.

**SIGMETRICS FY’21 Annual Report**

**July 2020 – June 2021**

**Submitted by: Giuliano Casale, SIGMETRICS Chair**

ACM SIGMETRICS brings together researchers and practitioners in the area of performance evaluation of computer systems and networks. The SIG promotes research in performance analysis techniques as well as the advanced and innovative use of known methods and tools to understand and improve performance and quality of service, seeking a balance between theoretical and practical issues.

SIGMETRICS concluded a very active and exciting year, which featured several activities to meet the needs of its membership. Some of the highlights for the year were as follows.

# Awards:

The SIGMETRICS Achievement Award was awarded to Prof. R. Srikant of University of Illinois at Urbana-Champaign (UIUC) in recognition of outstanding contributions towards unifying optimization, control and stochastic networks for the design and analysis of computer systems and communication networks.

The SIGMETRICS Rising Star Research Award was awarded to Dr. Zhenhua Liu of Stony Brook University for fundamental research on managing complex distributed systems with limited information and network constraints.

The SIGMETRICS Test of Time Award was presented to Zhenhua Liu, Minghong Lin, Adam Wierman, Steven Low, and Lachlan L.H. Andrew for their work ["Greening](https://dl.acm.org/doi/pdf/10.1145/2007116.2007139) [Geographical Load Balancing"](https://dl.acm.org/doi/pdf/10.1145/2007116.2007139), published in the Proceedings of ACM SIGMETRICS 2011. This work explores whether the geographical diversity of Internet-scale systems can encourage use of "green" renewable energy and reduce use of "brown" fossil fuel energy. The paper defines two distributed algorithms for achieving optimal geographical load balancing and characterizes achievable reductions in brown energy use resulting from dynamical energy pricing schemes.

The 2021 ACM SIGMETRICS Best Paper Award was awarded to the paper "Nudge:

Stochastically Improving upon FCFS", by Isaac Grosof (Carnegie Mellon University), Kunhe Yang (Tsinghua University), Ziv Scully (Carnegie Mellon University), Mor Harchol- Balter (Carnegie Mellon University).

The 2021 ACM SIGMETRICS Kenneth C. Sevcik Outstanding Student Paper Award went to the paper "A Look Behind the Curtain: Traffic Classification in an Increasingly Encrypted Web", by Iman Akbari (University of Waterloo), Mohammad A. Salahuddin (University of Waterloo), Shi-Han Wen (University of Waterloo), Noura Limam (University of Waterloo), Raouf Boutaba (University of Waterloo), Bertrand Mathieu (Orange Labs), Stephanie Moteau (Orange Labs), Stephane Tuffin (Orange Labs).

# Conference and Workshops:

Like many other conferences, SIGMETRICS had to face the challenges posed by the pandemic that led to the cancellation of the physical in-person edition planned in Beijing. Although it was not possible to enjoy the conventional conference experience, we have successfully run SIGMETRICS as a virtual conference on the Gather platform.

The main conference papers were published as usual, accompanied by free videos released on both the digital library and YouTube. The Gather interaction model offered a fresh new way for attendees and new participants to meet other people in the SIGMETRICS community.

SIGMETRICS also featured this year for the first time a soft-tracking model, whereby authors could specify at submission time a paper as falling in one of four thematic categories (learning, measurement & applied modeling, systems, and theory). The resulting process offered more clarity on the contributions we seek in the venue as well as helped in matching reviewers to papers.

The conference also hosted several tutorials and four workshops: RLNQ 2021 - International workshop on Reinforcement Learning in Networks and Queues; MAMA 2021 - International workshop on Mathematical performance Modeling and Analysis; CINS 2021 - International Workshop on Critical Infrastructure Network Security; and [DCC 2021](https://dcc21.pages.ist.ac.at/) International Workshop on Distributed Cloud Computing.

SIGMETRICS also partners with SIGSOFT and SPEC as technical sponsor of the ICPE conference, and together with IEEE in IWQoS. We gave our support to the first online editions of these events, which were also highly successful despite the pandemic.

# Papers on emerging and new areas of performance analysis, measurement and modeling:

Research published in SIGMETRICS typically focuses on performance evaluation, computer systems and networks. Technical areas of interest to the community include, but are not limited to, network performance, load balancing, systems, pricing, queueing, workload optimization, caching, control and resource allocation, memory, forecasting, graph analysis and learning.

The ACM SIGMETRICS 2021 conference accepted several papers on the areas listed above and

also featured work on exciting topics of increasing applied and theoretical interest, we mention in particular the best paper and best student paper award papers:

In "Nudge: Stochastically Improving upon FCFS", by Isaac Grosof (Carnegie Mellon University), Kunhe Yang (Tsinghua University), Ziv Scully (Carnegie Mellon University), Mor Harchol-Balter (Carnegie Mellon University), the authors design an ingenious scheduling policy which uniformly improves all the tails of First-Come-First-Serve (FCFS), in the case of light-tailed job sizes, and settles a fundamental open problem concerning the performance of FCFS.

In "A Look Behind the Curtain: Traffic Classification in an Increasingly Encrypted Web", by Iman Akbari (University of Waterloo), Mohammad A. Salahuddin (University of Waterloo), Shi-Han Wen (University of Waterloo), Noura Limam (University of Waterloo), Raouf Boutaba (University of Waterloo), Bertrand Mathieu (Orange Labs), Stephanie Moteau (Orange Labs), Stephane Tuffin (Orange Labs), the authors use Machine Learning (ML) to identify/classify the different services (e.g., streaming, gaming, chat) carried in encrypted Web traffic. Their three-pronged approach considers flow-level statistics, raw packet bytes from TLS handshakes, and traffic shape (time- series) information, while remaining as protocol-agnostic as possible. Experimental results on real-world datasets show classification accuracies exceeding 95%.

# Broadening participation and significant activities and programs:

For the second year in a row, the SIGMETRICS Executive Committee broadened participation by introducing a set of subcommittees. These sub-committees are composed of board members and SIG members who accepted to volunteer for a one- year period minimum. Their goals are to support SIG activities such as advising conference organizers, developing the conference format, improving student engagement, improving equality & diversity in the SIG, and increasing the SIG visibility via social media, web and YouTube channels. The committee membership consists of 35 individuals, greatly broadening the participation of the community to the SIG activities. In particular, the novel soft tracking model was developed as part of these activities.

We have introduced for the first time a Call for Hosting, which helped to attract multiple bids for future locations. As a result, the SIG planning is now on a more solid footing, with the location of the events scheduled up to 2024.

We have revised upwards, with ACM approval, the honorarium of all our awards by 500$ each to compensate for inflation.

For the first time this year, SIGMETRICS also hosted a student research competition, which awarded first prizes to a postgraduate student (Shreshth Tuli, Imperial College London) and an undergraduate student (Edwin Peng, CMU), after a selection through a competitive poster session and a public presentation.

# Key issues for the next 2-3 years:

Evolving our format to respond to the coronavirus outbreak. In particular, SIGMETRICS 2022 (to be held jointly with IFIP Performance) will be based in Mumbai, India, and will feature for the first time a hybrid conferencing model.

We intend to develop a revision of our awards to include more forms of recognition for students, such as a doctoral dissertation award.

Improving governance via a knowledge base. The SIG board has started and wants to continue to consolidate best practices and governance materials in order to provide a persistent knowledge base for future chairs and SIG boards.

# Other Issues

N/A.

**SIGMICRO ANNUAL REPORT**

**July 2020 – June 2021**

**Submitted by: Onur Mutlu, Chair**

1. Comment on the ways in which the SIG is a healthy and viable organization

SIGMICRO is quite healthy in terms of its conferences (and their impact), finances, and membership. MICRO (https://www.microarch.org/), which is celebrating its 54th incarnation in 2021, is considered a premiere conference in computer architecture, microarchitecture and hardware/software interfaces, continuing its flagship role in the community. It is our flagship activity and its impact and participation keeps growing, with paper submission counts continuously over 400 and participation over 600 especially in most recent incarnations. The MICRO Test of Time Award (https://www.microarch.org/tot/) recognizes some of the highly-influential works that were published at MICRO and the works that have won the award attest to the impact MICRO has had in the microarchitecture and computer architecture research and products in the world.

Elections are healthy and held on time. Volunteers are also highly-active participants and researchers in the community. Our newsletters, news and activities are frequently communicated to our membership and the world via our website and social media channels. We actively support student participation and health, especially via our recognition and support for the Computer Architecture Student Association (https://twitter.com/comparchsa) in its activities.

MICRO conference (https://www.microarch.org/). MICRO is in its 54th year in 2021. It is growing in terms of attendance, submissions and impact.

MICRO Test of Time Award (https://www.microarch.org/tot/) is a major award SIGMICRO aids in organizing. Many papers that revolutionized computer design (published at the MICRO conference) received this award.

SIGMICRO also sponsors (at 45%) a younger conference, CGO, which is the top conference in code optimization. We also sponsor (at 100%) an up-and-coming conference, Computing Frontiers, which enables easier expression and publication of non-traditional ideas in computer architecture. All conferences and workshops SIGMICRO sponsors are healthy and they are listed here: https://www.sigmicro.org/about/conferences.php.

2. Describe your efforts related to Diversity, Equity, and Inclusion.

1. SIGMICRO, together with SIGARCH, has played a key role in establishing the SIGMICRO/SIGARCH CARES (Committee to Aid REporting on discrimination and haraSsment policy violations) initiative (https://www.sigmicro.org/, https://www.sigarch.org/benefit/cares/) in 2018, which is a key diversity, equity and inclusion effort that has recently expanded in scope. This initiative is strongly supported and nourished by SIGMICRO. SIGMICRO DEI chair Reetuparna Das is the main contact person for this initiative.

CARES’ scope has recently been expanded, as described in the SIGARCH/SIGMICRO CARES Annual Report written by Timothy Pinkston and Shan Lu:

“Since its inception, CARES—comprised of well-known and respected people in the computer architecture community who are approachable and willing to listen—has played the role of serving as a resource to help persons who experience discrimination or harassment at SIGARCH/SIGMICRO events by serving as a sounding board for such persons and providing advice on the steps necessary to have the matter further investigated by ACM. In early June of 2020, the then CARES Co-chairs received approval from the ACM President to expand the scope of CARES’ role to include discrimination that might occur during the ACM’s publications-related processes, not just at ACM sponsored events. Specifically, the expanded mission would address the following three ACM policies related to ethical violations in the publication process:

1. policy on plagiarism, misrepresentation, and falsification https://www.acm.org/publications/policies/plagiarism-overview

2. policy on coercion and abuse in the ACM publications process https://www.acm.org/publications/policies/coercion-and-abuse

3. policy on roles and responsibilities in ACM publishing

https://www.acm.org/publications/policies/roles-and-responsibilities

With its expanded scope, CARES has enriched the set of literature and other resources it has complied and made available to the public on its Resources webpage, found here. Resources added beyond ACM policy documents include information on inclusion and diversity, implicit bias, sexual harassment, helping targets of (i.e., persons who experience) sexual harassment and responses to sexist remarks.

As listed on its Operations webpage here, CARES has continued its presence (albeit virtual) at the three major computer architecture conferences, all of which occurred virtually over the past year: ISCA (‘20, ‘21), MICRO (‘21), and ASPLOS (‘21). In addition, there was a CARES presence at the PC meetings (also occurring virtual) for ISCA’21, MICRO’21, ASPLOS’21. At each event, one or more members briefly introduced CARES and availed themselves to anyone who wished to speak about any questions or concerns regarding matters falling within the scope of CARES, sometimes through announced “virtual CARES table” hours of scheduled availability for CARES members.”

2. SIGMICRO, also together with SIGARCH, supports the activities of the recently-formed Computer Architecture Student Organization (CASA, https://www.sigarch.org/casa/). The Computer Architecture Student Association (CASA) is an independent student-run organization with the express purpose of developing and fostering a positive and inviting student community within computer architecture. Created by students for students, CASA aims to support the student community throughout the demanding years of academic study.

3. SIGMICRO consistently sponsors and supports the Career Workshop for Women and Minorities in Computer Architecture at the MICRO conference. The MICRO Career Workshop brings together women and underrepresented minorities at different levels in academia, industry, research, government, and students to promote the recruitment, retention and progression of women and underrepresented groups with research interests in computer architecture. The workshop highlights emerging and hot topics in computer architecture, but also provides opportunities for cross-disciplinary research, networking, and career advice and mentoring. The workshop contains a mix of technical presentations and panel sessions given by academic and industry leaders as well as informal activities to provide mentoring for students as they get started in their careers. https://www.colorado.edu/conference/cwwmca/prior-workshops

4. SIGMICRO supports student travel grants through the MICRO and CGO conferences. These grants give priority to underrepresented groups.

3. Provide a list of awards and recipients

1. MICRO Conference awarded a Best Paper Award & a Best Paper Runner-Up in 2020:

Best Paper Award Winner

Bit-Exact ECC Recovery (BEER): Determining DRAM On-Die ECC Functions by Exploiting DRAM Data Retention Characteristics

Minesh Patel, Jeremie Kim, Taha Shahroodi, Hasan Hassan, Onur Mutlu (ETH Zurich)

Best Paper Award Runner-Up

Virtualized Logical Qubits: A 2.5D Architecture for Error-Corrected Quantum Computing

Casey Duckering, Jonathan Baker, David Schuster, Fred Chong (University of Chicago)

2. MICRO Test of Time Award (https://www.microarch.org/tot/) is a major award SIGMICRO aids in organizing since 2014. Many papers that revolutionized computer design (published at the MICRO conference) received this award. An independent committee, whose formation is described at https://www.microarch.org/tot/), decides the selection of awardees.

In 2020, three papers were awarded the ToT Award (https://www.microarch.org/news/210118.html):

• A Dynamic Multithreading Processor (MICRO 1998)

Haitham Akkary, Michael A. Driscoll

• Fetch Directed Instruction Prefetching (MICRO 1999)

Glenn Reinman, Brad Calder, Todd M. Austin

• A Permutation-Based Page Interleaving Scheme to Reduce Row-Buffer Conflicts and Exploit Data Locality (MICRO 2000)

Zhao Zhang, Zhichun Zhu, Xiaodong Zhang

A Dynamic Multithreading Processor

This paper presents one of the pioneering paradigms proposed in the 1990s that pushed the envelope in terms of extracting ILP. Like the foundational Multiscalar paper (ISCA, 1995), this DMT (dynamic multi-threading) paradigm increases instruction supply by fetching from multiple control boundary points within a single program. In key contrast to Multiscalar, the fetch threads are created automatically by hardware (at procedure and loop boundaries), without relying on compiler support. The spawned threads are executed speculatively on a simultaneously multithreading pipeline. A two-level hierarchical instruction window mechanism is supported by out-of-order instruction fetch and dispatch. Coupled also with novel data value prediction, DMT enables distant ILP exploitation by effectively increasing the dispatchable instruction pool, without incurring the hardware complexity of large single-window instruction wake-up and select logic. In summary, this foundational paper opened up the path beyond the known ILP limits of a single program’s superscalar execution model, without any compiler dependence.

Fetch Directed Instruction Prefetching

This paper introduced the idea of Fetch Directed Instruction Prefetching, an instruction prefetching technique in which the branch predictor and branch target buffer are allowed to run ahead of the main thread of execution providing addresses to prefetch instructions along the predicted path. Building on the idea of the Fetch Target Queue introduced previously by the same authors, this paper demonstrates a simple but very effective instruction prefetching technique that has had a significant and long-lasting impact on microprocessor design as well as academic research into instruction prefetching. Given today’s ever-expanding instruction working set sizes, we expect this foundational work to become even more important as research into instruction prefetching continues.

A Permutation-Based Page Interleaving Scheme to Reduce Row-Buffer Conflicts and Exploit Data Locality

This paper demonstrates that set conflicts at the cache level lead to bank conflicts at the main memory level, increasing row buffer conflicts, and memory latency. It proposes the permutation-based memory interleaving technique to solve the problem at a very low hardware cost. The proposed method has had a significant impact on modern systems. For example, Sun Microsystems adopted the method and many mainstream commercial processors use the method (click here for a list of some examples) or a variant of it.

3. MICRO Hall of Fame lists the most prolific authors at the MICRO conference over its 54-year history. List of recognized people can be found here: https://www.sigmicro.org/awards/microhof.php

4. CGO Conference awarded a Best Paper Award in 2021:

Best Paper Award Winner

Compiling Graph Applications for GPUs with GraphIt

Ajay BrahmakshatriyaMassachusetts Institute of Technology, Yunming Zhang, Changwan HongMassachusetts Institute of Technology, Shoaib KamilAdobe Research, Julian ShunMIT, Saman AmarasingheMassachusetts Institute of Technology

5. SIGMICRO Distinguished Service Award and CACM Research Highlights for 2020/2021 are under progress. They were delayed due to COVID-19 considerations.

4. List significant papers on new areas that were published in proceedings

MICRO 2020 received a record number of 446 full-paper submissions (30% higher than MICRO 2019), out of which the program committee selected 82 papers for inclusion in the program – an acceptance rate of 18%. Many of these 82 papers are deemed significant. We provide a small, diverse selection here only as examples.

Best Paper Award Winner

Bit-Exact ECC Recovery (BEER): Determining DRAM On-Die ECC Functions by Exploiting DRAM Data Retention Characteristics

Minesh Patel, Jeremie Kim, Taha Shahroodi, Hasan Hassan, Onur Mutlu (ETH Zurich)

Best Paper Award Runner-Up

Virtualized Logical Qubits: A 2.5D Architecture for Error-Corrected Quantum Computing

Casey Duckering, Jonathan Baker, David Schuster, Fred Chong (University of Chicago)

SuperNPU: An Extremely Fast Neural Processing Unit Using Superconducting Logic Devices

Koki Ishida (Kyushu University); Il-Kwon Byun (Seoul National University); Ikki Nagaoka (Nagoya University); Kosuke Fukumitsu (Kyushu University); Masamitsu Tanaka (Nagoya University); Satoshi Kawakami, Teruo Tanimoto, Takatsugu Ono (Kyushu University); Jangwoo Kim (Seoul National University); Koji Inoue (Kyushu University)

Graphene: Strong yet Lightweight Row Hammer Protection

Yeonhong Park, Woosuk Kwon, Eojin Lee, Tae Jun Ham, Jung Ho Ahn, Jae W. Lee (Seoul National University)

Systematic Crosstalk Mitigation for Superconducting Qubits via Frequency-Aware Compilation

Yongshan Ding, Pranav Gokhale, Sophia Fuhui Lin, Richard Rines, Thomas Propson, Fred Chong (University of Chicago)

AQUOMAN: An Analytic-Query Offloading Machine

Shuotao Xu (MIT); Thomas Bourgeat (MIT CSAIL); Tianhao Huang (MIT); Hojun Kim, Sungjin Lee (DGIST); Arvind (MIT)

Procrustes: A Dataflow and Accelerator for Sparse Deep Neural Network Training

Dingqing Yang, Amin Ghasemazar, Xiaowei Ren (University of British Columbia); Maximilian Golub (Microsoft); Guy Lemieux, Mieszko Lis (University of British Columbia)

Ptolemy: Architecture Support for Robust Deep Learning

Yiming Gan (University of Rochester); Yuxian Qiu, Jingwen Leng, Minyi Guo (Shanghai Jiao Tong University); Yuhao Zhu (University of Rochester)

Coordinated Priority-Aware Charging of Distributed Batteries in Oversubscribed Data Centers

Sulav Malla (University of South Florida, Facebook Inc.); Qingyuan Deng, Zoh Ebrahimzadeh, Joe Gasperetti, Sajal Jain, Parimala Kondety, Thiara Ortiz, Debra Vieira (Facebook Inc.)

TensorDash: Exploiting Sparsity to Accelerate Deep Neural Network Training

Mostafa Mahmoud, Isak Edo Vivancos, Ali Hadi Zadeh, Omar Mohamed Awad, Gennady Pekhimenko (University of Toronto); Jorge Albericio (Cerebras); Andreas Moshovos (University of Toronto)

SeedEx: A Genome Sequencing Accelerator for Optimal Alignments in Subminimal Space

Daichi Fujiki, Shunhao Wu, Nathan Ozog, Kush Goliya, David Blaauw, Satish Narayanasamy, Reetuparna Das (University of Michigan)

GenASM: A High-Performance, Low-Power Approximate String Matching Acceleration Framework for Genome Sequence Analysis

Damla Senol Cali (Carnegie Mellon University); Gurpreet S. Kalsi (Intel); Zülal Bingöl (Bilkent University); Can Firtina (ETH Zurich); Lavanya Subramanian (Facebook); Jeremie S. Kim (ETH Zurich); Rachata Ausavarungnirun (King Mongkut's University of Technology North Bangkok); Mohammed Alser. Juan Gómez Luna (ETH Zurich); Amirali Boroumand (Carnegie Mellon University); Anant Nori (Intel); Allison Scibisz (Carnegie Mellon University); Sreenivas Subramoney (Intel); Can Alkan (Bilkent University); Saugata Ghose (University of Illinois at Urbana–Champaign / Carnegie Mellon University); Onur Mutlu (ETH Zurich / Carnegie Mellon University / Bilkent University)

PerSpectron: Detecting Invariant Footprints of Microarchitectural Attacks with Perceptron

Samira Mirbagher-Ajorpaz (Texas A&M University); Gilles A Pokam (Intel); Esmaeil Mohammmadian Koruyeh (UCR); Elba Garza (Texas A&M University); Nael Abu-Ghazaleh (University of California Riverside); Daniel Jiménez (Texas A&M University)

Building the Computing System for Autonomous Micromobility Vehicles: Design Constraints and Architectural Optimizations

Bo Yu, Wei Hu, Leimeng Xu (PerceptIn); Jie Tang (South China University of Technology); Shaoshan Liu (PerceptIn); Yuhao Zhu (University of Rochester)

NCPU: An Embedded Neural CPU Architecture on Resource-Constrained Low Power Devices for Real-Time End-to-End Performance

Tianyu Jia, Yuhao Ju, Russ Joseph, Jie Gu (Northwestern University)

AutoScale: Energy Efficiency Optimization for Stochastic Edge Inference Using Reinforcement Learning

Young Geun Kim (Arizona State University); Carole-Jean Wu (Facebook)

CGO 2021 also had quite a number of exciting papers. We provide a small, diverse selection here only as examples.

Best Paper Award Winner

Compiling Graph Applications for GPUs with GraphIt

Ajay Brahmakshatriya Massachusetts Institute of Technology, Yunming Zhang, Changwan HongMassachusetts Institute of Technology, Shoaib KamilAdobe Research, Julian ShunMIT, Saman AmarasingheMassachusetts Institute of Technology

MLIR: Scaling Compiler Infrastructure for Domain Specific Computation

Chris LattnerSiFive, Mehdi AminiGoogle, Uday BondhugulaIndian Institute of Science, Albert CohenGoogle, Andy DavisGoogle, Jacques PienaarGoogle, River RiddleGoogle, Tatiana ShpeismanGoogle, Nicolas VasilacheGoogle, Oleksandr ZinenkoGoogle

Memory-Safe Elimination of Side Channels

Luigi SoaresFederal University of Minas Gerais, Fernando Magno Quintão PereiraFederal University of Minas Gerais

Relaxed Peephole Optimization: A Novel Compiler Optimization for Quantum Circuits

Ji LiuNorth Carolina State University, Luciano BelloIBM Research, Huiyang ZhouNorth Carolina State U.

HHVM Jump-Start: Boosting both Warmup and Steady-State Performance at Scale

Guilherme OttoniFacebook, Bin LiuFacebook

AnghaBench: a Suite with One Million Compilable C Benchmarks for Code-Size Reduction

Anderson Faustino da SilvaState University of Maringá, Bruno Conde KindUFMG, José Wesley MagalhãesFederal University of Minas Gerais, Jeronimo Nunes RochaUFMG, Breno GuimaraesUFMG, Fernando Magno Quintão PereiraFederal University of Minas Gerais

5. Describe conference activity

All conferences and workshops SIGMICRO sponsors are healthy and they are listed here, with up-to-date information on the organizers, programs, processes, papers, links to presentations, etc.: https://www.sigmicro.org/about/conferences.php.

Our flagship conference is MICRO, which is in its 54th incarnation in 2021. MICRO conference (https://www.microarch.org/). MICRO is in its 54th year in 2021. It is growing in terms of attendance, submissions and impact. As mentioned above, MICRO Test of Time Award (https://www.microarch.org/tot/) is a major award SIGMICRO aids in organizing. Many papers that revolutionized computer design (published at the MICRO conference) received this award. Micro Test of Time Award attests to the impact MICRO has had in the field of computing systems, hardware and compilers. MICRO 2020 received a record number of 446 full-paper submissions (30% higher than MICRO 2019), out of which the program committee selected 82 papers for inclusion in the program – an acceptance rate of 18%. In addition to the 82 papers, the program also features three keynotes and a track highlighting the ACM Student Research Competition. The keynotes are delivered by Srilatha (Bobbie) Manne, Cristina Silvano, and Rich Wolsky. The conference, held online, was very well attended and received very positive reviews as indicated by the MICRO Conference Survey organized by SIGMICRO (which can be found here: https://www.sigmicro.org/resources/microsurveys.php.

SIGMICRO also sponsors (at 45%) a younger conference, CGO (International Symposium on Code Generation and Optimization), which is the top conference in code optimization. https://conf.researchr.org/series/cgo/ CGO administers its own test of time award. According to the Program Chairs report “This year the conference received 89 submissions, 12 of which were Tools and Practical Experience papers. Based on the critical reviews of the Program Committee and subsequent online discussions, 25 high-quality research papers were accepted, with an acceptance rate of 32%, 5 Tool papers and one Practical Experience paper were accepted. The accepted papers cover a diverse range of topics with several papers having both industry and university co-authors.”

We also sponsor (at 100%) an up-and-coming conference, Computing Frontiers (CF), which enables easier expression and publication of non-traditional ideas in computer architecture. https://www.computingfrontiers.org/2021/ CF ran successfully online in 2021.

We sponsor the broad-based ESWEEK set of conferences and workshops at 10%. https://esweek.org/ ESWEEK is the premier event covering all aspects of hardware and software design for smart, intelligent and connected computing systems. By bringing together three leading conferences (CASES, CODES+ISSS, EMSOFT), a symposium (NOCS) and several workshops and tutorials, ESWEEK allows attendees to benefit from a wide range of topics covering the state-of-the-art in embedded systems research and development.

SIGMICRO also consistently sponsors two workshops that are part of MICRO:

1. Career Workshop for Women and Minorities in Computer Architecture at the MICRO conference, which was described above under DEI activities. https://www.colorado.edu/conference/cwwmca/prior-workshops

2. International Workshop on Network on Chip Architectures. The NoCArc workshop provides a forum for researchers to present and discuss innovative ideas and solutions related to design and implementation of multi-core systems on chip. https://www.nocarc.org/

6. Comment on special projects and non-conference programs that provided service to some part of your technical community

As mentioned above under Question 2, we support CARES and CASA to greatly improve DEI and aid new generations of students. The Computer Architecture Student Association (CASA) is an independent student-run organization with the express purpose of developing and fostering a positive and inviting student community within computer architecture. Created by students for students, CASA aims to support the student community throughout the demanding years of academic study.

We also informally support and encourage educational activities by individuals in our community, such as educational lectures and online courses that are made freely available online for the consumption of the community. We aim and hope to turn this sort of support and encouragement into a more structured program soon.

7. A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.

While our conferences adapted quite well to the fully virtual setting due to COVID-19, going forward, dealing with hybrid-mode (part in-person and part virtual) conferences is going to be a challenge we will likely have to deal with to get the benefits of both in-person and virtual settings. We believe that virtual setting has the benefit of improving diversity and inclusiveness of our conferences, so we would like to keep it as part of the conference attendance options even if/when in-person attendance becomes completely normal again.

We could always do better in terms of increasing and diversifying our membership. The size of our member base, although healthy, certainly does not reflect the attendance trends at MICRO and CGO (as well as other conferences we sponsor, like CF). We are working on this by getting more students signed up and creating new awards and mentoring and educational initiatives for students and members. 2020 was a tough year due to COVID-19 crisis in terms of our membership outreach efforts, but we aim to perform more outreach in 2021 and beyond via such initiatives as well as via our revamped communication and social media channels.

**SIGMIS Annual Report**

**July 2020 - June 2021**

**Submitted by: Cindy Riemenschneider, Chair**

1. **Comment on the ways in which the SIG is a healthy and viable organization**

Overall, the ACM SIGMIS has felt the disruptive effects of the global pandemic as have many academic organizations and institutes of higher education. Nonetheless, we retain a core group of active and contributing members and a nucleus of strong and continuing programs.

In 2020, *The DATA BASE for the Advances in Information Systems* (our SIG publication) received 89 submissions from 25 different countries across the globe. A total of 40 manuscripts were accepted for publication, and 122 different reviewers assisted with the editorial process.

1. **Describe your efforts related to Diversity, Equity, and Inclusion**.

We have conducted, as best we can, conferences based in Germany for 2020 and 2021.

We also planned our on-line conference to run for approximately 20 hours on one day so that presenters and participants could log on as fitting within their time zone. Three attendees persisted through the whole marathon.

1. **Awards Given**

## SIGMIS Lifetime Achievement Award:

This year the SIGMIS Lifetime Achievement award was presented to **Dr. Eileen Trauth,** Professor Emerita Pennsylvania State University, USA. This represents the third time the SIG has presented the award. The award was presented at our virtual conference in June. The announcement has been posted to our website (see Appendix A).

## SIGMIS Early Career Award:

This year we inaugurated the inaugural Early Career award and presented it to **Manuel Wiesche**, TU Dortmund University, Germany. The announcement was posted on our website (see Appendix B).

## SIGMIS CPR Conference Awards:

* **2020 Magid Igbaria Outstanding Conference Paper of the Year Award Recipients**
* Katharina Pflügner, Annalena Baumann, and Christian Maier received this years’ award for their article "Managerial Technostress: A Qualitative Study on Causes and Consequences."

**The DATABASE for Advances in Information Systems**

**Annual awards, Vol. 51.**

Each year, DATA BASE undertakes a nomination of Best Paper to the AIS Senior Scholar’s competition. This year, covering the content from Vol. 51, our Pre-Eminent Editorial Board members voted in favor of the following:

**Best Paper:**

Gerster, D., Dremel, C., Brenner, W. and Kelker, P. (2020). How enterprises adopt agile forms of organizational design: A multiple-case study. *The DATA BASE for Advances in Information Systems, 51* (1), 84-103.

**Daniel Gerster** (daniel.gerster@student.unisg.ch; daniel.gerster@isg-one.com) is a research associate at the Institute of Information Management (IWI-HSG) at the University of St.Gallen, Switzerland, and Director at Information Services Group (ISG) in Munich, Germany. He holds a M.Sc. in economics from the University of Bonn, Germany. His research focuses on enterprise agility and has been presented at conferences such as the International Conference on Information Systems (ICIS), European Conference on Information Systems (ECIS), and Hawaii International Conference on System Sciences (HICSS). At ISG, he consults leading global enterprises in questions of digital strategy and digital technologies. Before joining ISG, he was Principal and global CIO at Roland Berger in Munich, Germany.

**Christian Dremel** (christian.dremel@uni-bamberg.de) is a guest lecturer at the University of Bamberg, Germany and (technical) lead for advanced analytics at the Brose group in Bamberg, Germany. He holds a Ph.D. from the University of St.Gallen, Switzerland. His research focuses on the successful adoption and assimilation of analytics and agility. In particular, he investigates the organizational transformations (e.g., organizational structures, governance mechanisms, and capabilities) required to profit from analytics and artificial intelligence approaches. His research has been published in journals such as *Information and Management*, *MIS Quarterly Executive* (MISQE), *Electronic Markets*, and the *Journal of Information Technology Teaching Cases*, and presented at conferences such as the International Conference on Information Systems (ICIS).

**Walter Brenner** (walter.brenner@unisg.ch) joined St.Gallen University in 2001 after having held chairs at the University of Essen (Germany) and Freiberg University of Mining and Technology (Germany). He earned a graduate degree in business administration and a doctorate from the University of St.Gallen. His research focuses on information management, consumer data, innovation, and digital industrial services. He has authored and edited 30 books and more than 300 publications. Dr. Brenner also practices as a consultant and is an entrepreneur. Prior to joining academia, he was Head of Application Development at Alusuisse-Lonza AG (Switzerland).

**Prashant Kelker** (prashant.kelker@isg-one.com) is Partner at Information Services Group (ISG) and heads ISG's Digital Strategy and Solution practice in the US. He works with enterprises to shape their operating models for a digital journey and brings 20 years of expertise in all aspects of applications and platforms, from designing transformations through the whole sourcing lifecycle. Prashant’s experience spans a range of industries, including financial services, telecom and media, automotive and utilities, and a range of geographies, including Europe, the Americas and India. His research focus addresses topics of enterprise agility.

**Runner-up to best Paper:**

**Rutschi, C., & Dibbern, J.** (2020). Towards a Framework of Implementing Software Robots: Transforming Human-executed Routines into Machines. *The DATABASE for Advances in Information Systems*, 51(1), 104-128.

**Corinna Rutschi** is a Ph.D. student of information systems at the Institute of Information Systems at the University of Bern, Switzerland. She previously worked in consulting at IBM Switzerland. She received her master’s degree in information systems from the University of Bern, Switzerland. Her current research focuses on software robots, their implementation, and the interplay of humans and machines. She has published in conference proceedings of the Hawaii International Conference on System Science.

**Jens Dibbern** is Professor of Information Systems at the University of Bern, Department of Business Administration in Switzerland. His research focuses on IT sourcing, platform ecosystems, system implementation/use, and distributed collaboration. His publications appeared in Information Systems Research (ISR), Management Information Systems Quarterly (MISQ), Journal of Management Information Systems (JMIS), Journal of the Association of Information Systems (JAIS), and others. He has served on the editorial boards of MISQ and ACM SIGMIS Database and currently serves as senior editor of JAIS and MISQ Executive; he is also department editor of Business & Information Systems Engineering (BISE)

Also, each year, the Editors of DATA BASE analyze production statistics to identify candidates for Best Senior Editor and Best Reviewer.

This year’s award winners are:

**Best Senior Editor:** Mark Gillenson

**Mark L. Gillenson** is Professor of Business Information and Technology (formerly MIS) in the Fogelman College of Business and Economics of the University of Memphis in Memphis, TN. Dr. Gillenson handled a higher-than average manuscript load in 2020 and was extremely timely in his assignments under very uncertain circumstances.

**Best Reviewer:** Vladimir Ambartsoumian

**Vladimir Ambartsoumian** is an Instructor in the Department of Business Information and Technology at The University of Memphis, Fogelman College of Business. Dr. Ambartsoumian undertook a larger than average number of review assignments and was timely and thorough in his assessment of the assigned manuscripts.

**Runner-up to best reviewer:** Rene Moquin

**Rene Moquin** is an Assistant Professor at the Department of Information Systems of Northeastern State University in Broken Arrow, OK. Dr. Moquin once again undertook a larger than average number of review assignments and was both developmental and thorough in his assessment of the assigned manuscripts.

The editors-in-chief would like to thank all our senior editors, reviewers, and authors – without whom we could not produce the quality and innovation that our readership has come to expect. It is with much gratitude that we look forward to another year of *The DATABASE for Advances in Information Systems.*

1. **List significant papers on new areas that were published in proceedings**

Understanding Boundaryless IT Professionals: An Investigation of Personal Characteristics, Career Mobility, and Career Success Authors: Barbara Prommegger, Daniyal Arshad, Helmut Krcmar

SIGMIS-CPR'21: Proceedings of the 2021 on Computers and People Research Conference

June 2021 Pages 51–59, https://doi.org/10.1145/3458026.3462162

ABSTRACT

Shifts in the evaluation of career success and an increase in boundary-spanning activities in the IT profession pave the way for new career models in IT. Instead of opting for a technical or managerial career in IT, more and more IT professionals follow boundaryless career forms, i.e. IT careers that do not correspond to a horizontal career path but allow career transitions between organizations and sectors. To better understand this trend, we examine three boundaryless IT professional groups-late-entry IT professionals, boomerang IT professionals, and IT leavers. Investigating German socio-economic panel data, we examine their personal characteristics, career mobility patterns, and career success factors. We find a high proportion of IT professionals following boundaryless careers, demonstrating that IT is becoming increasingly open to transition from and to other sectors. We also discuss the high proportion of women in boundaryless IT careers, thus illustrating alternative career paths for women in IT. Finally, we show that boundaryless IT professionals tend to have a higher workload in IT jobs than in non-IT jobs, yet, simultaneously, earn more and exhibit higher life satisfaction. Our study contributes to a better understanding of boundaryless IT careers.

Emancipatory Data Science: A Liberatory Framework for Mitigating Data Harms and Fostering Social Transformation author -- Thema Monroe-White

SIGMIS-CPR'21: Proceedings of the 2021 on Computers and People Research Conference

June 2021, pp 23–30

<https://doi.org/10.1145/3458026.3462161>

ABSTRACT

The cross-cutting and interdisciplinary nature of data work has created an opportunity to engage more students from diverse backgrounds in data science and has expanded pathways for entry for future data professionals. However, without greater representation of Black, Indigenous, and other marginalized people of color in data science, we risk reinforcing existing systems of differentiated power that oppress as opposed to empower these groups. In this paper, the term emancipatory data science is coined to highlight the unique contributions of individuals who use their expertise to mitigate data harms for minoritized, and marginalized populations and to suggest a way forward for the data science workforce and research community given our increasingly algorithmic society.

**5.   Describe conference activity**

See Appendix C for summary information of recent conferences. The 2021 conference was held in a virtual format. Twenty-five papers were submitted and 15 were accepted for the conference, a 67% acceptance rate. Due to the virtual modality, there were no poster sessions or panels. The opportunity to submit research in these two formats was not offered in the CFP because of the virtual modality.

**6.   Comment on special projects and non-conference programs that provided service to some part of your technical community**

**Research grant award:**

The grant awards for 2019-2020 are listed below:

Sang Hoo Oh, so17c@my.fsu.edu

The Impact of AI on Information Systems Workforce

[barbara.prommegger@tum.de](mailto:barbara.prommegger@tum.de) and [helmut.krcmar@tum.de](mailto:helmut.krcmar@tum.de)

An Investigation of Employees Without IT Background Working in IT Jobs

[katharina.pfluegner@uni-bamberg.de](mailto:katharina.pfluegner@uni-bamberg.de) and [christian.maier@uni-bamberg.de](mailto:christian.maier@uni-bamberg.de)

Managerial technostress: A qualitative study of causes and coping behavior

We postponed executing the research grant award program for 2020-21 due to the pandemic.

Our 2021-22 Committee members have not yet been appointed.

**Doctoral Consortium**

This year while moving the annual conference online, we also moved the doctoral consortium into a virtual mode. The leadership team was comprised of five co-chairs who both organized and facilitated the 2021 Doctoral Consortium:

* Deborah Armstrong (djarmstrong@business.fsu.edu)
* Andreas Eckhardt (andreas.eckhardt@ggs.de)
* Indira Guzman (indira.guzman@trident.edu)
* Michelle Kaarst-Brown (mlbrow03@syr.edu)
* Tim Weitzel ([tim.weitzel@uni-bamberg.de](mailto:tim.weitzel@uni-bamberg.de))
* Fred Niederman ([fred.niederman@slu.edu](mailto:fred.niederman@slu.edu)) also participated in the session

## Presentations were by the following one doctoral student participant:

Title: AI-based recommendations to support individuals’ decision making processes

Candidate: Jessica Ochmann

Affiliation: Friedrich-Alexander University Erlangen-Nürnberg, Germany

Supervisor: Prof. Dr. Sven Laumer

**ICIS community involvement**

We continue to co-sponsor the ICIS conference each December where we support the best doctoral dissertation in information systems award, host a reception, and staff a booth primarily to promote our publication, DATABASE. Of course, this year we were unable to do this as the conference was moved online.

We did, however, sponsor the annual MIS dissertation award presented as detailed below.

Winner: Jeffry Mullins, University of Arkansas, USA

Dissertation: Getting Serious about Games: A Study of Work and Play through Information Systems

**7.   A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.**

**Finances**

Over the past 20 years due to strong revenues from the digital library, modest annual profits from our annual conference, and frugal management of expenses the SIG achieved significant budget surpluses. However, this may have come at the cost of less than needed reinvestment in new programs and services. Over the past 3 years we have budgeted for investing in stronger support for our publication, greater support for doctoral student travel to our conference, new awards, and a new research grant. This has resulted in stronger conference attendance, a stronger publication, and enthusiasm for our programs. However, at some point the current investments will need to be used, at least in part, to enhance current revenue streams or create new ones. We still have a significant amount of funds available for continued investment, but in the long run this will need to be of concern to the SIG leadership.

**The DATABASE for Advances in Information Systems**

Our publication, The DATABASE for Advances in Information Systems, continues a concerted marketing campaign of research conference visibility focused on impact and intellectual innovation. We have distributed 4 issues regularly for many years. We plan to add 5th issues for the next two coming years. Our current co-editors, Thomas Stafford and Deborah Armstrong have been settling into the role and are preparing initiatives to move the journal forward. Note that we achieved a citation index above 1.0 for the first-time last year.

In recent years, a new section of *philosophy of science* and another on *research methods* (particularly path analysis) have been added to updating the strategic direction of the publication. Note also that submissions continue to increase, pressuring the review system, however, editors are recruiting new associate editors as needed. We are also moving from requiring university host institutions from funding publication related expenses such as proofreading and hosting booths at key conferences to taking these on within the SIG. We expect that this will provide much greater support for the publication team and extend their ability to increase quality and inform the community of our efforts.

We continue seeking a way that allows AIS and ACM to extend distribution of DATABASE to AIS members. Due to the nature of revenue streams and business models, these discussions are sensitive, but we are hopeful that this can be developed as a greater conduit for mutual benefit. We are also looking at ways to contract with ACM for a broader range of editorial services despite being categorized as a “newsletter” rather than journal.

## Social Media and Communications:

SIGMIS has a Facebook page ([https://www.facebook.com/acmsigmis](about:blank)) and a LinkedIn profile ([https://www.linkedin.com/groups/5148399](about:blank)) and our new Twitter account ([https://twitter.com/acmsigmis](about:blank)).

As these are relatively new, we haven’t yet developed a thorough sense of their effectiveness or how to best use them to communicate the right amount and type of information with members, but we continue to enhance our presence in the social media arena.

## 2021 SIGMIS Conference:

We have begun the planning for the 2022 conference as a face-to-face conference in Atlanta, Georgia, USA. We will have to see how attendance returns when we meet face to face, as will many other conferences, we expect. Note that our submissions were largely the same as in recent years this time around, however, we did not have the poster sessions which reduced participation, but we hope will return with the reintroduction of this conference feature.

## Collaborations:

Damien Joseph continues to provide excellent leadership of the in-cooperation program with other groups seeking our support relative to their conferences. It turns out there are a much larger number than expected of requests in this area and we want to redesign our approach. It takes some effort to evaluate each of these in detail and decide whether our support is warranted as well as how to generate more benefit to our members. It will be advantageous if we can exploit these connections for mutual advertisements of these conferences to our members and our CPR conference to their members.

SIGMIS was in cooperation with the following 11 conferences:

1. CHIRA ’20: International Conference on Computer-Human Interaction Research and Application
2. CLOSER ’20: International Conference on Cloud Computing and Service Science
3. CSEDU ’20: International Conference on Computer Supported Education
4. DATA ’20: International Conference on Data Science, Technology and Applications
5. ENASE ’20: International Conference on Evaluation of Novel Approaches to Software Engineering
6. FEMIB ’20: International Conference on Finance, Economics, Management, and IT Business
7. HEALFINF ’20: International Conference on Health Informatics
8. ICE-B ’20: International Conference on e-Business
9. ICEIS ’20: International Conference on Enterprise Information Systems
10. ICIKS '20: International Conference on Information and knowledge Systems
11. ICIS ’20: International Conference on Information Systems

SBSI '21: XVII Brazilian Symposium on Information Systems. We continue seeking out collaborations with AIS special interest groups particularly regarding leadership and diversity/inclusion. The strategy is to make focused events and activities of interest to ACM SIGMIS members available before or during all major MIS conferences – ICIS, HICSS, AMCIS, ECIS, and PACIS – as well as our own standalone conference. This is slower going than expected but I anticipate will continue to grow over the next few years.

## Strategic Focus:

In terms of strategy, we have reasserted central interest in IS personnel, users in organizations and society, leadership, and inclusion. We also welcome for both the conference and publication a wide range of MIS topical areas including ethics, all aspects of work, and IS entrepreneurship. The question will be whether it will be more effective to focus more narrowly on traditional topics or to continue expanding the range of issues we deal with.

## ELECTIONS:

We have experienced a complete turnover of elected officers. The new officers are:

Chair -- Cindy Riemenschneider, Baylor University, Texas, USA,

Vice Chair -- Damien Joseph, Nanyang Technological University, Singapore,

Treasurer – Indira Guzman, Trident University, California, USA

The new lineup will reevaluate the portfolio of current programs and likely initiate new ones in response to changes in community needs and preferences.

# Appendix A – Lifetime Achievement Award

**2021 ACM SIGMIS CPR**

Graphical user interface, application

Description automatically generated

# Appendix B – Early Career Award

Graphical user interface, application

Description automatically generated

# Appendix C – Recent Conference Statistics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **CPR 2021 (virtual)** | **CPR 2020 (Nuremberg à**  **virtual)** | **CPR 2019 (Nashville)** | CPR 2018  (Niagara Falls) | **CPR 2017**  **(Bangalore)** | **CPR 2016 (Alexandria)** |
| Papers | Submissions | 25 | 22 | 42 (including posters) | 52 (including posters) | 53 | 28 |
| Accepted | 15 | 14 | 29 | 26 | 31 | 16 |
| Posters | Submissions | *None (format not offered)* | *23* | *(included in papers)* | *(included in papers)* | 18 | 6 |
| Accepted | *None* | 17 | 5 | 19 | 11 | 5 |
| **Overall Submissions** | | **25** | **45** | **42** | **52** | 13 | **34** |
| Overall Acceptance Rate | | 67% | 69% | 69% | 75% | 52 | 67% |
| Panels | | 0 | 0 | 3 (plus iDream play) | 3 | 75% | 2 |

**SIGMM Annual Report**

**July 1, 2020 to June 30, 2021 Submitted by: Alan Smeaton, Previous SIGMM Chair**

**Mission**: SIGMM provides an international interdisciplinary forum for researchers, engineers, and practitioners in all aspects of multimedia computing, communication, storage and application.

1. **Comment on the ways in which the SIG is a healthy and viable organization**

The remit and coverage of SIGMM is broad and dynamic as can be seen by the range of our conferences and publications, and the topic areas covered within those activities. Broadly, SIGMM activities cover 4 categories of (a) multimedia systems-networking, (b) multimedia security and privacy, (c) multimedia content analysis, retrieval, and search, (d) multimedia interfaces and applications. These areas have remained core to SIGMM for many years and yet each continues to develop and mature and those developments impact and influence many aspects of our world. To illustrate how active these areas are, during this 12-month reporting period, there were 814 published papers from SIGMM-sponsored events added to the ACM Digital Library.

In summary, SIGMM has a broad and healthy series of conferences and workshops which are well-attended and from which there are very many scientific publications, our resources in terms of financial reserve are also healthy, and our area remains an important contributor to society.

1. **Describe your efforts related to Diversity, Equity, and Inclusion.**

SIGMM appointed a Director of Diversity and Outreach in 2019 who is a full member of the SIGMM executive committee with a strong remit to introduce initiatives in support of diversity, equity and Inclusion. In 2020 the SIGMM Executive Committee approved a strategy to increase the participation of women in SIGMM and all its activities. This strategy aims at increasing the participation of women in all activities and committees of SIGMM to at least 25% by 2025. Called “25 in 25”, the performance of SIGMM towards the goals set out in the strategy, are considered each year by the SIGMM Executive.

As two examples of new initiatives derived from this, SIGMM centralized student travel to all our SIGMM-sponsored conferences meaning there is a consistent and equal process for application, selection, and approval of travel awards, as well as consistency in the amount of these awards, across all our conferences. In 2021 SIGMM introduced carer awards to support online attendees at SIGMM-sponsored conferences who may need additional funding for childcare or to care for an older relative, for example, in order to fully engage with an online event.

1. **Provide a list of awards and recipients**

SIGMM gives out four awards each year approved by ACM, and these were as follows:

* SIGMM 2020 award for **Outstanding Technical Contributions to Multimedia Computing, Communications and Applications**  was given to Dr. John R. Smith for his *outstanding, pioneering and continued research contributions in the areas of multimedia content analysis and retrieval and for outstanding and continued service to the multimedia community*.
* SIGMM 2020 **Rising Star Award** was given to **Liqiang Nie (聂礼强)** *for his significant contributions in data-driven multimodal learning and knowledge-guided multimodal reasoning*.
* SIGMM 2020 Outstanding PhD Thesis in Multimedia Computing Award was not given in 2020.
* The inaugural SIGMM Test of Time Paper Award is given annually and recognizes the authors of a paper published either 10, 11 or 12 years previously at an SIGMM sponsored or co-sponsored conference which has had the most impact and influence on the field of Multimedia and the winning paper was by Andrea Vedaldi and Brian Fulkerson. Vlfeat: An open and portable library of computer vision algorithms. In Proceedings of the 18th ACM International Conference on Multimedia, MM '10, page 1469-1472, New York, NY, USA, 2010.

An Honorable Mention was given to *Gabriel Takacs, Vijay Chandrasekhar, Natasha Gelfand, Yingen Xiong, Wei-Chao Chen, Thanos Bismpigiannis, Radek Grzeszczuk, Kari Pulli,* and *Bernd Girod*. Outdoors augmented reality on mobile phone using loxel-based visual feature organization. In Proceedings of the 1st ACM International Conference on Multimedia Information Retrieval, MIR '08, page 427-434, New York, NY, USA, 2008.  
  
In addition, a set of 16 papers published at SIGMM conferences each year prior to 2008 were recognised as Honourable Mentions, which could have been considered as strong candidates in their respective year of publication, if there had been an award for that year.

1. **List significant papers on new areas that were published in proceedings**

* The best paper at MULTIMEDIA 2020 was “PiRhDy: Learning Pitch-, Rhythm-, and Dynamics-aware Embeddings for Symbolic Music” by Hongru Liang, Wenqiang Lei, Paul Yaozhu Chan, Zhenglu Yang, Maosong Sun and Tat-Seng Chua;
* The best paper at ICMR 2020 was “Multimodal Analytics for Real-World News Using Measures of Cross-Modal Entity Consistency” by Eric Müller-Budack, Jonas Theiner, Sebastian Diering, Maximilian Idahl, Maximilian and Ralph Ewerth;
* The best paper at IH&MMSec 2021 was “Revisiting Perturbed Quantization” by Jan Butora and Jessica Fridrich;
* The best paper at Multimedia Asia 2020 was “Distilling Knowledge in Causal Inference for Unbiased Visual Question Answering” by Yonghua Pan, Zechao Li, Liyan Zhang, and Jinhui Tang;

1. **Describe conference activity**

SIGMM sponsored 5 conferences during this period, as follows:

* ACM MULTIMEDIA 2020, the SIGMM flagship conference, was held in October 2020 in Seattle, Washington, and online
* International Conference on Multimedia Retrieval (ICMR) was held in October 2020 in Dublin, Ireland, and online
* Multimedia Systems (MMSys) 2021 has been put back to September 2021 in Istanbul, Turkey and online
* Information Hiding and Multimedia Security (IH&MMSec) 2020 was held in June 2021 in Brussels, Belgium and online
* Multimedia Asia (MM Asia) 2020 was held in March 2021 in Singapore and online

These conferences were almost entirely online-only and despite this they attracted greater numbers of virtual attendees than would have been the case with face-to-face conferences. Each conference also had a number of associated workshops, varying from 4 to 5, up to 10 workshops in the case of MULTIMEDIA.   
  
In addition to these conferences, SIGMM has also announced a new conference called Mile High Video, which will commence in Denver, Colorado, in March 2022.

1. **Comment on special projects and non-conference programs that provided service to some part of your technical community**

* SIGMM had another of our annual calls for proposals for funding of special initiatives in January 2021. Many of these used to be for events at our (physical) conferences like lunches and breakfasts for women and for early career researchers but some were for support for technical activities which we were glad to help with. We regularly highlight the difficulties caused by a significant portion of our conference proceedings not being used as input into CSRankings, a metrics-based ranking of Computer Science institutions primarily in the US. Despite our best efforts we have not succeeded in doing this. Publishing at venues which are considered in CSRankings’ operation is important to much of our community so one of the initiatives we are funding is to develop a system to provide metrics-based analysis of papers at SIGMM-sponsored events and this should offer support to those looking for metrics-based evidence for their tenure and funding applications.

1. **A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.**

As with all SIGs the big issue for SIGMM is the move from physical to virtual conferences and other events and the knock-on effect that has on dissemination of scientific results, training and development of early career researchers, recognition of career progression and achievements at all levels, and SIG finances.

We are also heartened by the across-the-board rise in activity levels at online conferences where we are seeing large increases in the numbers of paper submissions and attendance levels. It appears that we will settle down and find the best way to do online events which maximizes payback for presenters and attendees. We may not be quite there yet, but we’re getting there.

Improving the diversity of the community continues to be an essential aspect to maintaining our importance and relevance, including diversity in gender, in geographical location, and in many other facets.

The availability of open datasets and grand challenge competitions held at our conferences and workshops has been a huge catalyst to the development of multimedia analysis, indexing, retrieval etc. and have, in turn, helped developments in machine learning which powers most of artificial intelligence these days. The imbalance caused by the fact that these datasets originate from the corporate sector remains as both an opportunity for us to do research on large real-world datasets otherwise unavailable to us, as well as being a threat to the balance between corporate influence and independence. There is no silver bullet solution to this but it is something we need to be aware of.

**SIGMOBILE FY'21 Annual Report**

# **July 2020 – June 2021**

**Submitted by: Marco Gruteser, Chair**

The purpose of ACM SIGMOBILE is to promote research and development by bringing together researchers and practitioners and fostering interest in the mobility of systems, users, data, and computing. SIGMOBILE will address the above spectrum of topics, sharing one common theme - mobility. The group's technical scope reflects the emerging symbiosis of portable computers and wireless networks, addressing the convergence of mobility, computing and information organization, its access, services, management, and applications.

In the past years, mobile computing has developed into a fast moving, topical, and exciting area of computer science and engineering. Supporting the mobile computing and wireless networking research community, SIGMOBILE sponsors multiple successful conferences and workshops (e.g., MobiCom, MobiSys, MobiHoc, SenSys, UbiComp, PerDis, SEC, and HotMobile) that are well attended by its members, and generating high-quality and widely cited publications. These are valuable services for SIGMOBILE’s members and the community, resulting in a strong Special Interest Group.

SIGMOBILE’s Executive Committee (EC) in this period comprised of:

* Chair: Prof. Marco Gruteser (Google / Rutgers University, New Brunswick, USA)
* Vice Chair: Prof. Jason Flinn (Facebook / University of Michigan, Ann Arbor, USA).
* Secretary: Prof. Giovanni Pau (Sorbonne Universite, France)
* Treasurer: Prof. Falko Dressler (TU Berlin, Germany)
* Past Chair: Prof. Suman Banerjee (University of Wisconsin, Madison, USA)

**Diversity, Equity, and Inclusion**

SIGMOBILE operates a program to broaden participation that involves several key activities: workshops designed for underrepresented groups, informal lunch meetings and mentoring, and student travel grants. To ensure coordination and stewardship of resources, SIGMOBILE is advised by its broadening participation committee. The role of the committee is to:

- Advise organizers and SIG officers on best practices regarding broadening participation

- Prioritize broadening participation-related funding requests within a given budget

- Develop measurable objectives for our broadening participation program and track its progress

- Help publicize SIGMOBILE’s activities (through website, email, Twitter, for example)

- Coordinate among the different activities and groups that SIGMOBILE sponsors

The committee members are Prof. Ana Aguiar (Univ. of Porto), Prof. Rajesh Balan (SMU), Prof. Katia Jaffres-Runser (IRIT), Prof. Robin Kravets (UIUC), and Dr. Thyaga Nandagopal (NSF).

The in-person activities that this program focused on in past years have been significantly impacted by COVID but we have replaced these activities with virtual ones where possible. In partnership with the N2Women group, we hosted virtual N2Women events at conferences (for example, at MobiSys 2021) to provide a forum for participants from underrepresented groups to network and discuss career questions. Meetings are organized by a graduate student under the mentorship of a senior researcher from the community. The graduate student is usually supported with a travel grant.

We also seized the opportunity that presented itself with virtual conferences to reach a much broader audience. We chose to offer free registration for most of our conferences and covered the costs of the conference largely through sponsorship funds. This removed barriers for participation and we observed significantly larger registrations counts as well as registrations from a broader set of geographic regions.

The SIGMOBILE student travel grant program usually co-sponsors student travel costs to SIGMOBILE conferences. Conference organizers are asked to explicitly consider the goal of broadening participation when selecting travel grant awardees. Since most of our virtual conferences offered free registration, the program did not disburse funds for these conferences but we did offer free registration through this program for those events that did charge a nominal registration fee. We used the remaining funds to seed a student community grants program that is detailed further under special projects.

In prior years, SIGMOBILE has also hosted mentoring dinner events and mentoring workshops at in person conferences. For example, last year SIGMOBILE took the opportunity to hold a version of a mentoring workshop started as the Asian Student Symposium on Emerging Technologies (ASSET) with MobiCom 2019 in Los Cabos, Mexico. About ~20 local students were selected for the workshop, coupled with significant SIGMOBILE travel grant that enabled the students to also attend the main conference and further network with the community. Generally, the goal of ASSET is to empower students from developing countries and regional universities with technical writing, speaking, and presentation skills and also allow them to experience a top-tier research conference. SIGMOBILE hopes to resume more in-person or hybrid conference activity next year and continue these mentoring efforts.

Budget permitting, SIGMOBILE also occasionally sponsors activities from partner organizations focused on broadening participation, such as the CRA-W conference.

**Awards**

SIGMOBILE has a number of awards that it bestows on community members. In addition to the Outstanding Contributions Award (OCA) for career-long achievements, the Rockstar award for early career achievements, the Distinguished Service Award for service to the community, the Doctoral Dissertation Award for best PhD work in the field, the The Test of Time award for papers that had a significant influence in the community, and various best paper awards at the leading conferences. In addition, SIGMOBILE also recognizes some of the best work in the current year, as identified by a selection committee, as the Research Highlights of SIGMOBILE.

Some of the notable award winners are mentioned below.

**Outstanding Contributions Award**: Not given.

**Distinguished Service Award**: Not given.

**Rockstar Award**: Prof. Aruna Balasubramanian (SUNY Stony Brook), in recognition of her significant contributions in the areas of mobile systems and mobile Web performance, and her mentoring and leadership efforts in improving diversity in the SIGMOBILE community.

**Dissertation Award**: Dr. Rajalakshmi Nandakumar for the dissertation entitled "Computational Wireless Sensing at Scale” at the University of Washington. Runner Up: Dr. Tingjun Chen for the dissertation entitled "Algorithms and Experimentation for Future Wireless Networks: From Internet-of-Things to Full-Duplex” at Columbia University.

The **SIGMOBILE Test of Time award** was selected by a committee chaired by Prof. Prabal Dutta. The committee comprising Prof. Swarun Kumar (Carnegie Mellon University), Dr. Z. Morley Mao (Google), Dr. Lama Nachman (Intel), Dr. James Scott (Microsoft), Prof. Xia Zhou (Dartmouth College) selected the following articles:

* "Achieving Single Channel, Full Duplex Wireless Communication," Jung Il Choi, Mayank Jain, Kannan Srinivasan, Philip Levis, and Sachin Katti, MobiCom: The 16th Annual International Conference on Mobile Computing and Networking, Sep. 2010.
* "Full-Duplex Wireless Communications Using Off-The-Shelf Radios: Feasibility and First Results,"

Melissa Duarte and Ashutosh Sabharwal, Asilomar Conference on Signals, Systems, and Computers, Dec. 2010.

* + Citation (for both papers): Full-duplex has been a long-standing open problem in wireless networking — can we design wireless radios that transmit and receive at the same time and frequency without interference? These two papers demonstrated the feasibility of practical full-duplex systems, spawning an entirely new area for research exploration. In doing so, they have delivered strong impact on academia and influenced industry deployments of next-generation wireless systems.
* IBM's Linux Watch: The Challenge of Miniaturization," Chandra Narayanaswami, Noboru Kamijoh, Mandayam Raghunath, Tadanobu Inoue, Thomas Cipolla, Jim Sanford, Eugene Schlig, Sreekrishnan Venkiteswaran, Dinakar Guniguntala, Vishal Kulkarni, and Kazuhiko Yamazaki, IEEE Computer, Vol. 35. No. 1, January 2002.
  + Citation: IBM’s Linux Watch was truly ahead of its time, and the recent proliferation of Linux-based smart watches demonstrates the ongoing relevance of this work. This multi-year, cross-disciplinary research resulted in a wide set of contributions that are found in many of today’s personal devices, including innovations such as a 740dpi OLED screen, being the most miniaturized Linux device at the time, now-standard power-saving techniques in hardware and software, and interaction advances for bezel and touch UX. This work showcases the value of having a challenging real-world goal motivating research, as such a goal excites and enables advances that have useful and long-term impact.

**Significant Papers (Research Highlight Papers)**

The SIGMOBILE research highlights committee chaired by Prof. Heather Zheng selected the following papers as papers that combine a broad appeal with significant results.

Hummingbird: Energy Efficient GPS Receiver for Small Satellites, MobiCom 2020. <https://dl.acm.org/doi/10.1145/3372224.3380886>

<https://www.youtube.com/watch?v=gwUB-tchXFg>

* Global Positioning System is a widely adopted localization technique. With the increasing demand for small satellites, the need for a low-power GPS for satellites is also increasing. To enable many state-of-the-art applications, the exact position of the satellites is necessary. However, building low-power GPS receivers which operate in low earth orbit pose significant challenges. This is mainly due to the high speed (~7.8 km/s) of small satellites. While duty-cycling the receiver is a possible solution, the high relative Doppler shift between the GPS satellites and the small satellite contributes to the increase in Time To First Fix (TTFF), thus increasing the energy consumption. Further, if the GPS receiver is tumbling along with the small satellite on which it is mounted, longer TTFF may lead to no GPS fix due to disorientation of the receiver antenna. In this paper, we elucidate the design of a low-cost, low-power GPS receiver for small satellite applications. We also propose an energy optimization algorithm called F3to improve the TTFF which is the main contributor to the energy consumption during cold start. With simulations and in-orbit evaluation from a launched nanosatellite with our μGPS and high-end GPS simulators, we show that up to 96.16% of energy savings (consuming only ~ 1/25th energy compared to the state of the art) can be achieved using our algorithm without compromising much (~10 m) on the navigation accuracy. The TTFF achieved is at most 33 s.

Zero-Wire: A Deterministic and Low-Latency Wireless Bus Through Symbol-Synchronous Transmission of Optical Signals, SenSys 2020

<https://dl.acm.org/doi/10.1145/3384419.3430897>

<https://youtu.be/Ckn1Wln4Utc>

* The performance dichotomy between wired and wireless networks for the Internet of Things primarily arises from the inherent complexity and inefficiency of networking abstractions such as routing, medium access control and store-and-forward packet switching. This paper aims to enable a new class of latency-sensitive applications by breaking all three of these abstractions to deliver a performance envelope that resembles that of a wired bus in terms of deterministic latency and throughput. The essence of this approach is a novel networking paradigm for optical wireless communication, referred to as a symbol-synchronous bus, wherein a mesh of nodes concurrently transmit LED-based signals. This paper realises the paradigm within a platform called Zero-Wire and evaluates it on a 25-node testbed under laboratory conditions. Key end-to-end performance measurements on this physical prototype include 19 kbps of contention-agnostic goodput, interface-level latency under 1 ms for two-byte frames across four hops, jitter on the order of 10s of μs, and a base reliability of 99%. These first results indicate a bright future for the under-explored area of optical wireless mesh networks in delivering ubiquitous connectivity through a simple and low-cost physical layer.

AuraRing: Precise Electromagnetic Finger Tracking, UbiComp 2020

<https://dl.acm.org/doi/10.1145/3369831>

<https://www.youtube.com/watch?v=Nv1-NcKu6sc>

* Wearable computing platforms, such as smartwatches and head-mounted mixed reality displays, demand new input devices for high-fidelity interaction. We present AuraRing, a wearable magnetic tracking system designed for tracking fine-grained finger movement. The hardware consists of a ring with an embedded electromagnetic transmitter coil and a wristband with multiple sensor coils. By measuring the magnetic fields at different points around the wrist, AuraRing estimates the five degree-of-freedom pose of the ring. We develop two different approaches to pose reconstruction---a first-principles iterative approach and a closed-form neural network approach. Notably, AuraRing requires no runtime supervised training, ensuring user and session independence. AuraRing has a resolution of 0.1 mm and a dynamic accuracy of 4.4 mm, as measured through a user evaluation with optical ground truth. The ring is completely self-contained and consumes just 2.3 mW of power.

PolymoRF:Polymorphic Wireless Receivers Through Physical-Layer Deep Learning, MobiHoc 2020

<https://dl.acm.org/doi/10.1145/3397166.3409132>

* Today's wireless technologies are largely based on inflexible designs, which makes them inefficient and prone to a variety of wireless attacks. To address this key issue, wireless receivers will need to (i) infer on-the-fly the physical-layer parameters currently used by transmitters; and if needed, (ii) change their hardware and software structures to demodulate the incoming waveform. In this paper, we introduce PolymoRF, a deep learning-based polymorphic receiver able to reconfigure itself in real time based on the inferred waveform parameters. Our key technical innovations are (i) a novel embedded deep learning architecture, called RFNet, which enables the solution of key waveform inference problems; (ii) a generalized hardware/software architecture that integrates RFNet with radio components and signal processing. We prototype PolymoRF on a custom software-defined radio platform, and show through extensive over-the-air experiments that PolymoRF achieves throughput within 87% of a perfect-knowledge Oracle system, thus demonstrating for the first time that polymorphic receivers are feasible.

**Conference Activity**

The community held virtual editions of the MobiCom, MobiSys, MobiHoc, SenSys, UbiComp, SEC, and HotMobile conferences over the past year.

The 22nd The International Joint Conference on Pervasive and Ubiquitous Computing (Ubicomp) was held Sep 12-17 organized by general chair Monica Tentori (CICESE, Mexico), Nadir Weibel (UC San Diego), and Kristof Van Laerhoven (University of Siegen, Germany) as well as technical program chairs Gregory Abowd (Georgia Tech) and Flora Salim (RMIT, Australia).

The 26th Annual International Conference on Mobile Computing and Networking (MobiCom 2020) was held 21-25 Sep 2020 organized by general chairs Jon Crowcroft (University of Cambridge and Hamed Haddadi (Imperial College London) as well as technical program chairs Qian Zhang (HKUST) and Bozidar Radunovic (Microsoft).

The International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (MobiHoc 2020) was held Oct 11-14 organized by general chairs Eylem Ekici (The Ohio State University) and Tommaso Melodia (Northeastern University) as well as technical program chairs Alhussein Abouzeid (Rensselaer Polytechnic Institute) and Minghua Chen (The City University of Hong Kong).

The Fifth ACM/IEEE Symposium on Edge Computing (SEC) was held Nov 11-13 organized by general chair Ming Zhao (Arizona State University) and Haris Volos (DENSO) as well as technical program chairs John Kubiatowicz (University of California, Berkeley) and Shahrokh Daijavad (IBM).

The 18th ACM Conference on Embedded Networked Sensor Systems (SenSys 2020) was held Nov 16-19 organized by general chairs Jin Nakazawa (Keio University) Polly Huang (National Taiwan University) as well as technical program chairs Pei Zhang (Carnegie Mellon University) and Marco Gruteser (Google / Rutgers University).

The 22nd International Workshop on Mobile Computing Systems and Applications (ACM HotMobile 2021) was held Feb 24-26 organized by general chair Mirco Musolesi (University College London and Univ of Bologna) as well as technical program chair Junehwa Song (KAIST).

The organizers of the International Symposium on Pervasive Displays (PerDis) decided not to hold a virtual or physical event in the past year but published the accepted papers from the 2020 edition in the digital library.

The conferences experimented with different registration fee models, conference schedules, and tools for facilitating networking during virtual conferences. Many conferences offered free registration, while some chose to charge a nominal registration fee to cover costs. Conference schedules ranged from our conventional 5 day model, over a reduced half-day model, to a 2nd (replay) track to accommodate audiences in a different time zone. Conferences adopted the gather.town tool to facilitate networking in small groups.

**Special Projects and Programs**

SIGMOBILE celebrated its 25th anniversary this year and organized a virtual celebratory event, a panel reflecting on the past 25 years at the MobiSys 2021 conference and a gift for members to commemorate this milestone. The “Reflections on SIGMOBILE in its 25th year” panel was moderated by Roy Want (Google) and provided an opportunity for SIGMOBILE pioneers Victor Bahl (Microsoft), Mary Baker (HP), Nigel Davis (Lancaster University), and P.R. Kumar (Texas A&M) to reflect on accomplishments and lessons from the past as well as opportunities for the future.

To help support the next generation of mobile computing researchers and tighten community connections during the continued pandemic, SIGMOBILE has made available student community grants. These grants are funded by reallocating funds from student travel grants that SIGMOBILE was unable to disburse during the pandemic and funded through SIGMOBILE’s Mobile Computing Research Community Fund mechanism. For details, please consult the [solicitation](https://www.sigmobile.org/grav/get-involved/community-grant). The program awarded an initial set of three grants:

* "SIGMOBILE Community Engagement Program", Mallesham Dasari, Prerna Khanna, Tanmay Srivastava (SUNY Stony Brook), and Hyunjong Lee (Univ of Michigan)
* "Open 5G Forum", Michele Polese, Northeastern University.
* "Facilitating Open-Access Millimeter-wave and Massive MIMO Research

in the COSMOS and ORBIT Testbeds", Zhenzhou Qi, Duke University.

Use of SIGMOBILE’s YouTube [channel](https://www.youtube.com/channel/UCphR-rPFRLhsQNElk2dSbtw) has risen sharply and become even more impactful with the shift to virtual conferences. With speaker approval, recordings from our major conferences and workshops are archived on this channel. This content is publicly available and anyone can now watch the talks from our conferences at their convenience. Engagement on this channel shows a 280% increase in views and over 600 new subscribers compared to the prior year. Many of our viewers are from countries that are traditionally underrepresented at our conferences, including Asia and Latin America. This channel thereby allows us to reach many more constituents than our conferences and workshops currently do.

SIGMOBILE continues to invest in GetMobile, SIGMOBILE’s significantly transformed quarterly publication, which is a revamped version of the ACM SIGMOBILE Mobile Computing and Communications Review (MC2R). Each issue of GetMobile consists of a set of regular sections curated by a committed group of editors and has won a lot of praise from the broad community for improved quality of content and articles. GetMobile added several great young editors over the past few issues. The magazine’s content remains excellent thanks to the editors’ effort under the leadership of Landon Cox and the incredible staff of Donna Paris and JoAnn McHardy.

**Key issues facing the community**

We were fortunate that the community came together around our virtual events and that financial losses due to commitments made before the pandemic were largely avoided thanks to the hard work of conference organizers with ACM and SIGMOBILE support and the flexibility that our venue and hotel partners offered. Having operate fully virtually for over a year, we hear from many community members who are longing to gather at in-person or hybrid conferences again but we have also experienced the broader reach of virtual conferences. The key question surrounding our community is therefore developing a conference model that will serve the community well for the next decade.

**Summary**

Mobile computing and wireless networking are continuing to be important, high-impact fields within computer science and engineering, and as a result SIGMOBILE continues to be a strong, successful, well-supported organization.

The SIG’s conferences and workshops operated virtually, mostly with free registration, and achieved unprecedented reach. The community continues to create significant impact both technically and to the broader society through research, education, and other activities.

**SIGOPS Annual Report**

**July 2020 – June 2021**

**Submitted by: Shan Lu, Chair**

SIGOPS addresses a broad spectrum of issues associated with operating systems research and development. Although many of the members are drawn from industry, academic and government professionals are also represented in the membership.

**Overview**

This was the second year for Shan Lu (University of Chicago) as Chair, Phillip Stanley-Marbell (University of Cambridge) as vice-chair, and Brad Karp (University College London) as Secretary-Treasurer. All three of us are happy and look forward to continuing our service to SIGOPS for a second term.

SIGOPS has three chapters, EuroSys, SIGOPS de France, and ChinaSys, that are continuing well.

SIGOPS publishes a newsletter, *Operating Systems Review (OSR)*, which focuses on specific research topics or research institutions, manages an electronic mailing list, curates an on-line SIGOPS blog, and maintains a web site: <http://www.sigops.org/>.

The current co-editors of Operating System Review are Christopher J. Rossbach (The University of Texas, Austin) and Kishore Pusukuri (Santa Clara University). They have just finished the latest issue of OSR covering special topics on “Graph Computing” (Volume 55, Number 1, July 2021).

SIGOPS encourages participation in conferences and career building activities for young members of the community. For example, substantial funding was offered by SIGOPS to sponsor CRA-W Grad Cohort Workshop for Women and Workshop for Inclusion, Diversity, Equity, Accessibility, and Leadership Skills. Unlike previous years, all conferences have been virtual and hence do not impose any travel cost for student attendees. SIGOPS has helped all its conferences to offer low registration fees ($0 in some cases) to student attendees.

**Awards**

The SIGOPS Dennis M. Ritchie Doctoral Dissertation Award 2020 committee was run by Nickolai Zeldovich (Chair, MIT), Haibo Chen (Shanghai Jiaotong University), and Lidong Zhou (Microsoft). The award went to Natacha Crooks’s "A client-centric approach to transactional datastores" (UT Austin), advised by Lorenzo Alvisi and Simon Peter. Victor van de Veen ([Vrije Universiteit Amsterdam](https://en.wikipedia.org/wiki/Vrije_Universiteit_Amsterdam)) was the recipient of the EuroSys Roger Needham Ph.D. Award 2021; Dr. Pengfei Zuo (Huazhong University of Science and Technology) were the recipient of ChinaSys Doctoral Dissertation Award (he is also one of the two recipients of the ACM China Doctoral Dissertation Award!) and Dr. Zidong Du (Chinese Academy of Science) were the recipients of the ChinaSys Rising Star Awards (he is also one of the two honorable mentions of the ACM China Rising Star Awards).

The Mark Weiser Award 2020 was awarded to Jason Flinn, University of Michigan/Facebook. The committee consisted of Robert Morris (Chair, MIT), Yuanyuan Zhou (UCSD), Andrea Arpaci-Dusseau (UWisc).

SIGOPS Hall of Fame Awards that honor the most influential papers that appeared in SIGOPS conferences at least ten years in the past went to “*TaintDroid: An Information-Flow Tracking System for Realtime Privacy Monitoring on Smartphone*[*s*](https://dl.acm.org/doi/10.5555/1924943.1924971)*”,* which was published at OSDI 2010 from Penn. State University, Duke University, and Intel Lab, and *“The Multikernel: A New OS Architecture for Scalable Multicore Systems”,* which was published at SOSP 2009 from ETH and Microsoft. The selection committee was run by Tom Anderson (UWashington), Remzi Arpaci-Dusseau (UWisconsin), and Brad Chen (Google).

**Conferences**

* SOSP 2021 was scheduled to be held in Germany in October 2021. In March 2021, the organizing committee made the decision to move it to be held virtually. The German based organizing committee will instead organize SOSP 2023, and we luckily got the help from Anthony Joseph (U.C. Berkeley) to serve as the new General Chair, with Vijay Chidambaram (UTexas), Jialin Li (National Univ. of Singapore), and Tianyin Xu (UIUC) serving as the new virtual platform chairs.
* SIGOPS will continue the tradition to sponsor a Diversity workshop at SOSP 2021. This year’s Diversity workshop will be co-chaired by Amy Tai (VMware) and Natacha Crooks (U.C. Berkeley).
* The SIGOPS Asia-Pacific Workshop on Systems(APSys) will be held in August 2021 virtually, chaired by Xiaosong Ma (Qatar Research Institute) and Haryadi Gunawi (UChicago). APSys is 100% sponsored by SIGOPS.
* HotOS 2021 has been successfully held in May virtually, chaired by Eddie Kohler (Harvard) and Baris Kasikci (UMichigan) with Sebastian Angel (UPenn) serving as the general chair.
* HotStorage used to be a workshop sponsored by the USENIX organization. Starting from this year, it is sponsored by ACM SIGOPS instead for a 3-year experiment period. The first instance of ACM HotStorage was held successfully in late July.
* A few other SIGOPS sponsored or co-sponsored conferences have successfully been held virtually: SYSTOR 2021 (fully sponsored by SIGOPS); EuroSys 2021 (co-sponsored with EuroSys); ASPLOS 2021 (co-sponsored with SIGARCH and SIGPLAN); VEE 2021 (co-sponsored with SIGPLAN); PODC (co-sponsored with SIGACT), SOCC (co-sponsored with SIGMOD), SenSys (co-sponsored with SIGMOBILE, SIGCOMM, SIGARCH, SIGMETRICS, and SIGBED).
* In-cooperation events included Usenix events FAST 2021, NSDI 2020, and OSDI 2021.

**Some of the Recent Initiatives**

* A number of initiatives that were started in recent SOSPs are on their way to continue in SOSP 2021.
  + Artifact evaluation will be conducted for the second time at SOSP 2021 (https://sysartifacts.github.io/), chaired by Robert Ricci (Utah), Ivo Jimenez (UCSC), and Dan Ports (Microsoft).
  + Student Research Competition will be co-chaired by Baris Kasikci (University of Michigan), Aurojit Panda (New York University).
* Since the establishment of SIGOPS CARES committee (Commitee to Aid Reporting on Discrimination and Harassment Policy Violations) <http://www.sigops.org/cares/>, the committee has since made its presence at APSys 2021 and EuroSys 2021. It will plan to conduct an inclusion survey and offer an inclusion session at SOSP 2021, led by the chair Dilma da Silva (Texas A&M).
* SIGOPS has formed its Communications of ACM Research highlight selection committee, run by Jeff Mogul (Google), Lorenzo Alvisi (Cornell), and Jinyang Li (NYU). They are working on pushing through the first batch of two SIGOPS Research Highlights papers now.
* Since the start of SIGOPS Blogs (<https://www.sigops.org/blog/>) last year, 9 original articles have been posted in the last 12 months. Tianyin Xu (UIUC), Akshitha Sriraman (CMU), Zhaoguo Wang (Shanghai Jiaotong University) and Baris Kasikci (UMichigan) currently serve as the Chief Editors.
* We have just launched the Youtube Channel of SIGOPS (<https://www.youtube.com/channel/UC6jgDZsRWpE9uJKe202F0iw>)

**Key issues to deal with**

* How to broaden participation and promote inclusion remains a key issue. SIGOPS has worked on this through various types of Diversity Workshops, travel grant programs, and others. However, more effort is needed
* The pandemic continues to affect our conferencing scheme. People are growing tired of the virtual conferences and are hoping to interact in person. We may start thinking about having hybrid conferences and it seems like a logistic challenge to carry that out.
* There have been concerns regarding the frequency and acceptance rate of SIGOPS’ flagship conference, SOSP. There is an on-going discussion about whether we should change the frequency of this conference, currently once every other year, without affecting its high quality.

**SIGSAC Annual Report**

**July 2020 - June 2021 Submitted by: Ninghui Li & XiaoFeng Wang**

1. Comment on the ways in which the SIG is a healthy and viable organization

In the past year, despite the ongoing pandemic, SIGSAC has successfully organized high-impact conferences (see below), made multiple awards to celebrate excellence and continued to support the community (e.g., organizing the election for selecting SIGSAC leaderships).

2. Describe your efforts related to Diversity, Equity, and Inclusion.

SIGSAC sponsored the imentor workshop: https://sites.google.com/vt.edu/imentor20/, which aims at attracting, mentoring, and career advising early-stage graduate students from underrepresented communities who want to pursue a career in computer security.

ACM CCS, the flagship SIGSAC conference, selected a female program co-chair to the lead the conference for 2020 and 2021.

Also last year’s SIGSAC outstanding innovation award is won by Dr. Dawn Song, a woman security researcher and a well-recognized leading innovator in the community.

3. Provide a list of awards and recipients

SIGSAC Outstanding Innovation Award: Dawn Song

SIGSAC Outstanding Contributions Award: Trent Jaeger

SIGSAC Doctoral Dissertation Award Winner: Victor van der Veen

SIGSAC Doctoral Dissertation Award Runners-Up:

Marc Juarez Miro

Frank Li

4. List significant papers on new areas that were published in proceedings

Keyu Man, Zhiyun Qian, Zhongjie Wang, Xiaofeng Zheng, Youjun Huang, Haixin Duan, DNS Cache Poisoning Attack Reloaded: Revolutions with Side Channels, ACM SIGSAC CCS 2020

5. Describe conference activity

In the past year, SIGSAC has sponsored the following conferences:

* CCS: ACM Conference on Computer and Communications Security, 1993 onwards
* SACMAT: ACM Symposium on Access Control Models and Technologies, 1995 onwards
* ASIACCS: ACM Symposium on Information, Computer and Communications Security, 2006 onwards
* WiSec: ACM Conference on Security and Privacy in Wireless and Mobile Networks, 2008 onwards
* CODASPY: ACM Conference on Data and Application Security and Privacy, 2011 onwards

6. Comment on special projects and non-conference programs that provided service to some part of your technical community

7. A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.

A main challenge we are facing in the years to come is change of the conference model. After the pandemic, there is a discussion on whether to move toward hybrid conferences, which could have impacts on the attendees and on necessary revenues to ensure finance balance. We would like to learn from other SIG communities their experience on this issue.

**SIGSIM Annual Report**

**July 2020 – June 2021**

**Submitted by: Kalyan Perumalla, SIGSIM Chair**

1. Comment on the ways in which the SIG is a healthy and viable organization

SIGSIM continues to be active with research community involvement and healthy with good fiscal reserves and planning. Multiple conferences continue to be operated under the aegis, co-sponsorship, or in-cooperation with SIGSIM. Office bearers are elected by members once every two years. Member meetings, increased in frequency recently from once-a-year to twice-a-year, are continuing to enhance member engagement. Web presence and social networking are being reemphasized. Additional volunteering activities and positions are in the process of being developed (ref. slides of members’ meeting under item #6 below). While some senior researchers in the SIGSIM community are on their path to retirement, the challenge of infusing new, early career participants is actively being given consideration. On the ACM Digital Library, SIGSIM is maintaining good counts of article downloads. New committees are being explored to be set up to capitalize on the new opportunities for simulation, such as integration with artificial intelligence (AI), machine learning (ML), digital twins (DT), lunar and Mars mission simulations, and so on. Overall, SIGSIM remains fairly viable, financially stable, and active.

1. Describe your efforts related to Diversity, Equity, and Inclusion.

SIGSIM is renewing focus on diversity, equity, and inclusion. For instance, this year’s committees are making intentional efforts such as reaching out to researchers beyond developed countries. COVID-related virtual participation and low conference fees are being converted to opportunities by tapping contributors and keynote speakers from under-represented countries.

1. Provide a list of awards and recipients
   1. The SIGSIM Distinguished Contributions Award was announced at the 2020 Winter Simulation Conference to Dr. Ernest Page of MITRE (USA) and laudatio delivered at the SIGSIM Members (Virtual) Meeting in January 2021.
   2. WSC PhD Colloquium Award was given to Thomas Voss for the paper “Dynamically Changing Sequencing Rules with Reinforcement Learning in a Job Shop System with Stochastic Influences”
   3. Due to Covid-19, the ACM SIGSIM-PADS Conference scheduled for Suffolk, VA in May/June was held online. Therefore, registration discounts were provided but no travel awards were made to PhD students
2. List significant papers on new areas that were published in proceedings
   1. *New AI techniques applied to urban simulation methods and road traffic models*: 2021 SIGSIM PADS Best Paper “Data-driven Microscopic Traffic Modelling and Simulation using Dynamic LSTM” by Htet Naing, Wentong Cai, Nan Hu, Tiantian Wu, Liang Yu (Singapore)
   2. *New Machine Learning applied to network simulations*: 2020 MSWiM Best Paper “A Mixture Density Channel Model for Deep Learning-Based Wireless Physical Layer Design,” by Dolores Garcia Marti, Jesus Omar Lacruz, Joan Palacios Beltran and Joerg Widmer (Spain)
   3. *New Mathematical analysis of agent-based simulation*: 2021 SIGSIM PADS Best Paper Finalist “Differentiable Agent-Based Simulation for Gradient-Guided Simulation-Based Optimization,” by Philipp Andelfinger (Germany)
3. Describe conference activity
   1. PADS’21: Fully sponsored by SIGSIM, held virtually (originally Suffolk, VA)
   2. MSWiM’20: Fully sponsored by SIGSIM, held virtually (originally Alicante, Spain)
   3. WSC’20: Partially sponsored by SIGSIM, held virtually
   4. DS-RT’20: Partially sponsored by SIGSIM, held virtually (originally Prague, Czech Republic)
   5. SimAUD’21: In-cooperation with SIGSIM, held virtually (originally Vienna, Austria)
4. Comment on special projects and non-conference programs that provided service to some part of your technical community
   1. The Modeling and Simulation Knowledge Repository (MSKR) has been supported by SIGSIM and hosted for the community
   2. “Pioneers of Simulation” interaction group has been started as community resource to tap into the expertise and experience of past M&S giants
   3. Special committee on Space Simulations is being formed for bringing new researchers and activities in federated simulation technologies for space models such as lunar and Mars missions
   4. SIGSIM PADS joined the ACM Reproducibility Initiative in 2019 by successfully creating reproducibility committees to evaluate papers. This effort has been continued again this year and is being explored for expansion into other SIGSIM-sponsored conferences
   5. SIGSIM holds two members/business meetings every year, open to all its members. Information about the most recent meeting and associated slides are available here: [Members Meeting Agenda](https://sigsim.acm.org/meetings/meeting-january-29-2021/) | [Members Meeting Slides](https://sigsim.acm.org/wp-content/uploads/2021/02/2021-01-29-acm-sigsim-presentation.pdf)
5. A summary of the key issues that SIG membership will have to deal with in the next 2-3 years.
   1. SIGSIM remains fairly active. Nevertheless, we can do more with maintaining and/or increasing the student membership.
   2. There is a mixture of challenge and opportunity with respect to emerging technologies (such as AI/ML and Digital Twins) that needs to be carefully tracked.
   3. We are opening new descriptions of named volunteering activities for which students would apply to be selected to serve and get recognized for their efforts. This is envisioned to provide a win-win equation to the SIG and upcoming students.
   4. There is potential for coordinating SIGSIM even more with other professional bodies, such as ASME and INFORMS Simulation Society, in the spirit of synergetic collaboration (and make intentional efforts to avoid competition). We are just beginning to pursue some of those synergies, but more can be done.

**SIGSOFT Annual Report**

**July 2020 – June 2021  
Submitted by: Thomas Zimmermann, Chair**

*SIGSOFT seeks to improve our ability to engineer software by stimulating interaction among practitioners, researchers, and educators; by fostering the professional development of software engineers; and by representing software engineers to professional, legal, and political entities.*

This report provides a summary of key SIGSOFT activities over the past year. Despite the COVID-19 pandemic, the software engineering community had a strong technical year with many significant contributions and SIGSOFT remains healthy both in terms of membership and finances SIGSOFT sponsors 10+ conferences each year with several thousand attendees. To support its community SIGSOFT has invested into several efforts related to diversity, equity, and inclusions as well as into special project and non-conference programs.

Efforts related to Diversity, Equity, and Inclusion

Several events or programs were focused on broadened participation either geographically, or among under-represented members of our community

* SIGSOFT has a dedicated task force for diversity and inclusion.
* Conferences have dedicated diversity and inclusion programs, that includes, special lunches (e.g., LGBTIQ+), events for local college students, mentorship tables and circles.
* The major SIGSOFT conferences have EDI chairs, and there are guidelines on the kinds of activities the chairs can initiate and run. The conferences also have Code of Conduct and a Conference Diversity and Inclusion Plan that is being finalized.
* SIGSOFT is creating a larger community of people who are regularly thinking about EDI subjects: EDI conference chairs, participants of diversity panels, conference participants (when subscribing to Code of Conduct or selecting pronouns), etc.
* There are dedicated travel support and conference attendance programs for members of underrepresented groups, students, or anyone who cannot afford the registration fees of a conference.
* To broaden the reach and membership, SIGSOFT has established national chapters in India (iSoft) and China (cSoft). Each chapter has a liaison on the SIGSOFT EC, in addition to our long-standing International Liaison.
* SIGSOFT supported a virtual software engineering school at the CBSOFT conference in Brazil as well as the CRA-WP Grad Cohort Workshops.

Awards and Recipients

The SIGSOFT awards program continues to recognize the many achievements of the software engineering community.

* The ACM SIGSOFT **Outstanding Research Award** was presented to **Prem Devanbu** (UC Davis) *“for profoundly changing the way researchers think about software by exploring connections between source code and natural language”*
* The ACM SIGSOFT **Influential Educator Award** was presented to **Katsuro Inoue** (Osaka University) *“for his life-long foundational contributions to software engineering education and his success in connecting generations of educators and researchers from Japan with the international community”*
* The ACM SIGSOFT **Distinguished Service Award** was presented to **Tao Xie** (Peking University) *“for outstanding service contributions to the software engineering community, including substantial activities on SIGSOFT history, broadening participation in software engineering, and successful chairing of technical events.”*
* The ACM SIGSOFT **Early Career Researcher Award** was presented to **Lingming Zhang** (University of Illinois at Urbana-Champaign) “for outstanding contributions to mutation testing, regression testing, fault localization, and program repair.”
* The ACM SIGSOFT **Outstanding Dissertation Award** was presented to **August Shi** (now University of Texas at Austin) for his Dissertation “Improving Regression Testing Efficiency and Reliability via Test-Suite Transformations” (University of Illinois at Urbana-Champaign, advisor: Darko Marinov)
* The ACM SIGSOFT/SIGBED **Frank Anger Memorial Award** was presented to **Sumaya Almanee** (UC Irvine). This is a student award in the name of the late Dr. Frank Anger that promotes cross-disciplinary research between embedded systems and software engineering.
* The ACM SIGSOFT **Impact Paper Award** recognizes a paper published in a SIGSOFT conference at least 10 years earlier that has had exceptional impact on research or practice. This year, the award went to the paper **Patterns of Property Specifications for Finite-State Verification** by **Matthew B. Dwyer, George S. Avrunin**, and **James C. Corbett** (ICSE 1999) *“for enabling widespread use of temporal logic for program verification by raising the level of abstraction to common patterns.”*

In addition to the Impact Paper Award, many SIGSOFT conferences also have **Most Influential Paper Awards**, also known as “test of time awards”, which are given to papers that have appeared at a particular conference. At ICSE the SIGSOFT co-sponsored conference with the longest track record of awarding Most Influential Papers, the award went to the ICSE 2011 paper “A Practical Guide for Using Statistical Tests to Assess Randomized Algorithms in Software Engineering”, by **Andrea Arcuri** and **Lionel Briand**. The ESEC/FSE conference recognized the paper “FUSION: A Framework for Engineering Self-Tuning Self-Adaptive Software Systems”, by **Ahmed M. Elkhodary, Naeem Esfahani,** and **Sam Malek**.

Many of SIGSOFT’s sponsored meetings also presented **Distinguished Paper Awards**. SIGSOFT allows up to 10% of the accepted papers to be selected for this award. The list of recognized papers is available at http://sigsoft.org/awards/distinguishedPaperAward.html

Significant Papers on New Areas

Software plays a prominent role in different application domains as well as other research areas in computer science, such as human-computer interaction, mobile computing, artificial intelligence, distributed systems, and more recently big data and machine learning. Everything depends on software today. As examples for the breadth of the software engineering field, we highlight below distinguished papers from the ESEC/FSE 2019 and ICSE 2020, two of the main general software engineering conferences sponsored by SIGSOFT.

The trend over the past few years to adopt machine learning (ML) and artificial intelligence (AI) in software has continued. This has led to research both on leveraging ML and AI to improve the way software is being built (AI4SE), but also to research that incorporate SE concepts into ML and AI processes and workflows (SE4AI). An increased emphasis has been placed on testing and debugging systems that are based on ML and AI.

* Traceability Transformed: Generating more Accurate Links with Pre-Trained BERT Models Jinfeng Lin, Yalin Liu, Qingkai Zeng, Meng Jiang, Jane Cleland-Huang (ICSE 2021)
* Deep Learning Library Testing via Effective Model Generation, by Z. Wang, M. Yan, J. Chen, S. Liu, D. Zhang (ESEC/FSE 2020)
* Detecting Numerical Bugs in Neural Network Architectures, by Y. Zhang, L. Ren, L. Chen, Y. Xiong, S. Cheung, T. Xie (ESEC/FSE 2020)
* On Decomposing a Deep Neural Network into Modules, by R. Pan, H. Rajan (ESEC/FSE 2020)

Automated analysis techniques such as program repair, test generation, and reproducing bugs continue to remain popular topics in the SE research community.

* A Principled Approach to GraphQL Query Cost Analysis, by A. Cha, E. Wittern, G. Baudart, J. Davis, L. Mandel, J. Laredo (ESEC/FSE 2020)
* Testing Self-Adaptive Software with Probabilistic Guarantees on Performance Metrics, by C. Mandrioli, M. Maggio (ESEC/FSE 2020)
* Hero: On the Chaos When PATH Meets Modules. Ying Wang, Liang Qiao, Chang Xu, Yepang Liu, Shing-Chi Cheung, Na Meng, Hai Yu, Zhiliang Zhu (ICSE 2021)
* Improving Fault Localization by Integrating Value and Predicate Based Causal Inference Techniques. Yigit Kucuk, Tim A. D. Henderson, Andy Podgurski (ICSE 2021)
* Interface Compliance of Inline Assembly: Automatically Check, Patch and Refine. Frédéric Recoules, Sébastien Bardin, Richard Bonichon, Matthieu Lemerre, Laurent Mounier, Marie-Laure Potet (ICSE 2021)
* JEST: N+1-version Differential Testing of Both JavaScript Engines and Specification. Jihyeok Park, Seungmin An, Dongjun Youn, Gyeongwon Kim, Sukyoung Ryu (ICSE 2021)
* Synthesizing Object State Transformers for Dynamic Software Updates. Zelin Zhao, Yanyan Jiang, Chang Xu, Tianxiao Gu, Xiaoxing Ma (ICSE 2021)

In recent years a strong focus was placed on better understanding software developers and improving their productivity, for example through fMRI studies or mining software data.

* Program Comprehension and Code Complexity Metrics: An fMRI Study. Norman Peitek, Sven Apel, Chris Parnin, André Brechmann, Janet Siegmund (ICSE 2021)
* Why don’t Developers Detect Improper Input Validation?'; DROP TABLE Papers; Larissa Braz, Enrico Fregnan, Gül Calikli, Alberto Bacchelli
* Automated Query Reformulation for Efficient Search Based on Query Logs from Stack Overflow. Kaibo Cao, Chunyang Chen, Sebastian Baltes, Christoph Treude, Xiang Chen (ICSE 2021)
* CodeShovel: Constructing Method-Level Source Code Histories. Felix Grund, Shaiful Alam Chowdhury, Nick Bradley, Braxton Hall, Reid Holmes (ICSE 2021)

Security remains an important focus area, especially given the rise of recent supply chain attacks.

* ATVHunter: Reliable Version Detection of Third-Party Libraries for Vulnerability Identification in Android Apps. Xian Zhan, Lingling Fan, Sen Chen, Feng Wu, Tianming Liu, Xiapu Luo, Yang Liu (ICSE 2021)
* Boosting Fuzzer Efficiency: An Information Theoretic Perspective, by M. Böhme, V. Manès, S. Cha (ESEC/FSE 2020)

Another emerging topic is how to design inclusive and healthy developer communities and how to improve well-being.

* What Makes a Great Maintainer of Open Source Projects? Edson Dias, Paulo Meirelles, Fernando Castor, Igor Steinmacher, Igor Wiese, Gustavo Pinto (ICSE 2021)
* "How Was Your Weekend?" Software Development Teams Working From Home During COVID-19. Courtney Miller, Paige Rodeghero, Margaret-Anne Storey, Denae Ford, Thomas Zimmermann (ICSE 2021)

The SIGSOFT community has a ten-year history of sharing research artifact and continues to improve its artifact evaluation processes.

* Community Expectations for Research Artifacts and Evaluation Processes, by B. Hermann, S. Winter, J. Siegmund (ESEC/FSE 2020)

We also like to highlight the first four SIGSOFT Research. Starting in 2020, SIGSOFT is selecting papers from its sponsored conferences that show recent, significant, and exciting results that are also of general interest to the computer science research community. These papers, called SIGSOFT Research Highlights, are also recommended for consideration for the Research Highlights section of the Communications of the ACM. The SIGSOFT Research Highlights Committee is chaired by Martin Robillard.

[A Tale from the Trenches: Cognitive Biases and Software Development](https://dl.acm.org/doi/10.1145/3377811.3380330)

S. Chattopadhyay, N. Nelson, A. Au, N. Morales, C. Sanchez, R. Pandita, and A. Sarma

**Venue:**ICSE 2020

**Nomination Statement:***Cognitive biases impact decision-making in many spheres of human activity, including software development. If left unchecked, cognitive biases can lead to negative outcomes which, in the case of software development, include inferior solutions and the need to reverse design decisions later in the development process. This paper presents the first field study of the effects of cognitive biases in software development. In contrast to prior work which was conducted in controlled environments, this study analyzed data primarily collected from software developers' daily work. The study offers a rich perspective on how cognitive biases manifest themselves in practice with insights for many stakeholders, including developers, their managers, and the builders of software development tools. These insights for improving software development tools and practices also have the potential to apply more broadly to the use of software technology in general.*

[Here We Go Again: Why Is It Difficult for Developers to Learn Another Programming Language?](https://doi.org/10.1145/3377811.3380352)

N. Shrestha, C. Botta, T. Barik, C. Parnin

**Venue:**ICSE 2020

**Nomination Statement:***It is not uncommon for programmers to have to learn a new programming language, yet relatively few resources exist to facilitate this transition. This study carefully documents why it is difficult for proficient programmers to learn a different language. The study effectively leverages two complementary sources of data: Stack Overflow posts and interviews with programmers. Through this synergy, it provides a rich illustration of how knowledge of one language can interfere with learning. The study also provides insights on the source of confusion caused by old habits and attempts at mapping between languages. The paper provides an important reminder that software technologies do not exist in isolation.*

[How does misconfiguration of analytic services compromise mobile privacy?](https://doi.org/10.1145/3377811.3380401)

X. Zhang, X. Wang, R. Slavin, T. Breaux, J. Niu

**Venue:**ICSE 2020

**Nomination Statement:***Popular mobile applications (apps) typically rely on a third-party analytic service to collect usage profiles data for their users. Analytics services present a privacy risk because their interface enables app developers to channel personally-identifiable information (PII) to the services. This paper reports on a deep technical investigation of how analytic services are used by popular apps with respect to privacy protection. Its findings are both clear and unsettling: over 12% of apps studied provide PII to their analytics services, in many cases in direct violation of the app's own privacy policy. These results have implications for practically all stakeholders of the mobile software ecosystem including, notably, most app users.*

[White-box fairness testing through adversarial sampling](https://doi.org/10.1145/3377811.3380331)

P. Zhang, J. Wang, J. Sun, G. Dong, X. Wang, X. Wang, J.S. Dong, and T. Dai

**Venue:**ICSE 2020

**Nomination Statement:***Deep neural networks (DNNs) have demonstrated their effectiveness in multiple important application contexts, from face recognition, to medical diagnosis, fraud detection, and others. Especially when DNNs work with human-related characteristics, it is of paramount importance to ensure that they show fair behavior. However, because of societal bias often occurring in the training data, the resulting DNNs may introduce discrimination unintentionally. To address this problem, the paper proposes a scalable approach for generating individual discriminatory instances of DNNs. By generating several instances, it is possible to retrain a DNN to reduce discrimination. The approach is evaluated by comparing it with other two from the state of the art. The evaluation is performed on three significant datasets and shows a more effective search space exploration as well as the possibility to generate a larger number of individual discriminatory instances using significant less time. This paper provides a contribution that is cross-cutting two disciplines, software engineering and machine learning, and paves the way toward improving the quality of DNNs and their usability in societal contexts.*

Conference Activity

Over the past year SIGSOFT sponsored/co-sponsored 10+ conferences related to software engineering. All conferences were held in virtual format due to the COVID-19 pandemic. We expect that physical/hybrid conferences will start again in 2022. The following is a list of some of the conferences.

* ASE: Automated Software Engineering Conference
* DEBS: International Conference on Distributed and Event-based Systems
* ESEC/FSE: Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering: held annually.
* ESEM: International Symposium on Empirical Software Engineering and Management
* ICPE: International Conference on Performance Engineering
* ICPC: International Conference on Program Comprehension
* ICSE: International Conference on Software Engineering
* ISSTA: International Symposium on Software Testing & Analysis
* MoDELS: International Conference on Model-Driven Engineering Languages and Systems
* MSR: International Conference on Mining Software Repositories
* SEAMS: International Symposium on Software Engineering for Adaptive and Self-Managing Systems
* SPLC: International Software Product Line Conference

Through the **Conference Aid Program for Students (CAPS),** SIGSOFT provided travel support to conferences for dozens of graduate and undergraduate student-members as well as support to defray the costs of childcare for all members of our community (faculty qualify as well). Due to the pandemic the CAPS format was extended to a virtual program. The program offered discount codes for complimentary registrations to attend the virtual ICSE 2021 and ESEC/FSE 2021 conference. The support was available for anyone who fit into one or more of the following categories:

* participants who identify as being a member of an underrepresented racial or ethnic group(s) in the place they work,
* participants based in low income and lower middle income countries as identified by the World Bank List of Economies,
* undergraduate students,
* SIGSOFT members (both student and professional), or
* members of the SE community who cannot afford the registration fee.

SIGSOFT continued the **Conference Surplus Reinvestment**, which was launched in FY19. The surplus reinvestment for Year N of a conference is 25% of the Conference Net from Year N-2 and 25% of the Conference Net from Year N-3. A limitation of the program is that it currently requires a significant administrative overhead.

Special Projects and Non-Conference Programs

Over the past several years, SIGSOFT has introduced several programs to aid and expand our membership. A signature programs are the Webinars. The SIGSOFT **Webinar series** remains very popular; in the past year, SIGSOFT organized webinars on topics such as deep learning, gender in open source, peer reviews, and program comprehension.

The **Software Engineering Notes** is now distributed exclusively in electronic form. The newsletter provides an update to the community about ongoing efforts as well as other reports.

The software engineering community has many community-driven vehicles to **promote open science** such as dedicated tracks for replications and negative results at conferences, policies for open science current draft is at: <https://github.com/acmsigsoft/open-science-policies>, and the ROSE festival <https://github.com/researchart/rose>, and pre-registered studies (e.g., MSR 2021, ICSME 2021 in partnership with the Empirical Software Engineering journal).

The task force on **Paper and Review Quality** focused on increasing the quality of our research papers and reviews, for example by developing guidelines on how to review certain types of papers.The task force has put together an initial draft of an Empirical Standards and Reviewer Field Manual that was released to the community. The report is available here: https://www.sigsoft.org/resources/improvingreview.html

Key Issues in the Next 2-3 Years

While SIGSOFT is stable and strong, there are several challenges SIGSOFT and the broader software engineering community will continue to face.

* Given the uncertainty of the COVID-19 pandemic, it is unknown when and how physical conferences will restart and what format they will have. This makes planning more complicated and adds extra work and anxiety to the conference organizers. SIGSOFT will do its best to support all conferences formats going forward.
* Despite a large growth of software engineers, SIGSOFT’s membership numbers have not been growing. We will aim to increase membership by providing more benefits to SIGSOFT members, increased visibility of SIGSOFT at conferences, and a focus on practitioners with the help of the industry liaison.

**SIGSPATIAL Annual Report**

**July 2020 - June 2021 Submitted by: Shawn Newsam, Chair**

# **1. Comment on the ways in which the SIG is a healthy and viable organization**

The core mission of SIGSPATIAL is to promote academic and industrial research that addresses issues related to the acquisition, management, and processing of spatial data and knowledge generation, with a focus on conceptual, design, algorithmic, geometric, visual, and systems implementations aspects.

Historically, the scope of SIGSPATIAL initially included geographic information systems (GIS), along with data storage, query processing, indexing and data mining. However, in recent years our scope diversified with interest from a variety of researchers and practitioners whose data sets have spatial information as the key enabling component for their systems, e.g., traffic systems, location-based social networks, ride sharing apps, IoT platforms, etc.

The categories of problems, as well as the plethora of novel solutions, address issues of high societal relevance in various application domains, arising due to the increasing availability of GPS data in ever-increasing numbers of mobile devices and smart phones. The use of navigation, routing and online mapping systems offered from companies such as ESRI, HERE, Microsoft (Bing Maps) and Google (Google Maps and Google Earth) in settings ranging from tourism, traffic management, emergency/disaster remediation, and agriculture only further accentuate the importance of the topics that define the main thrusts of the SIGSPATIAL conference and workshops. And, of course, spatial data analysis is key to studying pandemics such as COVID-19. More is said on this below.

SIGSPATIAL continues to offer an annual conference, focusing on high-quality research papers, along with systems, industrial, and vision papers. It also includes a set of diverse workshops, the numbers of which have been steadily growing (e.g., there were ten workshops collocated with the SIGSPATIAL 2020 conference). These are differentiated from other venues in the area by focusing on the computational and system aspects of the field rather than on the available commercial products.

A key aim of the SIGSPATIAL leadership is keeping the flagship conference – the ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL) – affordable and thus accessible. This way we believe it can continue to be of good value to its attendees and be competitive not only in quality but also price wise with related conferences. For example, the early registration fees for ACM SIGSPATIAL 2019 were only $400 for ACM members; $450 for non-ACM members; and $300 for students. And, for only an additional $100 more, the community can also attend any of the workshops that are collocated with the conference. ACM SIGSPATIAL 2020 was an online conference so the fees were structured differently. Author registration fees in 2020 were: $180 for ACM or SIGSPATIAL members; $200 for non-members $200; and $100 for students. Non-author registrations were free.

Achieving low fees has been made possible by active solicitation of sponsor contributions and a great deal of vigilance and active involvement of the Organizing Committee, from venue selection to many other logistics of the event. This, in turn, enables a reduced financial burden in terms of contractual obligations when planning the conference. In addition, it also enables a healthy build-up of our financial reserves.

International conference and journal rankings have gained importance in numerous academic circles in the last decade. On this front, in 2020, the SIGSPATIAL Executive Committee put significant effort into the ranking of our annual premier event, SIGSPATIAL Conference. We formed a subcommittee for this purpose led by our Vice-chair Egemen Tanin (University of Melbourne, Australia). The Computing Research and Education Association of Australasia (CORE) is the top organization for Australasian Computer Science academics that also manages a portal for international conference rankings ([portal.core.edu.au/conf-ranks).](https://protect-au.mimecast.com/s/Cm23CMwvygsqJz4D4Hk6_NB?domain=portal.core.edu.au) The subcommittee focused on this ranking system in 2020 as they had a call for re-rankings. We submitted a ranking application for the SIGSPATIAL Conference under this ranking scheme to the CORE organization in late 2020 and were awarded the rank of A which is given to only about 16% of all known international conferences in Computer Science. This result is now available in the CORE 2021 ranking report.

Our SIG membership remains strong. Below is a chart showing our total membership and breakdown into membership categories for 2008 to 2021.

Chart, bar chart, waterfall chart

Description automatically generated

We see a drop from FY 2020 to FY 2021, which is largely accounted for by decreased affiliate members. FY 2020 had an unusual increase in affiliate members, which we cannot explain. Barring this anomaly, we see an increase in total membership from FY 2019 to FY 2021. The biggest concern is student membership, which is not large compared to the number of students who attend our main conference, and the number of student memberships is not growing.

The SIGSPATIAL community has been very active in research related to the COVID-19 pandemic as spatial data and analysis of course play a big role in understanding many aspects of a contagious pandemic such as its source, its spread, etc. The March 2020 and July 2020 editions of our SIGSPATIAL Special Newsletter were special issues (parts 1 and 2) on Modeling and Understanding the Spread of COVID-19. We currently have two special issues underway of the ACM Transactions on Spatial Algorithms and Systems that are focused on the pandemic: 1) a special issue on Contact Tracing which is expected to be published at end of 2021; and 2) a special issue on Understanding the Spread of COVID-19 which is expected to be published early 2022. Finally, a number of papers at our ACM SIGSPATIAL 2020 conference and associated workshops focused on the pandemic. More details can be found in section 4 below on papers published on new areas.

# **2. Describe your efforts related to Diversity, Equity, and Inclusion.**

We have put significant effort over the past few years into promoting DEI among our leadership at all levels. We have a woman member on our SIG Executive Committee and two of the three Co-Chairs of our conference Program Committee were women in 2020. We have actively recruited women to serve in other organizing roles for our conference.

We have also prioritized DEI in awarding student travel funds to our conference. This includes both the funds we get from NSF for student travel for US-based students as well as SIGSPATIAL funds we use to support international students.

In the future, we plan to increase our DEI efforts targeting the next generation of SIGSPATIAL researchers. This includes making more SIGSPATIAL funds available for student travel, especially for international students. We will also investigate having mentorship events targeting underrepresented groups such as early career women.

# **3. Provide a list of awards and recipients**

We now have two prominent and well-recognized awards in our portfolio: a 10-Year Impact Award and a Best Paper Award.

*10-Year Impact Award*: This annual award is given to a regular paper published at our main conference 10 years ago whose value and prescience have become apparent over a long period of time. It is chosen by a committee from our research community. In 2020, the award was given to the following paper from the 2010 conference:

“Bag-Of-Visual-Words and Spatial Extensions for Land-Use Classification” by

Yi Yang (University of California, Merced, USA)

Shawn Newsam (University of California, Merced, USA)

In 2020, the committee also decided to give a runner-up for the 10-Year Impact Award:

“T-Drive: Driving Directions Based on Taxi Trajectories” by

Jing Wan (University of Science and Technology, China)

Yu Zheng (Microsoft Research Asia, Beijing, China)

Chengyang Zhang (University of North Texas, Denton, Texas, USA)

Wenlei Xie (Microsoft Research Asia, Beijing, China)

Xing Xie (Microsoft Research Asia, Beijing, China)

Guangzhong Sun (University of Science and Technology, China)

Yan Huang (University of North Texas, Denton, Texas, USA)

*Best Paper Award*: This annual award is given to one of the full papers of the main conference that demonstrates a significant new research finding in the areas related to SIGSPATIAL. The winner of this award for 2020 was:

“Incorporating domain knowledge into Memetic Algorithms for solving Spatial Optimization problems” by

Subhodip Biswas (Virginia Tech, USA)

Fanglan Chen (Virginia Tech, USA)

Zhiqian Chen (Mississippi State University, USA)

Chang-Tien Lu (Virginia Tech, USA)

Naren Ramakrishnan (Virginia Tech, USA)

# **4. List significant papers on new areas that were published in proceedings**

There was a significant amount of activity in FY2020 in the ACM SIGSPATIAL community on the COVID-19 pandemic. Spatial data and analysis of course play a big role in understanding many aspects of a contagious pandemic such as its source, its spread, etc.

There were several papers at the ACM SIGSPATIAL 2020 conference related to the COVID-19 pandemic. The paper “COVID-GAN: Estimating Human Mobility Responses to COVID-19 Pandemic through Spatio-Temporal Conditional Generative Adversarial Networks” by Han Bao (University of Iowa), Xun Zhou (University of Iowa), Yingxue Zhang (Worcester Polytechnic Institute), Yanhua Li (Worcester Polytechnic Institute), and Yiqun Xie (University of Minnesota) was presented in the Human Mobility track. This paper formulates human mobility as a spatio-temporal data generation problem and proposes COVID-GAN, a spatio-temporal Conditional Generative Adversarial Network, to estimate mobility (e.g., changes in POI visits) under various real-world conditions (e.g., COVID-19 severity, local policy interventions) integrated from multiple data sources. The paper “A Web-based System for Contact Tracing Query in a Large Spatio-Temporal Database” by Shadman Saqib Eusuf (BUET), Kazi Ashik Islam (University of Virginia), Mohammed Eunus Ali (BUET), Sifat Muhammad Abdullah (BUET), and Abdus Salam Azad (University of California, Berkeley) presents a web based system for a novel contact tracing query (CTQ) that finds users who have come into direct contact with the query user or indirect contact via the already contacted users from a large spatio-temporal database.

The ACM SIGSPATIAL 2020 conference included the co-located 1st ACM SIGSPATIAL International Workshop on Modeling and Understanding the Spread of COVID-19 (COVID-19 2020). This workshop focused on all aspects of modeling, simulating, mining, and understanding the spatial processes and patterns of the spread of COVID-19 and other infectious diseases. The workshop was cross-disciplinary and brought together researchers in the SIGSPATIAL community as well as researchers in epidemiology. There were two invited talks: 1) “A critical evaluation of COVID-19 pandemic forecasts” by Nicholas Reich, Associate Professor of Biostatistics at the University of Massachusetts Amherst; and 2) “Transmission Dynamics of SARS-CoV-2: Modeling, Inference and Projection” by Jeffrey Shaman, Professor in the Department of Environmental Health Sciences and Director of the Climate and Health Program at the Columbia University Mailman School of Public Health. 16 peer-reviewed research papers were presented at the workshop on a wide range of COVID-19 topics including contact tracing, a multi-lingual tweet dataset with location information, hospital capacity forecasting, and toll accuracy in underserved communities, to name a few.

# **5. Describe conference activity**

ACM SIGSPATIAL 2020 was the 28th event of an annual series of symposia and workshops with the mission to bring together researchers, developers, users, and practitioners carrying out research and development in novel systems based on geo-spatial data and knowledge. 2020 was the 13th year that the conference was held under the auspices of the ACM Special Interest Group on Spatial Information – SIGSPATIAL. In 2020, the flagship conference was held online from November 3 through November 6.

During the one-day workshops and the two-and-a-half-day single track conference, ACM SIGSPATIAL 2020 attracted a record 992 attendees. The online format along with free registration for non-authors allowed significantly more people to attend. 255 attendees were from industry and 735 were from academia (two had unknown affiliation). We were very glad about the continued significant participation by industry.

Papers were submitted and accepted in different categories. We received a total of 149 research submissions out of which 33 were accepted as full 10-page papers, resulting in an acceptance rate of 22.1%. Further, eight industrial experience and systems papers were accepted. The remaining papers in the proceedings correspond to demos and posters, which had 4 pages, and two 4-page vision papers. The latter were once again sponsored by the Computing Community Consortium (CCC) encouraging the submission of papers describing visionary ideas.

Continuing tradition, ACM SIGSPATIAL 2020 had a GISCup programming contest. In 2020, this focused on competitive spatio-temporal searching in which a managed fleet of mobile agents search for stationary resources on a road network. The competition received six submissions and the teams totaled 14 members submitting formal entries. Two entries were selected as winners, and were additionally qualified for an invited paper, an oral presentation, and award prizes. Google, Maxar, and Microsoft provided sponsorship for the SIGSPATIAL Cup and the awards for the winners..

The conference again held a Student Research Competition (SRC) that aimed at providing a forum for undergraduate and graduate students to share their research results and exchange ideas with other students, judges, and conference attendees. This year, four papers authored by undergraduate students and one paper authored by graduate students were selected for presentation during the conference and were further assessed for advancement to the next round of the competition, the ACM Grand Finals.

Our reviewers put in a significant amount of effort in reviewing the papers and our hope is that the reviews were beneficial even to those authors whose papers were not accepted. In 2020, the technical program of the conference was decided in a two-stage process.

1. Each submitted paper was first reviewed by at least three members of a carefully chosen program committee (PC) consisting of experts in the relevant fields. Our PC had a total of 114 invited members from academia and industry, plus an additional 23 members who were designated as the Senior PC. The assignment of papers to reviewers followed a bidding stage, during which PC members expressed their preferences to review a particular submission. In addition to three reviewers from the PC, each paper was also assigned a designated Senior PC member who studied the reviews, discussed the merits of the submission with the reviewers, wrote a meta-review, and formulated an accept/reject recommendation.
2. We again implemented a rebuttal phase where the authors received preliminary versions of the reviews and were offered the opportunity to address the concerns raised therein by submitting a response. The reviews, meta-reviews, and accept/reject recommendations were then finalized, taking into account the author responses. The selection of papers to include in the conference program was ultimately made by the PC Chairs. Certain papers that were not accepted for the conference, with the permission of the authors, were forwarded to the conference’s Workshop Chairs to be considered for inclusion in relevant workshops co-located with SIGSPATIAL. This is to promote good ideas that are not ready for a conference presentation to be discussed during the workshop sessions which cover a vast array of emerging topics. We also aimed to gain time and optimize our efforts by using the reviews submitted by the PC of the conference at the workshop level.

The ACM SIGSPATIAL 2020 conference had two distinguished speakers: Ross Maciejewski (Arizona State University), who gave the first keynote presentation titled “Exploring Spatial Phenomenon with Geovisual Analytics” and Aya Soffer (IBM Research, Haifa Research Lab), who gave the second keynote presentation titled “What's next in AI - Fluid Intelligence”.

The 2020 conference was preceded by the following ten co-located workshops:

* 6th ACM SIGSPATIAL International Workshop Emergency Management using GIS (EM-GIS 2020)
* 4th ACM SIGSPATIAL Workshop on Location-Based Recommendations, Geosocial Networks, and Geoadvertising (LocalRec 2020)
* 3rd ACM SIGSPATIAL International Workshop on GeoSpatial Simulation (GeoSim 2020)
* 9th ACM SIGSPATIAL International Workshop on Analytics for Big Geospatial Data (BIGSPATIAL 2020)
* 4th ACM SIGSPATIAL Workshop on Geospatial Humanities (GeoHumanities 2020)
* 2nd ACM SIGSPATIAL International Workshop on Geospatial Data Access and Processing APIs (SpatialAPI 2020)
* 3rd ACM SIGSPATIAL Workshop on Advances in Resilient and Intelligent Cities (ARIC 2020)
* 13th International Workshop on Computational Transportation Science (IWCTS 2020)
* 2nd ACM SIGSPATIAL International Workshop on Spatial Gems (SpatialGems 2020)
* 1st ACM SIGSPATIAL International Workshop on Modeling and Understanding the Spread of COVID-19

With a large number of very generous corporate sponsors, we are pleased to be in a secure financial position. The list of sponsors for SIGSPATIAL 2020 included: Apple (Platinum Sponsor); and Google, Oracle, and Esri (Bronze Sponsors). Many of these sponsors have supported the conference for multiple years. Additionally, Microsoft, Maxar, and Google provided financial sponsorship for the SIGSPATIAL Cup and the awards for the winners. Finally, two vision papers received awards sponsored by the Computing Community Consortium (CCC).

# **6. Comment on special projects and non-conference programs that provided service to some part of your technical community**

In addition to the conference proceedings, SIGSPATIAL publishes the ACM Transactions on Spatial Algorithms and Systems (ACM TSAS) and the SIGSPATIAL Special Newsletter.

The ACM Transactions on Spatial Algorithms and Systems (ACM TSAS) is now in its 7th Volume. The current editorial board of ACM TSAS includes Walid G. Aref (Purdue University) as Editor-in-Chief, three Senior Associate Editors: Pankaj Agarwal (Duke University, USA), Dinesh Manocha (University of Maryland College Park, USA), and Mohamed Mokbel (University of Minnesota, USA) as well as 21 Associate Editors.

To strengthen the synergy between TSAS and SIGSPATIAL, we continue to publish in TSAS special issues of extended versions of the best-paper award nominees from the previous year’s SIGSPATIAL conference. This year, two special issues on emerging topics are ongoing. The first ongoing special issue is on Contact Tracing with Guest Editors: Mohamed Mokbel (University of Minnesota, USA), Demetris Zeinalipour (University of Cyprus, Cyprus), and Li Xiong (Emory University, USA), and is expected to be published end of 2021. The second ongoing special issue is on Understanding the Spread of COVID-19 with Guest Editors: Taylor Anderson (George Mason University, USA), Andreas Züfle (George Mason University, USA), and Song Gao (University of Wisconsin, USA) and is expected to publish early 2022.

We are striving to increase the visibility of ACM TSAS. Currently, we are getting a steady stream of submissions to the journal. We have managed to double the number of papers published per issue from around 3 papers per issue in 2018 to around 6 papers per issue in 2020 due to the increase in the number of quality papers being submitted. Starting 2022, the number of articles per issue is expected to increase further.

We continued to maintain the SIGSPATIAL Special Newsletter, with Andreas Züfle (George Mason University, USA) as the editor until November 2020, and Martin Werner (TU Munich, Germany) as the editor since then. This newsletter has three issues per year (March, July, and November). The November 2020 issue covered event reports including reports of all ten SIGSPATIAL 2020 satellite workshops and the finalists of the ACM SIGSPATIAL 2020 student research competition who represented SIGSPATIAL in the ACM finals. Both March 2021 and July 2021 issues are currently in preparation.

# **7. A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years**

A key issue we would like to continue addressing in the next 2-3 years is increasing student participation at the conference. Although we have seen a significant increase in industry participation recently, we hope to repeat this success on the student front. Ideas being discussed include increasing recruitment related activities targeted to students during the ACM SIGSPATIAL conference, providing additional travel funding for students, and organizing student mentoring sessions. Having vibrant student participation is key to the future of ACM SIGSPATIAL particularly in staffing our leadership roles.

We also plan to continue to increase the diversity of our community. This is connected to the first point above in that recruiting diverse students will provide a pipeline for diversifying all aspects of our community from the more seasoned researchers to our leadership. Ideas include targeting travel funds to students who otherwise not be able to attend our conference such as from under-developed countries. Certain mentoring sessions could also be targeted at under-represented communities such as women or minorities.

Finally, we hope to have the first completely in-person international instance of our flagship ACM SIGSPATIAL conference. We had planned to have our first international conference in Beijing in 2020. However, due to the COVID-19 pandemic, the 2020 conference was forced to be completely online and the Beijing conference was postponed until 2021. Due to travel restrictions, we are planning to have two components to the 2021 conference: an in-person component in Beijing which will be attended by mostly people based in China and an online component during a time-zone that is more convenient for the US and Europe. Papers will be presented in both components. The 2022 conference will be in the US but we are looking to go abroad with a completely in-person conference in 2023.

**SIGUCCS Annual Report**

**July 1, 2020 - June 30, 2021**

**Submitted by: Lisa Brown, Chair**

*SIGUCCS' mission is to foster the professional development of practitioners involved in the support, delivery, management, and leadership of information technology services in higher education. This is pursued through providing forums for interaction and sharing knowledge and experiences, professional development opportunities, and recognition for leaders who contribute in the field.*

### Awards

###### Penny Crane Award for Distinguished Service

The Penny Crane Award for Distinguished Service was first awarded in 2000 and recognizes an individual’s significant and/or multiple contributions to SIGUCCS, the IT profession, and higher education over an extended period of time. There was no recipient in 2020.

###### SIGUCCS Hall of Fame

The Hall of Fame awards were first awarded in 2000. They recognize nominated individuals who have contributed their time and energies to benefit SIGUCCS. We selected 5 2020 SIGUCCS Hall of Fame Winners. These awards were presented at the 2021 virtual conference.

1. Chester Andrews
2. Mat Felthousen
3. Dan Herrick
4. Chris King
5. Becky Lineberry

###### Communication Awards

The Communication Awards are an annual competition where the winners are invited to participate in the annual conference as poster presenters. A full description of categories can be found at <http://siguccs.hosting.acm.org/wp/?page_id=406>

* Category 1 – Computing Services Public / Mobile Website
  + Not awarded
* Category 2 – Computing Newsletter
  + Best of Category: Texas A&M - “Better Together” - The Division of IT 2019 Annual Report
* Category 3 – How-To Guides (Print or Electronic)
  + Best of Category: NYU (New York University) - NYU Student Tech Guide
* Category 4a – Instructional Materials (for Classroom or Online Instruction)
  + Not awarded
* Category 4b – Quick Reference Guides
  + Best of Category: University of Texas Rio Grande Valley - Faculty and Staff Guide to Technology Resources at UTRGV
* Category 5a – General Service Promotional Materials
  + Best of Category: University of Alabama at Birmingham - Office 365 How-To Series
* Category 5b – General Services Campaign
  + Best of Category: University of Illinois Chicago -The Dragons & Dungeons of Cyber Security
* Category 6a – Short Promotional Video
  + Best of Category: New York University - NYU Zoom Series
  + Award of Excellence: University of California Davis - “Floppy & Cow: KB Khronicles” & “Floppy and Cow: Backup Imbroglio”
* Category 6b- Long Promotional Video
  + Best of Category: NC State University - New Student Orientation 2020
* Category 7 – Use of Social Media
  + Best of Category: University of Alabama at Birmingham - UAB IT GIPHY
* Category 8 – Student Created Materials
  + Best of Category: Texas A&M University - 2020 Computer Lab Signage Campaign

### Proceedings

The 2021 virtual conference was a much smaller endeavor than past year. There were eight distinct sessions consisting of groups of presentations for a total of 25 submissions in the proceedings of the 2021 ACM Annual Conference on SIGUCCS. Significant topics included: Leadership, Infrastructure, Pandemic Planning, Supporting our Staff, Classroom Pivots due to the Pandemic, Lightning Talks and Poster Session. The full proceedings in the ACM Digital Library can be found at: <https://dl.acm.org/doi/proceedings/10.1145/3419944>

### Programs

###### Mentoring Program

The Mentoring Program kicked off its 9th annual cohort in January 2021. SIGUCCS is committed to developing IT Service and Support professionals. We started the mentoring program in 2012 to pair service professionals together for 1 year to learn and grow. An advisory team administers the program and provides support for mentor pairs. We pair professionals with individuals who work at similar institutions in similar jobs or who have similar development interests. The expectation is that mentors and mentees communicate once a month about professional development topics. This program runs from January through October.

There are 18 participants this year. At the end of the program, mentors and mentees celebrate at a networking event during the annual conference.

###### Webinars and Hangouts

SIGUCCS offered just three webinars this past year, mainly due to not having a fall conference for content and moving the conference to spring. Additionally, our participants were busy with COVID activities and did not have a lot of time to prepare or watch presentations.

Popular or timely topics from the conference are selected as topics for webinars. Past webinars are available on our web page, and we have content dating back to 2010.

The SIGUCCS Marketing Committee also uses a brief presentation for the start of each webinar that introduces SIGUCCS and shares announcements about the annual conference, awards programs, and other SIG activities.

Each webinar is recorded and made available on our YouTube Channel. (<https://www.youtube.com/user/SIGUCCSVideos>)

Webinars offered between July 2020 and June 2021

* [How to Create an Effective Online Poster](https://youtu.be/NOKjti6KXcA)
* [SIGUCCS Mentoring Program – Fall 2020](https://youtu.be/T36F9g8bBhg)
* [Communication Skills and Teaming are a Project Manager’s Best Friend](https://youtu.be/R8aElAKjL24)

As a substitute for webinars, SIGUCCS began hosting Zoom hangouts in September 2020. Hangouts are a way to keep in touch, stay connected, and share ideas about a specific topic. The following topical hangouts were hosted:

* September 2020 Remote work – the good, the bad, and the ugly
* October 2020 -Scary Support Stories
* November 2020 - Thankful Thursday
* December 2020 - Coffee, Cocoa, Cookies & Community
* January 2021 - New beginnings
* April 2021 - Past, Present, and Future (as part of SIGUCCS ‘21)

###### Book Club

A handful of active SIGUCCS members started to read together a new book every other month. Participation has ranged from 4-12 people each month, and the books are discussed in Slack and in an online hangout. The book club is open to anyone, and we are hoping to encourage more people from the community to participate. Books read in 2020-2021 were:

* Creative Trespassing: How to Put the Spark and Joy Back into Your Work and Life *Tania Katan*
* What if I Say the Wrong Thing?: 25 Habits for Culturally Effective People *Verna Myers*
* Better than Before *Gretchen Rubin*
* The 7 Habits of Highly Effective People *Steven Covey*
* The Unicorn Project: A Novel about Developers, Digital Disruption, and Thriving in the Age of Data *Gene Kimn*
* Think Again *Adam Grant*

### Broadening Participation

###### Conference Attendance Grants

The purpose of the SIGUCCS Conference Attendance Grant program is to provide partial support for individuals in institutions of higher education to participate in the annual SIGUCCS Conference. This support is funded by SIGUCCS and consists of a full registration to the Annual Conference; hotel room accommodations; and registration for one half-day pre-conference seminar. With the absence of an in-person event, no attendance grants were awarded in 2020-2021.

###### Communication Efforts and Online Communities

The Marketing Committee coordinates our communication schedule to ensure that we send a message to the community every weekday. The messages come from a variety of Committees: the Executive Committee, our annual conference, marketing, awards selection, and professional development. We focus on two primary communications channels: the SIGUCCS-L email list and Facebook. We also do some minor communications on Twitter through automatic announcements of our newsletter articles and conference content announcements and monthly recaps on LinkedIn.

###### SIGUCCS Webinars YouTube Channel

We have continued to upload our monthly webinars to YouTube, and organize them into a playlist. We also let the community know when the video is available.

###### Slack

SIGUCCS is utilizing Slack to facilitate communications among SIGUCCS colleagues. Our SIGUCCS Slack domain is: siguccs.slack.com There are several channels established in our domain – #general, #conference, #productivity, and #academictechnology. A group of SIGUCCS colleagues also participate in a monthly #book-club chat, and one of our members posts a question in the #weeklychallenge channel.

### Key Issues in the next 2-3 years

###### Anticipated Travel Restrictions

As we plan for an in-person conference in March of 2022, we are anticipating lower attendance due to travel restrictions due to budget constraints and COVID policy regarding travel at many institutions.

###### Engaging Our Community outside of the Conference

Outreach and increasing our community continue to be priorities for SIGUCCS. We are continuing to focus on frequent communication about our activities and offering compelling webinars and hangouts. We also hope to expand our online communities to assist in finding conference and leadership volunteers.

**SIGWEB Annual Report**

**July 2020 - June 2021**

**Submitted by: Peter Brusilovsky, Chair**

# Mission Statement

SIGWEB, the ACM Special Interest Group on Hypertext and the Web, is a community of scholars, researchers, and professionals who study and use the concepts and technologies of linked information that were originally conceived as hypertext and are most famously realized on the Web. The SIGWEB community’s interests range widely and include hypertext in all its forms, social networks, knowledge management, document engineering, digital libraries, and the Web as both an information tool and a social force. SIGWEB encourages innovative research, open discussion of new ideas and the development of methodologies and standards through conferences and a variety of communication resources for its members and the world.

# Recent Highlights

* In September 2020, SIGWEB celebrated 20 years of one of its fully-sponsored conferences - ACM
* Document Engineering
* The Web Conference (formerly WWW), the most important event for the researchers in the area of the Web, is now added to the list of SIGWEB-sponsored conferences. The first Web conference under ACM SIGWEB sponsorship will be in Lyon in 2022
* Several SIGWEB conferences (Hypertext, DocEng, UMAP, Web Science) piloted different version of Fair Access initiative to bring attendees from underrepresented regions to SIGWEB events

# SIGWEB Conferences and SIG Vitality (Peter)

SGWEB organizes a wide range of events. Our 100% events have been stable for many years. ACM Hypertext – SIGWEB’ long-time flagship conference – celebrated its 30th anniversary in September 2019 and ACM DocEng celebrated its 20th anniversary in September 2020. ACM WebScience hosted its 13th edition in June 2021. We are excited to bring in The Web Conference (formerly WWW)  to the SIGWEB portfolio this year. This is a natural, but important “acquisition” for SIGWEB with its focus on Web and Social Media and a valuable addition for the whole ACM portfolio.

Every year SIGWEB holds Town Halls at two of its 100% sponsored conferences that are managed directly by SIGWeb – Hypertext and DocEng. The goal of these sessions is introducing both SIGWEB and ACM to conference participants and to engage in a discussion on what the SIG (and what ACM) can do to help advance the state of the art within our interest domain, as well as to advance the careers of our members. Despite of COVID-19 restrictions, we hold virtual Town Hall events at both ACM DocEng and ACM Hypertext.

Among our co-sponsored events, CIKM Series co-sponsored with SIGIR  hosted its 29th event in October 2020 and UMAP hosted its 29th conference in June 2021. SIGWEB also serves as a co-sponsor in two multi-sponsor series - JCDL and WSDM. While all of these events have a dedicated following, it is always healthy to evaluate the future impact that these events will have in the already crowded spectrum of computer science conferences supported by ACM. In addition to sponsoring, SIGWEB is also active in working with several other conference series “in cooperation”.

Financially, SIGWEB is in an excellent position to develop and experiment with new initiatives to help promote a vibrant scientific community within our domain. We have excellent conferences, we have existing partnerships with other SIGs and we have an extensive network of in-coop conferences that help ensure our vitality.

**Fair Access Initiative and Inclusion Efforts**

During its 2020 meeting, SIGWEB executive committee extensively discussed the challenges of conference organization in COVID context, but also pointed to the opportunities for broader engagement of students and researchers from underrepresented regions at SIGWEB conferences. Following a discussion with Hypertext 2020 and UMAP  2020 organizers, SIGWEB announced Hypertext Fair Access Initiative (<https://www.sigweb.org/conferences/upcoming/32-hypertext-2020-fair-access-initiative>) that has been followed by a similar initiative at UMAP 2020 also sponsored by SIGWEB (<https://um.org/umap2020/2020/sigweb-support-for-low-income-or-lower-middle-income-countries/>). A smaller-scale DocEng 2020 conference was able to offer free registration for all non-presenting attendees.  These opportunities were used by a number of researchers from the underrepresented regions. In 2021 we expanded these activities to our Web Science conference for which Inclusion was a part of the conference focus (<https://websci21.webscience.org/>). For Web Science, SIGWEB established a Fair Access Fund to support attendees from “global south” (<https://websci21.webscience.org/988-2/>). These activities continued for UMAP 2021 (<https://www.um.org/umap2021/registration>) DocEng 2021 (<https://doceng.org/doceng2021/registration>),  and Hypertext 2021 (<https://ht.acm.org/ht2021/registration/>)

In addition to the Fair Access work, SIGWEB is exploring a mechanism of chapters as a way to engage members of specific underrepresented geographic communities. In 2020, SIGWEB debuted its first chapter in China, an important region with rapidly increasing interest in the Web, social media, and other SIGWEB core topics. The experience of this first chapter will help us in planning similar actions in other currently underrepresented regions such as Latin America and Central Asia

# SIGWEB Awards

At ACM Hypertext 2020, the following two named awards were presented:

* *Douglas Engelbart Best Paper Award*:

Alessio Antonini, Francesca Benatti and Sally Blackburn-Daniels. On Links To Be: Exercises in Style #2.

* *Ted Nelson Newcomer Award:*

Sofia Kitromili, James Jordan and David Millard. What Authors Think about Hypertext Authoring.

At the jointly sponsored ACM SIGWEB/SIGIR JCDL 2020 conference, the following named award was presented:

* *Vannevar Bush Best Paper Award*:

Yusuke Yamamoto and Takehiro Yamamoto. Personalization Finder: A Search Interface for Identifying and Self-controlling Web Search Personalization

**Important papers**

We asked program committees of several SIGWEB-sponsored conferences to recommend us most interesting and important papers. From this list, we selected the following four papers that we consider as important. These papers were recommended by us to submit an article in the Communications of the ACM:

Nguyen, V. H., Sugiyama, K., Nakov, P., & Kan, M. Y. (2020, October). Fang: Leveraging social context for fake news detection using graph representation. In Proceedings of the 29th ACM International Conference on Information & Knowledge Management (pp. 1165-1174).

Basile, S., Consonni, C., Manca, M., & Boratto, L. (2020, July). Matching User Preferences and Behavior for Mobility. In Proceedings of the 31st ACM Conference on Hypertext and Social Media (pp. 141-150).

Ngo, T., Kunkel, J., & Ziegler, J. (2020, July). Exploring Mental Models for Transparent and Controllable Recommender Systems: A Qualitative Study. In Proceedings of the 28th ACM Conference on User Modeling, Adaptation and Personalization (pp. 183-191).

Mauro, N., Ardissono, L., & Cena, F. (2020, July). Personalized recommendation of PoIs to people with autism. In Proceedings of the 28th ACM Conference on User Modeling, Adaptation and Personalization (pp. 163-172).

# Volunteer Involvement

SIGWEB realizes that involving volunteers in SIG activities is a non-trivial task. Many of our members have been with the community for many years and have become accustomed to operating within a ‘well-oiled’ environment. At the SIG business meetings held at each of our fully-supported conferences, it is clear that motivating our membership to take leadership roles is both an opportunity and a challenge.

The primary road that we offer for volunteer involvement is through the organization of our conferences and symposia. For Hypertext and DocEng (two of our three 100% supported conferences), strong mechanisms are in place to help ensure long-term viability, moreover, SIGWEB directly helps these series. In particular, this year SIGWEB initiated a major update of the Hypertext steering committee bringing new active members. For Web Science, which is supported 100% by SIGWEB but managed together with the Web Science Trust, SIGWEB helps with long-term planning and organization. SIGWEB also actively participates inWe expect that the Web conference managed together with its own committee, the nature of cooperation will be similar. Our co-sponsored conferences (CIKM, JCDL, WISDM) are mature conference support structures in place, in cooperation with SIGIR, SIGCHI and IEEE.

In terms of participation at events, regularly provide funding for student (and possibly senior) travel. SIGWEB directly contributes to the student travel programs for our 100% supported conferences (Hypertext, DocEng, Web Science) and UMAP conference co-sponsored with SIGCHI. We require all of our events to offer reduced registration for members and extra discounts for students and retirees. Note that these statements reflect the situation within the reporting period and before, the approach to support attendees in need was different for our conferences in July and August 2020 and might remain different until the change of the COVID-19 situation. In addition, we were not enforcing the discounted registration rule for virtual conferences with already low registration rates.

To keep stronger ties with our conference series, SIGWEB instituted the mechanism of conference liaison. For each of our sponsored or co-sponsored conference series, we worked with its steering committee or similar body to nominate one representative, usually a member of the series SC to serve as the series liaison. The liaisons join SIGWEB officers and members at large to form SIGWEB Executive committee. Within the reporting period, SIGWEB considerably updated its Executive committee ensuring participation of active and well-informed members. Last EC meeting (hold virtually) was important to coordinate and plan conference organization in COVID-19 context.

The elected volunteer leaders of the SIG at the end of FY 2019 were:

* Chair: Peter Brusilovsky
* Vice-Chair: Eelco Herder
* Secretary/Treasurer: Milena Dobreva

The appointed SIGWEB Executive Committee has the following members:

* [Dick](https://www.sigweb.org/about-sigweb/executive-committee/23-dick-bulterman) [Bulterman](https://www.sigweb.org/about-sigweb/executive-committee/23-dick-bulterman)Past Chair (2015-2019)
* [April Mosqus](https://www.sigweb.org/about-sigweb/executive-committee/4-april-mosqus)ACM Program Coordinator
* [Charlie Hargood](https://www.sigweb.org/about-sigweb/executive-committee/7-charlie-hargood)Information Director
* [Ethan Munson](https://www.sigweb.org/about-sigweb/executive-committee/18-ethan-v-munson)DocEng Liaison
* [Claus Atzenbeck](https://www.sigweb.org/about-sigweb/executive-committee/21-claus-atzenbeck)Hypertext Liaison
* [Cathy Marshall](https://www.sigweb.org/about-sigweb/executive-committee/22-cathy-marshall)JCDL Liaison
* [Charles](https://www.sigweb.org/about-sigweb/executive-committee/26-charles-nicholas) [Nicholas](https://www.sigweb.org/about-sigweb/executive-committee/26-charles-nicholas)CIKM Liaison
* [Maria](https://www.sigweb.org/about-sigweb/executive-committee/29-maria-bielikova) [Bielikova](https://www.sigweb.org/about-sigweb/executive-committee/29-maria-bielikova)UMAP Liaison
* [David](https://www.sigweb.org/about-sigweb/executive-committee/30-david-millard) [Millard](https://www.sigweb.org/about-sigweb/executive-committee/30-david-millard)Web Science Liaison
* [Mounia](https://www.sigweb.org/about-sigweb/executive-committee/31-mounia-lalmas) [Lalmas](https://www.sigweb.org/about-sigweb/executive-committee/31-mounia-lalmas)WSDM Liaison
* [Jessica Rubart](https://www.sigweb.org/about-sigweb/executive-committee/6-jessica-rubart)Member at Large

Additional volunteers working with the SIG are:

* [Martin](https://www.sigweb.org/about-sigweb/executive-committee/5-martin-vesely) [Vesely](https://www.sigweb.org/about-sigweb/executive-committee/5-martin-vesely)Newsletter Editor
* [Daniel Roßner](https://www.sigweb.org/about-sigweb/executive-committee/32-daniel-rossner)Webmaster
* Benham Rahdari Social Media coordinator

# Challenges and Opportunities

SIGWEB continues to offer its members a compelling series of conferences that are supported in whole or in part by the SIG. Each of these conferences have a loyal following and are able to provide compelling scientific content. SIGWEB has a nice balance of small and large events, meeting the needs of young and established researchers. Some of our conferences are mature, others are working to find a longer-term identity.

A recurring issue of our meetings with the conference attendees and members is the value of membership. As with other SIGs, however, the advantages of SIG membership are not well understood by many conference participants: the Web and social media are assisting them in establishing a feeling of community better than the SIGs can; the financial advantages of SIG membership are not directly felt by participants (for whom conference registration is covered by grants and is only a small portion to the full travel expense of coming to a scientific meeting); the advantages of ACM DL access typically are not considered as special (since their host institutions nearly always already offer library-based institutional subscriptions).

One of the constant challenges for SIGWEB (and ACM) is to design a total benefits package that makes a compelling personal offer for new membership. This package should include sufficient financial and scientific incentives (such as having advance registration discounts only available to existing SIG members, plus unlocking special features of the DL that are available to members on top of any benefits from existing [institutional] subscriptions), and it should provide incentives for continued long-term membership (such as access to funds to support local events or perhaps scaled discounts to SIG conferences).

We realize that these concerns are not unique to SIGWEB and look forward to actively coordinating our efforts with other SIGs. One action that we took on our side in the reporting period is a “trial membership”. We decided to re-introduce the approach used by SIGWEB a few years ago: offer free membership to all registered attendees of our “flagship” events – Hypertext and DocEng. This has been done for both Hypertext and DocEng series in 2019 and 2020 and will be done in 2021. We hope that access to Hypertext Bulletin and mailing lists could create a feeling of belonging that could be extended for years beyond the trial. Another action that we are piloting in 2021 is a deeply discounted access for key SIGWEB conferences for SIGWEB members. While the usual “non-presenter” registration tends to be low, it is still a considerable amount of money if paid from one’s pocket. At both DocEng 2021 and Hypertext 2021 we worked with the organizers to provide further discounts for SIGWEB members. At DocEng it resulted in a decision to provide free non-presenter registration to everyone. At Hypertext, SIGWEB provided stipends to SIGWEB members to further discount non-presented registration. We hope that it could encourage people from several SIGWEB subcommunities to explore conferences that they usually do not attend.

# Publicity and Social Media

Last year, SIGWEB officers invested a considerable amount of time to revive and improve SIGWEB reach to members and broader community through publicity channels and social Media.

Charlie Hargood, our Information Officer, and our webmaster, Daniel Roßner, actively follow and engage with the communities for announcements and references to our conferences and the respective communities SIGWEB outreach on Twitter and Facebook has significantly been increased, among others by following the conferences’ social media accounts and sharing relevant announcements. Our social media coordinator, Behnam Rahnadri, maintains our presence in all these social media channels.

**SIGENERGY FY’21 Annual Report**

**November 2020 - June 2021   
Submitted by: P. Shenoy, Chair**  
   
ACM SIGEnergy is a professional forum for scientists, engineers, educators, and professionals for discussing energy systems and energy informatics. It brings together an inter-disciplinary group of computer scientists with diverse backgrounds in sensing, modelling, machine learning, optimization, control, network and systems design, and experimentation to discuss and address key challenges in future energy systems, and their impact on society. SIGEnergy covers a broad range of topics in energy informatics, energy system design, learning and prediction, analysis, and operation ranging from building energy management, renewable energy modelling and integration, energy storage system analysis, electric vehicle modelling and optimal operation, data-centre energy management, transportation system innovation, grid modernization and operation, and energy impact on climate and society.  
   
SIGENERGY was chartered as a SIG in November 2020; prior to this time, it was an EIG. The EIG and now the SIG continue to be a thriving organization serving a broad community of researchers from both academia and industry interested in all aspects of energy systems. We sponsor two successful, single-track, high-impact conferences, one of them (Buildsys) in cooperation with other SIGs. There are a number of highlights to report from the past year.

**Initiatives**

In line with its overall goals, SIGEnergy started a new workshop series, named ACM SIGEnergy Workshop on Climate, Sustainability, and Society, to discuss sustainability and climate aspects of energy systems and energy transition. The first edition of this workshop was held at ACM e-Energy 2021 in June and featured 3 invited talks from experts in the field and a panel discussion. The workshop focused on both technical and societal/social aspects of sustainability and climate change.More information can be found via <https://www.sigenergy-css.org/> . SIGEnergy intends to collaborate with other SIGs that have an interest in this topic. For the initial workshop, SIGEnergy held discussions with SIGCAS and invited a speaker from their community. We also reached out to the ClimateChange.AI community and intend to collaborate with other such communities in the future.

**Conferences**

SIG Energy sponsors and organizes two major conferences: ACM e-Energy and ACM BuildSys.

This year, eEnergy 2021 was held virtually, with leadership provided by a team based from Germany and Italy. To accommodate a global research community, each conference session was mirrored and held twice in two different time zones. The conference was successful, although we saw that the registrations and attendance were a bit lower that the 2020 virtual conference.

BuildSys was held in virtual format in November 2020. BuildSys has been historically co-located with ACM SenSys and will continue this arrangement in 2021 and beyond. As of 2019, EIGEnergy took on the sponsorship and organization of ACM BuildSys and with the transition of EIG Energy to SIGEnergy, the SIG has taken on the sponsorship of BuildSys (the conference was previously co-sponsored by 6 different SIGs). The conference was a success in its virtual format and broke even financially. For the 2021 edition, ACM Sensys and Buildsys are scheduled to be held in hybrid format in Coimbra, Portugal.

**Significant papers**

Both e-Energy and BuildSys continue to attract a diverse set of papers. Both conferences recognize their best papers through best paper awards.

The recent ACM e-Energy 2021 conference recognized a paper on the topic of blockchains for energy with a best paper award. The paper was titled “*Privacy-Preserving Energy Storage Sharing with Blockchain”* and was co-authored by Sid Chi-Kin Chau (Australian National University); Nan Wang (Australian National University); Yue Zhou (Australian National University)

The 2020 ACM BuildSys conference recognized a paper on the topic of energy trading with a best paper award. The paper was titled *“SolarTrader: Enabling Distributed Solar Energy Trading in Residential Virtual Power Plants,”* and was co-authored by Yuzhou Feng, Qi Li, Dong Chen, and Raju Rangaswami (Florida International University)  
  
**Finance**

On the financial front, the 2020 edition of ACM BuildSys broke even with a small $300 profit. The recently held 2021 edition of ACM e-Energy is similarly likely to end up with a small profit.

Despite being a new SIG, the SIG’s finances continue to be strong.  This has allowed us to continue to offer and even expand a strong travel grant program with a special focus on increasing diversity.

We are continuing the practice of waiving the SIGEnergy contingency share for our fully sponsored conferences to give the organizers more flexibility and allow them to keep registration fees as low as possible.   This may, however, change in 2020-2021 for conferences that will target an in-person component because of the greater uncertainty caused by COVID-19.

**Newsletter**

The SIG has created a new magazine, ACM SIGENERGY Energy Informatics Review, which is closely modelled on ACM SIGCOMM Computer Communications Review (CCR). EIR will publish four issues a year, all online, with articles on topics within the SIG’s field of interest. Technical papers accepted to EIR typically report on practical advances or the practical applications of theoretical advances. EIR will serve as a forum for interesting and novel ideas at an early stage in their development. The focus is on timely dissemination of new ideas that may help trigger additional investigations. While the innovation and timeliness are the major criteria for its acceptance, technical robustness and readability will also be considered in the review process. We particularly encourage papers with early evaluation or feasibility studies. In addition, EIR will publish non-peer reviewed editorial content and serve as a forum for the publication of reports from workshops and conferences in the general area of energy informatics. The first issue is expected to be released in November 2021.

Content from EIR will be in ACM Digital Library and at <https://energy.acm.org/eir>

**Awards**

SIGEnergy sponsors the best paper awards at its sponsored conferences. In the coming year, we plan to institute other awards such as a test of time award to recognize contributions made by the community.

**New SIGENERGY members as ACM Fellows and ACM Distinguished Members**  
   
At the ACM level, three SIGENERGY members have been selected as ACM Fellows this year: Steven Low, Prashant J. Shenoy, and Ramesh Kumar Sitaraman. One SIGEnergy member was elected to ACM Distinguished Members: Minghua chen.

**Diversity and Inclusion**

SIGEnergy is committed to fostering a diverse and inclusive professional community. While the SIG’s geographic diversity has been growing, with members spanning Europe, Asia, Australia and North America, we have work to do to improve gender diversity within our community. We have been making extra efforts to be inclusive in this regard in the past year (e.g., by ensuring greater diversity in conference committees). As an example, we have ensured at least 20% of the TPC members of the SIGEnergy sponsored conference ACM e-Energy to be female researchers since 2017). We will continue these efforts in the coming years.

**Issues facing the SIG**  
   
As a new SIG, we are still in the process of forming a community that focuses on energy systems and informatics. The topic of energy and sustainability is growing in importance globally, and we hope to grow our membership in the coming year to ensure long-term viability of our SIG.

**SIGSAM Annual Report**

**July 2020 – June 2021  
Christopher W. Brown, Chair**  
  
SIGSAM Mission statement:  SIGSAM provides members with a forum in which to exchange ideas about the practical and theoretical aspects of algebraic and symbolic mathematical computation. Its scope of interests includes design, analysis and application of algorithms, data structures, system and languages.  
  
Communication: SIGSAM facilitates communication amongst not only its members, but also the wider symbolic computation research community. The primary vehicles for this are the SIGSAM website ([www.sigsam.org](http://www.sigsam.org)) and the SIGSAM and ISSAC mailing lists.  The wider SIGSAM-friends mailing list has an audience of 2,000+.  These mailing lists are used to announce a wide range of events and items of interest to the larger research community.  The website provides a wide range of information to the community, including SIGSAM activities & info (e.g. awards, elections, bylaws, committees).  The SIGSAM website also hosts the East Coast Computer Algebra Day (ECCAD) workshop series website and the International Workshop on Parallel Symbolic Computation (PASCO) workshop series website.  All of this is managed by the excellent work of SIGSAM Information Director Matthew England (U.K.).  This year we transferred the domain name management and website-hosting for the flagship conference series in our area, the International Symposium on Symbolic and Algebraic Computation (ISSAC) from its previous ad hoc arrangement to ACM/SIGSAM control. Related to the SIGSAM website is its social media presence via Twitter at @acm\_sigsam, managed by Alexander Konovalov (U.K.).  
  
Communications in Computer Algebra: The ACM Communications in Computer Algebra (CCA) is a quarterly publication of the ACM sponsored by SIGSAM.  The CCA has been published since 1965, though previously as the SIGSAM Bulletin and the SIGSAM Bulletin.  It includes formally reviewed articles, timely communications and announcements, as well as traditionally publishing the abstracts of ISSAC posters and software demos.  It is published quarterly in the ACM Digital Library, and twice a year double-issues are published in print for members.  The current Editor is Dr. Wen-shin Lee from the University of Antwerp in Belgium, who continues to do an outstanding job.  Associate Editors are Massimo Caboara (Italy), Shaoshi Chen (China), Jean-Guillaume Dumas (France), Laureano Gonzalez-Vega (Spain), Kosaku Nagasaka (Japan) and Michael Wester (USA).   
  
Elections: Elections were held to choose new ACM/SIGSAM officers. Ilias Kotsireas, former chair of SIGSAM, served as chair of the nominating committee, obtaining an excellent slate of candidates. The newly elected officers are: Chair - Veronika Pillwein (Austria), Vice-Chair - Clément Pernet (France), Secretary - Shaoshi Chen (China), Treasurer - Matthew England (UK).  The new officers took office on 1 July 2021. Chris Brown moved to the position of Past Chair, and previous Past Chair Ilias Kotsireas stepped down from the Executive Committee after many years of service to SIGSAM. Those in institutional positions will remain in their positions for the coming year, with the exception of Information Director. They are: CCA Editor Wen-Shin Lee, Chief Tweeter - Alexander Konovalov, and Book Review Editor - Georg Regensburger.  The new Information Directory is Zafeirakis Zafeirakopoulos, Matthew England having been elected Treasurer.  
Conferences and Events: The International Symposium on Symbolic and Algebraic Computation (ISSAC) is typically either sponsored by ACM and SIGSAM or put on “in cooperation”.  ISSAC Proceedings have always appeared in the ACM Digital Library.  ISSAC 2020, July 20-23, was to have been held in Kalamata, Greece, but, due to Covid-19, was held online.  It was organized "in-cooperation" with ACM / SIGSAM.  ISSAC 2021, which will be held 18-23 July, will run in hybrid mode, with some participants on-site in St. Petersburg, Russia, but the majority attending online.  It will be sponsored by ACM / SIGSAM.  
  
Awards: The primary SIGSAM awards are the Jenks Memorial Prize, ISSAC Distinguished Paper award, and ISSAC Distinguished Student Author award.  The Jenks Memorial Prize is a biannual award recognizing “outstanding software engineering contributions in the field of computer algebra.”   
  
The Awards panel for the 2019 ACM SIGSAM Richard Dimick Jenks Memorial Prize (Chaired by Michael Monagan, Simon Frasier University) selected Michael Stillman as the winner for the Macaulay and Macaulay2 computer algebra systems. The award was presented at ISSAC 2020.  Newly elected incoming Chair Veronika Pillwein will appoint a Chair for the 2021 Jenks Award committee.  
  
2020 ISSAC Distinguished Paper Award: awarded to Sebastian Falkensteiner, Cristhian Garay-López, Mercedes Haiech, Marc Paul Noordman, Zeinab Toghani, and François Boulier for their paper "The Fundamental Theorem of Tropical Partial Differential Algebraic Geometry".   
  
2020 ISSAC Distinguished Student Author Award: split between Stavros Birmpilis (with George Labahn and Arne Storjohann) for the paper "A Las Vegas Algorithm for Computing the Smith Form of a Nonsingular Integer Matrix" and Raphaël Rieu-Helft (with Guillaume Melquiond) for the paper "WhyMP, a Formally Verified Arbitrary-Precision Integer Library".  
  
Some Impacts of SIGSAM Activities: The primary goal of SIGSAM in 2020-2021 was helping the ISSAC organizing committee to arrive at a successful conference format that dealt appropriately with the many unknowns present in planning many months ahead during Covid.  Some of our previous activities, like special sessions for young researchers were put on hold.  One of our last acts of the year, however, was to commit to contributing to the Applications of Computer Algebra (ACA) Early Researcher Award 2021.  
  
Key Issues for SIGSAM and its Membership: One of the key issues for SIGSAM is making the case for SIGSAM membership to the wider symbolic computation community, given that most of the services we provide are for members and non-members alike.  ISSAC 2020 was forced to move to a virtual format by Covid-19, which had a substantial negative impact on membership.  One driver for membership is the reduced ISSAC registration fee, but with the virtual conference the registration fee was waived.  ISSAC 2021 presents the same basic issue as it will be attended virtually by most attendees.

**SIGGRAPH Annual Report**

**July 2020 - June 2021**

**Submitted by:** **Adam Bargteil, Chair**

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[Papers Advisory Group (PAG)](https://docs.google.com/document/d/1f87_Vpo0Z9YVp3QSTYlppBL5Muzzv3vpwSqUQkObZ4s/edit#heading=h.ddxxpeg8j72p) …..……………………………....…..……………[4](https://docs.google.com/document/d/1f87_Vpo0Z9YVp3QSTYlppBL5Muzzv3vpwSqUQkObZ4s/edit#heading=h.ddxxpeg8j72p)3

[Pioneers Steering Committee](https://docs.google.com/document/d/1f87_Vpo0Z9YVp3QSTYlppBL5Muzzv3vpwSqUQkObZ4s/edit#heading=h.a7fe928jqilu) …..……………………………....…..……………..[4](https://docs.google.com/document/d/1f87_Vpo0Z9YVp3QSTYlppBL5Muzzv3vpwSqUQkObZ4s/edit#heading=h.a7fe928jqilu)3

[**Key Issues facing ACM SIGGRAPH**](https://docs.google.com/document/d/1f87_Vpo0Z9YVp3QSTYlppBL5Muzzv3vpwSqUQkObZ4s/edit#heading=h.8on8wg23yihm) …..……………………………....…..…………………….[**4**](https://docs.google.com/document/d/1f87_Vpo0Z9YVp3QSTYlppBL5Muzzv3vpwSqUQkObZ4s/edit#heading=h.8on8wg23yihm)**4**

[**Appendix**](https://docs.google.com/document/d/1f87_Vpo0Z9YVp3QSTYlppBL5Muzzv3vpwSqUQkObZ4s/edit#heading=h.e2dh6c886h5s) …..……………………………....…..………………………………....…..……………[**4**](https://docs.google.com/document/d/1f87_Vpo0Z9YVp3QSTYlppBL5Muzzv3vpwSqUQkObZ4s/edit#heading=h.e2dh6c886h5s)**7**

## Overview

###### Mission:

ACM SIGGRAPH’s mission is to nurture, champion, and connect researchers and practitioners of Computer Graphics and Interactive Techniques. (Approved by ACM August 2019)

###### Five-year Vision: Enabling Everyone to Tell Their Stories

By **Everyone**, we mean not just our traditional audiences of the professional movie, animation, and game makers but everyone with a story to tell, be they trained or novice, with significant time for the development of their story or intending to publish with just a single click.

By **Tell**, we mean all mechanisms of conveying a story: watching, experiencing, interacting, and creating.

By **Stories**, we mean not only our traditional media of movies, animations, and games but also newer forms of media such as augmented, virtual, or mixed reality, or forms of interactive and sensory experiences not yet invented. Stories may be narrative, abstract, educational or scientific. They may be purely digital or they may involve the physical artifacts either through incorporation or creation.

**Why this vision?**

* Computer Graphics and Interactive Techniques (CG&IT) is about communicating in innovative and inspiring ways.
* Telling stories using CG&IT, whether it’s explaining research findings, entertaining huge audiences or helping people understand the world, can change societies and cultures-we want to be the showcase for the existing and emerging fields that use CG&IT to connect people.
* We want to ensure we are relevant and meaningful to our existing diverse communities—this breadth of content and community has always been a strength of SIGGRAPH.
* We want to welcome newly emerging communities—this breadth is critical to our future success.

###### Strategy Work:

For the past five years, the ACM SIGGRAPH Executive Committee has been directing its work to support the strategic needs of our communities. We formed six strategy committees within the EC with the assistance of a few non-EC members and some of the standing chairs. Two of these strategy committees (Data and Marketing and Communications) have been sunset over the last year, Governance has become a Standing Committee, and three remain. Prior to the pandemic, we devoted the majority of in-person meeting time to strategic discussions and saved the administrative and operational work for bi-weekly hour-long video conference meetings. Since in person meetings are no longer an option, we held meetings to discuss strategy in biweekly calls and two larger meetings. The bi-weekly calls typically involved inviting representatives from our standing committees to do a short presentation followed by rotation through breakout groups. The larger calls were 3 hours long, scheduled on three different nearby days (e.g. Friday and Saturday one week and Saturday the next). The larger calls were more open-ended and resulted in three initiatives moving forward: an ad hoc committee for Online Events, a standing Membership Committee, and our Chapters Committee is working on a proposal for online “groups” based around common interest areas rather than geography.

One of the upsides of everyone working virtually is that there are no travel costs incurred to invite people to meetings, so we threw a very wide net and invited a large group to these meetings: the Executive Committee, Standing Chairs, and anyone on a Strategy Committee. We also allowed any of these invitees to suggest other invites. We would routinely have more than 50 participants (more than a single zoom window, even with a good GPU). These meetings were a little unwieldy to manage, but we found our stride rather quickly with short plenary presentations, followed by in-depth breakouts, and then (for the longer meetings) brief plenary discussions. This approach proved quite effective under the circumstances and had advantages, as well as disadvantages, over in-person meetings; the primary advantage being able to increase the number of voices that could be “in the room.”

## Strategy Committees

###### Nurturing our Existing Communities

*Mission:*

Our goal is to develop strategies that support the various existing communities that are served

by the ACM SIGGRAPH organization, including researchers, practitioners, teachers and

learners of computer graphics and interactive techniques. We seek ways to encourage

participation in the organization through conferences and other activities, and to nurture and

sustain such participation as life-long members of these communities.

*Accomplishments:*

* Brainstormed year round activities and ran a wiki survey to gather community feedback

to help prioritize such activities. Full results are linked [here](http://allourideas.org/siggraphwikisurvey/results?all=true), and top 5 preferences are:

* Workshops on future directions for the field
* “Behind the scene” industry talks
* Virtual social and networking events
* Traveling Art, AR/VR, ETech style venues to local museums hosted by chapters.
* Keep the SIGGRAPH APP, used for the conference, running year round.
* Ran two Fall 2020 focus groups, primarily focused on:
  + Online year-round activities
  + Chapters, especially in the context of pandemic
* Spring 2021 focus has been on nurturing volunteers within the organization
  + Thanking/acknowledging volunteers
    - Ran one EC Brainstorming session on this topic
  + Revealing our org structure - making the many roles within the organization more transparent.
    - Ran one EC Brainstorming session on this topic
  + Chapters leadership, and how to make these roles sustainable

*Goals:*

* Find path to execution for ideas about nurturing volunteers, in these broad goals:
  + Thanking/acknowledging volunteers
  + Revealing our org structure
  + Chapters leadership, and how to make these roles sustainable
* Form a working group to consider how to help bridge former student volunteers and other early career participants to find roles within the organization, particularly with respect to year-round activities. This complements the XSV program which is more tightly coupled to the conference schedule.

###### New Communities

*Mission:*

The mission of SIGGRAPH Frontiers is to reach out to new communities to broaden the base of SIGGRAPH to support our members as they evolve their research and industry careers to fit the changing landscape in computer graphics and surrounding areas. “New-Communities” here includes both, upcoming communities organizing around emerging research areas and established communities exploring problems where our expertise in computer graphics and interactive techniques can provide value. Our primary activities are a series of workshops at both SIGGRAPH and SIGGRAPH Asia and a set of online activities.

*Accomplishments:*

SIGGRAPH 2020 – 2021

The Covid-19 Pandemic has meant that New Communities had to re-imagine how to engage new communities in SIGGRAPH through year-round activities

* SIGGRAPH 2020 – Frontiers talks
  + Speaker Gregory J. Loan. Title: From Special FX to Medical Simulation
  + Speaker Kurt Luther. Title: Crowd Sleuths: Solving Mysteries with Crowdsourcing, Experts, and AI.
* SA 2020 – We held three short Frontiers Events (Max 90 minutes each)
  + Event 1: ConVRence: Hybrid Immersive Conferencing - An ACM SIGGRAPH Frontiers Panel (Thursday, 5th November). This was a hybrid workshop held at the University of Queensland and online including panellists spanning Virtual Reality, Civil Engineering and Sustainability research discussing the use of VR Technology to support immersive events and increase the range and nature of social interaction opportunities, regardless of attendees’ physical location. Panellists included Mark Billinghurst, Anthony Steed, Jackie Morie, Cristyn Meath, and Jurij Karlovšek. The event was attended by 20 people onsite (Covid restrictions active) and 40 people online.
  + Event 2: The Future of Displays. When the Pixel is no Longer the Point - An ACM SIGGRAPH Frontiers Panel (Tuesday, 24th November). In this event, a series of speakers reflected on their own experiences and research in the display of information for effective understanding. Some of the presenters are well known to the graphics community, however, others were in adjoining fields more focused on human-computer interaction. Panellists included Hrvoje Benko, Associate Professor Martin Tomitsch, Mark Pesce, Aaron Quigley.
  + Event 3: A Conversation With… (Friday, 4th December & Saturday, 5th December). New communities held the first event in this series in Dec 2020 with a broad range of speakers. A Conversation With… :  is a series of chats focused on Computer Graphics and Interactive Techniques, within a small group of people. These conversations are intended to be a casual, intriguing, and interactive session that enables attendees to take part in the conversation. The sessions are intentionally limited to be around 8-10. These were very well received.
* Through 2021, New Communities has continued A Conversation With…  with an event occurring approximately at the end of each month.
* 2021 has also seen New Communities transition Frontiers Workshops from an EC special program to the SIGGRAPH North America Conference. For SIGGRAPH Asia 2021, New Communities plans to still hold around three events in the run up to the Tokyo Conference with a view to transition workshops to a Conference program in 2022, a chair will need to be sought.

*Goals:*

* Following on from last year’s ambition to adapt to the changing times, we are continuing to  explore ways to maintain a yearlong program to keep the community engaged. This is currently  being envisaged through ongoing A Conversation With… events, online workshops, and podcast interviews with people working at the Frontiers of  SIGGRAPH in new emerging and intersecting communities.
* The strategy team has reviewed previously identified new and emerging areas and revised this. Moving forwards the team intends to focus Frontiers workshops, and online events around these new and emerging topics. We are also exploring the potential for new and emerging communities to have a route to publication of their work at SIGGRAPH Conferences. This is in the early stages of discussion and the strategy team will be focused on determining the ideal way forwards over the coming year.

###### Digital Presence

*Mission:*

The mission of the 21st Century Digital Presence Strategy Grouping is to improve the organization's digital presence to help people connect to information and other people, including:

* Collecting and archiving current and historical assets.
* Developing databases, servers, and interfaces for asset metadata storage and searching.
* Providing an online platform for networking, mentoring, and collaboration.

*Accomplishments:*

* Collected and stored many more assets in Google Drive.
* Started investigating using graph databases to collect and store asset metadata and to support queries for searching and interactive exploration.
* Selected Discord and Reddit to use as online platforms for connecting communities.
* Working with the Global Communities effort in the Chapters Committee to set up these platforms.
* Participated in a volunteer recruiting session to get help with platform goals.
* Implemented most of an online volunteer database and an interactive org chart to help keep personnel listings on our website correct and to help find potential candidates for open positions.

*Goals:*

* Continue to collect assets.
* Continue work on the graph database investigation.
* Get the volunteer database and org chart ready for real use; enter all relevant volunteer data.
* Set up and deploy Discord and Reddit networking.
* Possibly hire a project manager to help make all of this happen.



# Conferences

###### SIGGRAPH 2020

CHICAGO—[SIGGRAPH 2020](https://s2020.siggraph.org/conference/), which launched online on 17 August, concluded its live session week with nearly 400,000 streams worldwide. The 47th annual international conference and exhibition on computer graphics and interactive techniques was held for the first time virtually and, though no new content aired, remained open for registration through 11 September, with content accessible to participants until 27 October.

On the conclusion of the event, SIGGRAPH 2020 Conference Chair Kristy Pron shared, “SIGGRAPH 2020 was a huge testament to the strength and collaboration of the incredible graphics community. While we love to gather in-person and many missed the chance to see old friends, our incredible contributors and exhibitors brought their A game to this online experiment, and I could not be happier to have presided over SIGGRAPH’s first virtual conference.”

As is expected of the event, virtual SIGGRAPH 2020 played host to the latest innovations in art, science, and technology from more than 1600 contributors across 700 presentations during its two-week release, 17–28 August. To date, the conference has been welcomed and enjoyed by an international audience from 95 countries. Representation from six out of seven continents included participants from the United States, Canada, Japan, New Zealand, Zimbabwe, France, Brazil, Israel, China, and more. Not to be out done, this year’s Exhibition housed more than 80 diverse companies, who showcase the latest in computer graphics hardware, software, and more during custom virtual demonstrations and over 70 curated sessions.

Highlights from the conference included a magical keynote from cyber illusionist Marco Tempest, executive director of New York’s magicLab; the presentation of 163 research papers and 69 posters; three world-premiere animated shorts in the [Computer Animation Festival Electronic Theater](https://s2020.siggraph.org/conference/program-events/electronic-theater/); the worldwide release of [Magic Leap’s “The Last Light”](https://world.magicleap.com/en-us/details/com.magicleapstudios.lastlight), a VR Theater selection, and the unveiling of [Felix & Paul Studios’ first AR Project](https://twitter.com/felixandpaul/status/1298252098560237568), a collaboration with The Jim Hensen Company; ACM SIGGRAPH’s two-day Diversity and Inclusion Summit; sneak peek Production Sessions and Talks focusing on not only film and games but prestige TV and advertising; two retrospective panels celebrating pioneers from PDI (Pacific Data Images) and the NYIT Computer Graphics Lab, respectively; and, the first-ever Real-Time Live! global broadcast.

SIGGRAPH 2020 conference award winners are:

* **ACM Student Research Competition**First Place, Graduate – “Bound-constrained Optimized Dynamic Range Compression” by  
  *Dorian Chan, Carnegie Mellon University*First Place, Undergraduate – “Non-photorealistic Radiance Remapping” by  
  *Kohei Doi, Kyushu University*
* **Art Gallery**Best in Show – “Cacophonic Choir” by  
  *Hannah E. Wolfe, Colby College; Sölen Kiratli, Media Arts and Technology Program (MAT), UCSB, University of California Santa Barbara; and, Alex John Bundy, Planetarium Music*
* **Art Papers**Best in Show – “Enhanced Family Tree: Evolving Research and Expression” by  
  *Fan Xiang, Shunshan Zhu, Zhigang Wang, Kevin Maher, Yi Liu, and Zhiqiang Liang, Tsinghua University; Yilin Zhu, Stanford University; and, Kaixi Chen, Beijing Yuguo Culture and Technology Ltd. Inc.*
* **Computer Animation Festival Electronic Theater**Best in Show – “Loop” by *Erica Milsom, Pixar Animation Studios (United States)*Best Student Project – “Gunpowder” by *Romane Faure of Supinfocom Rubika (France)*Jury’s Choice – “The Beauty” by *Pascal Schelbli of Filmakademie Baden-Württemberg GmbH, Animationsinstitut (Germany)*Audience Choice – “To: Gerard” by *Taylor Meacham, DreamWorks Animation (United States)*Special Recognition – “Stem Cells: The Heroes in Crohn’s Perianal Fistula Treatment” by *Alan Smith, MadMicrobe Studios (United Kingdom)*
* **Immersive (Immersive Pavilion and VR Theater)**Best in Show – “DeepView Immersive Light Field Video” by  
  *Michael Broxton, Daniel Erickson, Jason Dourgarian, Jay Busch, Matthew DuVall, Matt Whalen, John Flynn, Ryan Overbeck, Peter Hedman, and Paul Debevec, Google Inc.*
* **Real-Time Live**Best in Show (Tie) –  
  “Interactive Style Transfer to Live Video Streams” by  
  *Ondřej Texler, David Futschik, Michal Kučera, Ondřej Jamriška, Šárka Sochorová, and Daniel Sýkora, CTU in Prague, FEE; and, Menglei Chai and Sergey Tulyakov, Snap Inc.*“Volumetric Human Teleportation” by  
  *Ruilong Li, Kyle Olszewski, Yuliang Xiu, Shunsuke Saito, and Zeng Huang, University of Southern California; and, Hao Li, University of Southern California, Pinscreen*Audience Choice – “DrawmaticAR – Automagical AR Content From Written Words!” by  
  *Yosun Chang, AReality3D, Permute.xyz*

###### SIGGRAPH Asia 2020

The 13th ACM SIGGRAPH Conference and Exhibition on Computer Graphics and Interactive Techniques in Asia took place in a fully virtual format from 4 – 13 December 2020 due to the unprecedented Covid-19 pandemic. For the very first time, attendees could access pre-recorded sessions from 4 December, in advance to the live sessions and Q&A which took place between 10 – 13 December 2020 at the comfort of their homes.

“For me, the best part of SIGGRAPH Asia is being able to connect and bring friends (both old and new) in the industry together, in one space. While we miss in-person, physical events, I am glad that my team and I managed to successfully transition and bring everyone together in a virtual setting despite the many challenges that came along due to the pandemic,” shared Conference Chair, Jinny HyeJin Choo.

The annual event, which rotates around the Asian region in normal circumstances, attracts the most respected technical and creative people from all over the world who are excited by research, science, art, animation, gaming, interactivity, education and emerging technologies. With the event going virtual, more from our global community came together and participated in a new and innovative way which drove forward the forefront of our field.

Themed ‘Driving Diversity’, the event took on a new meaning as we gave our diverse group of worldwide technical and artistic contributors the opportunity to connect with and inspire new communities. SIGGRAPH Asia 2020 celebrated innovation, advances and achievements in computer graphics, interactive techniques and beyond.

SIGGRAPH Asia 2020 attracted over 1,500 registered attendees from 38 countries and regions, featuring over 400 On-Demand, Live & Premiere Sessions which was equivalent to about 80,526 Live Stream Views (in minutes).

Highlights from the virtual conference included keynote sessions by Academy Award-winning animator **Glen Keane**; VFX Supervisor & Creative Director from Double Negative, **Paul Franklin**; invited speakers from **Epic Games, Facebook Reality Labs, Google, Soul Machines, Face the FACS, Motus Lab, Digital Domain, Pinscreen, USC Institute for Creative Technologies, Naughty Dog, Reel FX, Ubisoft, Pixar Animation Studios**; 113 Technical Papers, 22 top films from the Computer Animation Festival’s Electronic Theater; a Diversity and Inclusion Summit, 19 specially curated Emerging Technologies and more. For Programs like XR (Extended Reality), that traditionally had live demonstrations within the Experience Hall at the physical event, some of the presenters managed to go beyond the conventional video conferencing to find creative ways to engage the audience and conduct live demonstrations of their projects in the zoom rooms.

The event ended on a high note with the first-ever virtual party held on Gather.Town – with rooms customized and created by our very own Student Volunteers. Over a hundred delegates joined us at this party on the last day of our event.

**One of the Anchor Programs at SIGGRAPH Asia 2020 – Technical Papers:**

The Technical Papers program received a total of 305 submissions, out of which 109 were

accepted to SIGGRAPH Asia 2020, resulting in an acceptance rate of 35%. The submitted

articles represent the collective work of 1291 authors from 38 different countries, reviewed by

the Technical Papers Committee (PC), which comprises of 49 experts from academia and

industry.

Although COVID-19 interfered with virtually all stages of the SIGGRAPH Asia 2020 process, we obtained 305 diverse submissions, showing the continued vitality and vibrancy of the field. Each submission was reviewed by at least 2 members of the Technical Papers Committee, and at least 3 external experts. In total, 1,538 reviews were completed by the 49 program committee members and the 605 external reviewers. The paper selection process for SIGGRAPH Asia 2020 adhered to the double-blind procedure introduced at SIGGRAPH 2019 as well as more further refinements. The Technical Papers Committee meeting following the model of SIGGRAPH 2020, was held entirely virtual. Final decisions were made during the virtual meeting to accept 109 papers for SIGGRAPH Asia 2020.

**SIGGRAPH Asia 2020 Computer Animation Festival Award Winners:**

* Best In Show: ‘Shoom’s Odyssey’ by Julien Bisaro (Director) and Claire Paoletti (Producer), Picolo Pictures, France
* Best Student Project: ‘Migrants’ by Directors Hugo Caby, Antoine Dupriez, Aubin Kubiak, Lucas Lermytte, and Zoé Devise; and Producer Carlos De Carvalho from Pôle 3D, France
* Jury Special: Box Assassin by Producer/Director Jeremy Schaefer by Ringling College of Art & Design, USA



## Awards

SIGGRAPH presented **7** awards at SIGGRAPH 2020, and inducted **6** people into the SIGGRAPH Academy:

**2020 Computer Graphics Achievement Award:** Kavita Bala

For fundamental contributions to physically-based and scalable rendering, material modeling, perception for graphics, and visual recognition.

**2020 Significant New Researcher Award:** Alex Jacobson

For outstanding contributions to geometry processing, including shape deformations and robust mesh tetrahedralization.

**2020 Outstanding Doctoral Dissertation Award:** Tzu-Mao Li

For his dissertation that bridges graphics to vision, programming systems, and machine learning through differentiating graphics algorithms.

Honorable Mentions for the 2020 Outstanding Doctoral Dissertation Award:

Yun Raymond Fei, Columbia University

Mina Konaxovic Lukovic, École polytechnique fédérale de Lausanne

**2020 Outstanding Service Award:** Thierry Frey

For his long-term service to ACM SIGGRAPH, and in particular to the Professional and Student Chapters and to the SIGGRAPH and SIGGRAPH Asia Conferences.

**2020 Lifetime Achievement Award in Digital Art:** Jeffrey Shaw

For his singular vision and pioneering efforts in the creation of interactive and immersive media art.

**2020 ACM SIGGRAPH Practitioner Award:** Elizabeth Baron

For her trailblazing work in bringing virtual environments and related interactive techniques to engineering and design processes in multiple industries.

**2020 ACM SIGGRAPH Distinguished Educator Award:** Donald P. (Don) Greenberg

For his enduring legacy as a computer graphics pioneer, and especially as a pioneering computer graphics educator.

**2020 SIGGRAPH Academy inductees**

Kavita Bala

Elizabeth Baron

Eugene Fiume

Ming Lin

Hanspeter Pfister

Alla Sheffer



## Standing Committees

###### Awards Committee

Chair: John (Spike) Hughes

*Mission:*

The Awards Chair is responsible for the oversight of the various awards committee chairs, and the SIGGRAPH academy chair, and for organizing the Awards Luncheon at SIGGRAPH. The Chair is also responsible for coordinating publicity (e.g., making sure the awardees don’t tell about their awards before SIGGRAPH has a chance to announce them), and working with contractors on the Awards presentation portion of the SIGGRAPH conference. Finally, the Chair is responsible for ensuring that individual awards chairs follow a reasonable sequence of succession, particularly for ensuring that the rising chair for any committee is known before SIGGRAPH, so that they can be announced, and the retiring chair thanked during the awards ceremony. This particular “chair” assignment is a little idiosyncratic, as there is no specified committee nor any committee meetings.

*Accomplishments:*

* The Awards Committee has selected awards for this year and has announced them publicly.
* Additionally, the committee is in the process of making the videos necessary for the virtual awards presentation and the awards-talk session.
* The committee will soon be ordering plaques and teapots for the award winners and sending checks to those awardees whose award includes an honorarium.
* The committee has a new Dissertation Award Chair (Mathieu Desbrun), who has done an excellent job in his first year despite moving to Paris at approximately the same time he accepted the role.
* The committee is in the process of advertising for a replacement chair for the SIGGRAPH Academy committee (replacing Holly Rushmeier) and the Art Award committee (replacing Sue Gollifer).
* Other chairs at the 3-year stage of their terms have agreed to continue in their roles. Natalya Tatarchuck resigned her role as the Practitioner Award co-chair, having gotten that award started. Mark Elendt continues on as sole chair of that committee. The overall Awards Chair has also agreed to remain on for another 3-year term.
* The committee had asked ACM for permission to automatically include the Educator and Practitioner awards in the SIGGRAPH Academy, but got no word from them in time for the actual awards announcements, so had to handle these admissions ad hoc.

*Goals:*

* The goal is to collect all information -- the actual duties of the chair and the various chairs of the different awards committees -- in a single place, so that the next person will have a better idea of what obligations of the role.
* Implement nominations for the Athena award (or ask the Technical Awards chair to do so). (This was one of last year's goals as well, but didn't happen.)
* Finish up arrangements with ACM for the automated inclusion of the Educator and Practitioner award winners in the Academy.
* Test and debug the new travel-and-housing arrangements system that we'd planned to use for S2020. (This was a goal for S2021, but it's again virtual, so it'll have to be a goal for S2022.)

###### Chapters Committee

Chair: AJ Christiensen

*Mission:*

The ACM SIGGRAPH Professional and Student Chapters Committee strives to unite and grow ACM SIGGRAPH’s community of researchers and practitioners of Computer Graphics and Interactive Techniques by empowering our worldwide network of chapter leaders to operate as entrepreneurs to organize local events, collaborate across topics of expertise, interest, and emergence, bridge geographical and cultural distance, and promote learning and professional networking all year long.

*CHAPTER NUMBERS:*

Professional:

30 Active Professional Chapters

Bangkok ACM SIGGRAPH Chapter

Bengaluru ACM SIGGRAPH Chapter (new)

Bogota ACM SIGGRAPH Chapter

Caracas ACM SIGGRAPH Chapter

Chengdu ACM SIGGRAPH Chapter

Detroit ACM SIGGRAPH Chapter

Fort Lauderdale ACM SIGGRAPH Chapter

Guadalajara ACM SIGGRAPH Chapter

Helsinki ACM SIGGRAPH Chapter

Hong Kong ACM SIGGRAPH Chapter

London ACM SIGGRAPH Chapter

Los Angeles ACM SIGGRAPH Chapter

Madrid ACM SIGGRAPH Chapter

Montreal ACM SIGGRAPH Chapter

New York City ACM SIGGRAPH

Paris ACM SIGGRAPH Chapter

Portland ACM SIGGRAPH Chapter

Rochester ACM SIGGRAPH Chapter

San Francisco ACM SIGGRAPH Chapter

Santiago ACM SIGGRAPH Professional Chapter

Shanghai ACM SIGGRAPH Chapter

Shenzhen ACM SIGGRAPH Chapter

Silicon Valley ACM SIGGRAPH Chapter

Singapore ACM SIGGRAPH Chapter

Taipei ACM SIGGRAPH Chapter

Tokyo ACM SIGGRAPH Chapter

Toronto ACM SIGGRAPH Chapter

Vancouver ACM SIGGRAPH Chapter

Viborg ACM SIGGRAPH Chapter

Washington DC ACM SIGGRAPH Chapter

6 De-Chartered Professional Chapters

Dhaka ACM SIGGRAPH Chapter

Munich ACM SIGGRAPH Chapter

Orlando ACM SIGGRAPH Chapter

Stamford ACM SIGGRAPH Chapter

Sydney ACM SIGGRAPH Chapter

Wroclaw ACM SIGGRAPH Chapter

Student Chapters:

12 Active Student Chapters

Bilkent University ACM SIGGRAPH Student Chapter

Bowling Green State University ACM SIGGRAPH Student Chapter

CSUF ACM SIGGRAPH Student Chapter (in process)

Drexel University ACM Student SIGGRAPH Chapter

Embry-Riddle ACM SIGGRAPH Student Chapter

MTSU ACM SIGGRAPH Student Chapter

NJIT ACM SIGGRAPH Student Chapter

PCAD ACM SIGGRAPH Student Chapter

RIT ACM SIGGRAPH Student Chapter

San Jose State ACM SIGGRAPH Student Chapter

Texas A&M University ACM SIGGRAPH Student Chapter

University of Illinois at Urbana-Champaign ACM SIGGRAPH Student Chapter

University of Pennsylvania ACM SIGGRAPH Student Chapter

3 De-Chartered Student Chapters

Louisiana State University ACM SIGGRAPH Student Chapter

Stanford University ACM SIGGRAPH Student Chapter

University of Tulsa ACM SIGGRAPH Student Chapter

*Accomplishments:*

CONFERENCE ACTIVITIES:

SIGGRAPH North America 2020

* Workshop: Our first ever fully-virtual chapter leaders workshop was a huge success. Chapter leaders were all just beginning to appreciate the realities of running their own virtual events for their chapters, and were interested in solving problems of leader and member retention and staying engaged through their computers, so there was a lot to talk about. The agenda we followed can be viewed in [this documen](https://docs.google.com/document/d/1xXDbVcrqDGfReTZ5XquTTNIwSgPw4-68-50NnThRVhA/edit?usp=sharing)t, but suffice it to say there was a heavy focus on socialization activities since that was what everyone indicated they were missing the most.
* Chapters Party: Our first ever fully-virtual chapters party was a considerable success. Instead of our usual process of hosting one large event on-location, we encouraged chapter leaders from across the world to contribute to the planning process by hosting their own events that functioned as a continuous social experience across the duration of the live week of the conference. Some of these events were more popular than others, and some of the events were more complex than others, but they all provided a much-needed social experience during the conference that was somewhat lost in the sterility of a virtual format. One concern was that these party events were predominantly attended by conference attendees and members of the chapters community, and largely disregarded by others in the organization. One perceived benefit was that these were an opportunity for chapter membership that wasn’t attending the conference to still socialize with the community and get a sneak-peak into what the conference was like.
  + The events were all hosted on party.siggraph.org, and posted in the conference schedule as BOFs. The party site is archived in this PDF. Some screenshots of events are shared below:
  + A picture containing text, screenshot, computer, display

    Description automatically generatedText, whiteboard

    Description automatically generatedGraphical user interface

    Description automatically generated with medium confidence

* Chapters Information Session: The PSCC hosted an organization BOF to share information about starting a chapter, joining a chapter, and leading a chapter. This was combined with our usual “Chapters Fast Forward” in which every chapter attending the conference has 5 minutes to present their year’s successes. This year, even the chapters that didn’t attend the conference were encouraged to submit 5-minute videos summarizing their year’s successes, and these videos were uploaded to the ACM SIGGRAPH YouTube channel AND edited into an incredible highlight reel that was presented at the BOF.
  + Alain Chenais was also invited to give a talk about the importance of participating in chapters and running shared virtual events across multiple Canadian chapters to the audience, and his presentation generated some great conversation among attendees.
* Chapters + Student Volunteer Luncheon: The committee has decided this event does not translate well to a virtual conference and is on hiatus until the next in-person conference.

SIGGRAPH Asia 2020

* Workshop: The SIGGRAPH Asia virtual workshop was a more intimate event than the SIGGRAPH North America virtual workshop, primarily because fewer chapters exist in the relevant time zones and participate in the SIGGRAPH Asia conference. Like the North American event, it was scheduled weeks before the conference on November 22nd to avoid fatiguing chapter leaders during their conference attendance. We had 6 chapters represented among 15 attendees. This allowed the event to be run more casually and over a shorter period of time. The agenda for the event [can be found here](https://docs.google.com/document/d/1VJ5hsUNMbnshuXW_yyEdoWmKER7afgZe5HK2DCjq_ys/edit?usp=sharing).
* Chapters Party: Although the PSCC has never hosted a party event at SIGGRAPH Asia in the past, we saw a unique opportunity to bring the very successful virtual party from SIGGRAPH North America to the Asian conference and inject some much-needed socialization to the event. Both the Taipei and Hong Kong chapters registered to host a party event. However, just before the conference began, Taipei chose to cancel their event for personal reasons, and the day of the Hong Kong event it was canceled due to a renewed government COVID lockdown. So unfortunately, there were ultimately no party events. We still consider this an interesting model to pursue in future years.
* Chapters Information BOF: Due to a large amount of confusion in the SIGGRAPH Asia scheduling system, and subsequently to many COVID-related personal problems in the lives of committee members, we were unable to schedule an independent BOF or any kind of late-stage improvised event. We did briefly make an appearance in the “Getting to know the Organization” BOF organized by June Kim and the International Resources Committee.
* Chapters + Student Volunteer Luncheon: The committee has decided this event does not translate well to a virtual conference and is on hiatus until the next in-person conference.

Other Activities

* Online Communities: Easily the largest investment of PSCC committee time spent since January 2021 has been in investigating the technical and community requirements and implementation processes for bringing the many disparate communities across ACM SIGGRAPH into the virtual realm. This task was accepted by the PSCC because of our experience building community among regionally-oriented affinity groups, but the goal is for “Online Communities” to build community among interest- and identity-oriented affinity groups. The initial proposal for the December 2020 EC Strategic Meeting [can be found here](https://drive.google.com/file/d/10Gr5A5qcO9Jw9qRsgrvRSmoDuIo-HHUj/view?usp=sharing), and a report on technical and community requirements that was shared at the May 2021 EC Strategic Meeting [can be found here](https://docs.google.com/presentation/d/1kOxYZFUX_UfH__PO5WWZykZpfcUmfkQkhmJ2lZJcGro/edit?usp=sharing). This effort is ongoing.
* Regional Chapter Hangouts: Approximately three times a year, the PSCC’s four regional (and student) liaisons attempt to gather chapter leaders together from their region (and students) to allow the leaders to ask questions they have for the organization, share problems and solutions with each other, and build a stronger network. Different liaisons have handled this differently:
  + North American chapters have a strong connection, particularly among the larger more active chapters
  + Asian chapters have a strong connection but it is somewhat independent from all other chapters unfortunately. This culture gap continues to be a challenge. This liaison also covers Australia, but we no longer have any active Australian chapters.
  + Student chapters have opted to hold numerous one-on-one meetings with liaison [Kevin Mcnulty](mailto:kevin.mcnulty@mtsu.edu), which has proven successful at building a trust relationship with the organization. This group could benefit from more contact among themselves, though.
  + European and South American chapters have continued to operate successfully but very independently. Our new liaison for these regions (and the un-represented Middle East and Africa) is beginning to try to understand how to address this disconnect. These chapters do participate in virtual all-chapter meetings, but often find them challenging because of time zone constraints.
* Gather.Town Volunteer Appreciation Hangouts: The Chapters Committee has been feeling very fatigued by a lot of work without much “fun time”, and we decided to try to coordinate a happy hour-style hangout. We knew many members of our committee would rather just have the time to themselves, but others would appreciate a chance to just socialize with their SIGGRAPH friends, so we eventually opened up the event to all volunteers for the organization and for the conference. The first event ended up attracting only 8 participants, but was very enjoyable. This did illustrate a major problem with our communication strategy, though, as many people we talked to afterward had never heard the event was happening. We plan to try this again with a stronger communication strategy.

*Goals:*

SIGGRAPH North America 2021:

* Workshop 2021: Although the full report for this workshop belongs in next year’s committee report, we just held the 2021 workshop this past weekend and it went very well. The attendance was up for our stronger chapters, but there were fewer overall chapters in attendance. This event was not only an opportunity for chapters to gather and share their concerns and learn more from the organization, but was also our chance to prepare chapter leaders to create content to share at the conference like their fast forward videos and virtual party events.96-\*9
* Chapters Party: We plan to hold a virtual chapters party along the description of the 2020 party events again. In theory this should work a little more comfortably with technologies like gather.town that have matured enormously in the past year. Several chapters have already expressed interest in hosting.
* Chapters Information BOF: We plan for this to happen more or less in the same way as last year as well.
* Online Communities Recruitment BOF: We also plan to hold a session to engage with community leaders across the organization to explain the goals and plans of the Online Communities initiative that the PSCC has taken the lead on. The hope is to convince these community leaders to step forward and volunteer to host and maintain virtual versions of their currently successful in-person communities. A mailing list will be created for interested parties and they will be contacted as the Online Communities platform gets started around the end of the calendar year.
* Chapters/SV luncheon: The committee has decided this event does not translate well to a virtual conference and is on hiatus until the next in-person conference.

SIGGRAPH Asia Conference 2021:

* Workshop: We plan to host a virtual workshop several weeks prior to the conference, similar to the SIGGRAPH Asia Chapter Leaders Workshop event that happened in 2020. If international travel is possible and endorsed by the organization, we will also be exploring a hybrid version of the workshop that includes in-person contact and virtual connectivity. The overall goal is to hybridize both the North American and Asian workshops as soon as an in-person presence becomes an option.
* Student Volunteer Luncheon: If international travel is possible, we will certainly resurrect this event. In the likely event that the conference is only welcoming a domestic audience, this luncheon will remain on hiatus.

Other Initiatives:

* Continue the rollout of the Online Communities initiative in collaboration with other stakeholders including community leaders and IT Services, 21st Century Digital Technologies, and Communications
* Continue to smooth out the process of borrowing the Chapters’ shareable Zoom account, which has been very popular but occasionally difficult to coordinate.
* Continue to pursue corporate relationships that benefit chapters and the organization.
* Build our recognition of hard-working chapter leaders, which includes a new initiative coordinated between the EC and ACM to provide complimentary one-year organization memberships for student chapter officers
* Document our procedures as a committee, and encourage chapters to document their procedures in running chapter business
* Improve a sense of community among chapters inside each region and across continents, in part thanks to the launch of a WeChat server for Asian chapters that are not able to use American third-party services like Zoom, Discord, and Slack
* Continue to improve the PSCC’s productivity through a suite of virtual project management tools (Trello, Slack, Google Calendar, Zoom)
* Helping set up chapter leaders with the shared organization ACM SIGGRAPH google calendar which will allow them to publicize their virtual events worldwide on the ACM SIGGRAPH website
* Streamlining the requirements and application process for chapter events grants, and offering financial assistance to struggling chapters to host the traveling CAF which has historically been provided by the organization at the mere cost of shipping a DVD. Special attention has been paid to student chapters that are having trouble justifying any expense this year.

###### Communications Committee

Chair: Adele Newton

*Mission:*

The mission of SIGGRAPH Communications is to ensure excellence and relevance of current communication channels, including the SIGGRAPH website, social media channels and newsletters.  All communications from SIGGRAPH must reflect the dynamic SIGGRAPH community and its offerings to members and potential members and establish SIGGRAPH as the international, authoritative voice of computer graphics.

*Accomplishments:*

* Hired Alex Rollinson, a professional website manager, to ensure that the siggraph.org website is up to date and renewed regularly with material provided by standing committees, professional chapters and the SIGGRAPH YouTube channel;
* Recruited members of the Communications Committee to develop members profiles (Theresa-Marie Rhyne) and manage social media (Sarah Puzio and Alex Bryant);
* Established a contract with Durrell Communications to design and produce a SIGGRAPH website that is:
  + up-to-date, attractive and responsive
  + reflect SIGGRAPH’s focus on human interaction by providing a user-friendly, functionally-intuitive experience
  + be a showcase for all SIGGRAPH organizational activities, including those related to Professional and Student Chapters, on-line events, awards, Pioneers, annual conferences, specialized conferences, elections, standing committees, communities, history and standing committee offerings
  + be a repository for documents (including SIGGRAPH Policies and Procedures), recordings (e.g. past conference keynote addresses) and archival material (e.g. overviews of past annual conferences)
  + potentially include a members-only section to provide additional member benefits

*Goals:*

* Launch the new SIGGRAPH website in September/October, 2021
* Develop new communication channels that will reach new audiences with outstanding and engaging content including:
* interviews with SIGGRAPH pioneers and award winners
* collaboration with media outlets that reach into potential new SIGGRAPH audiences including medicine and medical technologies, assisted and adaptive technologies, robotics and security.

###### Digital Arts Committee

Chair: Victoria Szabo

*Mission:*

The mission of the ACM SIGGRAPH Digital Arts Committee is to foster year-round engagement and dialogue within the digital, electronic, computational, and media arts. We facilitate dynamic scholarship and creative programming within the ACM SIGGRAPH organization. Our goal is to promote collaboration between artists and the larger computer graphics and interactive techniques community.

*Accomplishments:*

* This year the DAC continued to foster its relationship with the annual conferences through special sessions and panels, and BoFs. We successfully launched the “Digital Power: Activism, Advocacy, and the Influence of Women Online” exhibition, and created an associated panel, in addition to our information sessions on the Art Show Archives project and on our community.
* We also worked with Leonardo ISAST to develop a special panel on “AI, Art and Social Justice” for SNA.
* We held special info sessions about our community at SIGGRAPH Asia and ISEA International. In addition, we heightened our focus on developing our group as a year-round community, a goal only amplified by the COVID crisis.
* After the annual conferences in 2020, we launched a new monthly lightning-talk and discussion series, SPARKS: Short Presentations of Artworks & Research for the Kindred Spirit. http://dac.siggraph.org/sparks. These sessions are recorded for later viewing and are open to the public.  The 2021 topics  have included: “Screen Worlds: Net Art & Online Communities,” “Immersion, Interactivity, and Altered Realities,” “Environmental Issues, Sustainability, Climate Change,” “Robotics, Electronics, and Artificial Intelligence” and “Art, Science, and the Invisible World We Live in.” This has also involved discussion of how to manage permissions for cited and quoted work in a recorded session.
* We have continued to update the communications arm of our work, launching our new website at http://dac.siggraph.org, and archiving our events and activities there. We have also bolstered our Facebook presence and have recently activated our Instagram channel as a way to reach out to the community. We have continued to use Ning as a communications platform, and so our members can retain individual profiles, but have been seeking out alternates for membership management.

*Goals:*

* We will continue to host the SPARKS sessions monthly, and to grow and diversify our community.
* As we head into summer, we will host one special DAC presentation session on “Music in Social VR: Education, Installation, Conferences, and Performance” before our participation in the annual conference. At the conference we anticipate hosting several sessions as well as an arts “mixer” in a social VR platform. At both SIGGRAPH 2021 and SIGGRAPH Asia 2021, as well as the next ISEA we will present our community offerings.
* We are reaching out to new volunteers to help build out our online presence and to help produce future exhibitions.
* We look forward to SIGGRAPH 2022 to launch a new online exhibition, and to working in partnership with the Arts venues and the History Committee as we look ahead to SIGGRAPH’s anniversary celebrations.
* We also wish to step up efforts to think about long-term archiving and sustainability of the history of digital art more broadly as co-creators, practitioners, and theorists helping to define the field as it emerges. This also involves ongoing discussions with ACM around permissions management for academic and creative use in recorded and archived content.

###### Diversity, Equity, and Inclusion Committee

Chair: Tony Baylis

*Mission:*

Our nation and global society faced unprecedented times as we experienced a global pandemic that impacted millions across the world. A year where the COVID-19 pandemic illuminated inequities and racist thinking that have existed for generations but went unaddressed. The pandemic revealed many issues related to Diversity, Equity and Inclusion (DEI) in our world today.

Some of the DEI issues highlighted inequities in healthcare systems, food supply, and a workforce made up of who was a non-essential or essential worker.  Native Americans, Hispanics/Latinx, and Blacks were the hardest hit by COVID-19. Due to the pandemic, we were faced with trying to navigate working from home and striving for a work/life balance while working at home. We often read stories on how the work/life balance fell all too often on women and we saw women leave the workforce four times more than men. And due to the isolation forced upon us by the pandemic, mental health issues climbed by 31% according to data reported by the National Institute of Mental Health. Individuals with disabilities, our veterans, and our elderly also suffered as a result of COVID-19.

Over the course of the year, we also began to see a growing awakening of the plight of hate against Blacks, Asian/Pacific Islanders, LGBTQ+ community, and people of different religious beliefs. The murder of Mr. George Floyd sparked a movement called Black Lives Matter that triggered demonstrations and protests seen across the world. As a result of various events, Diversity, Equity, and Inclusion was raised to new challenging levels, but there were also some positive things that occurred during this past year.

The SIGGRAPH community of writers, researchers, animators, artists, and creators played a role in creating content that presented a perspective of hope and optimism. ACM SIGGRAPH’s Executive Committee, Chairs and Standing Committees faced these challenges and worked harder on its mission, community and culture commitments. The Diversity, Equity, and Inclusion Committee assisted the organization in being innovative and creative by fostering activities and efforts that would help support a community where all could feel they had a place to belong in the ACM SIGGRAPH organization.

*Accomplishments*

* We collaborated with our Executive Committee to show our support and solidarity of key issues in written statements to the community
* With the support of the conference chair, we moved to fully integrate the DEI Summit into the North American Conference in 2021 expanding the previously separate event included throughout the conference
* We began collecting social media data on our Webinars and D&I Summit in 2020 and in 2021, we will be collecting demographic data on leadership, committees, and conference attendees
* We expanded our webinar series (ex. Queer in Gaming Series)
* We collected feedback for summit events in the SIGGRAPH North America and SIGGRAPH Asia conferences
* We held a D&I Summit for 2 days that occurred before the SIGGRAPH North America conference
* We added Equity to our Committee name to elevate the importance of it in our community.
* We added committee members to our standing committee, other committees, and NA conference to offer advice on topics related to Diversity, Equity, and Inclusion
* Members from our Diversity, Equity, and Inclusion committee participated as panelists, speakers, committee members for other conferences such as IEEEVR and Eurographics
* Our call for submissions for the SIGGRAPH 2021 DEI Summit was very successful resulting in 25 submissions
* We conducted Unconscious Bias training for our Student Volunteers for the 2021 North America conference

###### Education Committee

Chair: Ginger Alford

*Mission:*

The Education Committee works to support educators in computer graphics and interactive techniques.  This encompasses technical, creative, applied and interdisciplinary studies in higher education that intersect curricular areas of computer science, engineering, art, design, and related disciplines. The Education Committee undertakes a broad range of projects and activities in support of the computer graphics and interactive techniques education community, such as developing curriculum guidelines, providing instructional resources, organizing SIGGRAPH conference-related activities and outreach.

*Accomplishments:*

* CONFERENCE ACTIVITIES – The Educators program at the conference is comprised of the Educator’s Forum, with juried and curated content that is organized by the Education Liaison, as well as Education Committee led BOFs.  Strong coordination with the Education Liaison throughout the conference planning process resulted in Groovy Graphics Assignments, Courses, and Talks through the Jury as well as BOFs organized by committee members.
* BOFs – Education Committee Members have provided leadership to lead and/or facilitate many BOFs for the education community at both SIGGRAPH ASIA and SIGGRAPH North America, including
  + XR Education and Hybrid Horizons
  + Skilling up a Diverse Workforce: Content Creation in a Post Pandemic World
  + Massive Collaborative Animation Projects: Annual Meeting
  + Undergraduate Research Alliance
  + Virtual Production in Education
  + Faculty Change Readiness and EDI: Do Design Programs Really Want Change?
  + Faculty Submitted Student Works
  + VRestaurant: What does VR Education taste like?
  + The Education Committee BOF Coordinator (Bill Joel) is responsible for soliciting, coordinating and managing the Education Committee BOF program.
* SIGGRAPH 2021 INDUSTRY PANEL – The SIGGRAPH Education Committee organizes and submits a curated Panel each year that includes representatives from industry who are participating in the career fair.  This is always very popular.  This year’s Panelists were coordinated by Johannes DeYoung and included Brooke Keesling (BentoBox Entertainment / ASIFA Hollywood), Rubaiat Habib (Adobe), and Brittany Biggs (University of Hawaii at Mānoa / Unreal Fellow).
* LIAISONS and ORGANIZATIONAL COORDINATION – The Education Committee identified a need to increase communication and coordination within the SIGGRAPH organizations and designated individuals to engage with other Standing Committees.  We designated a Digital Arts Committee Liaison (Johannes DeYoung) and a Diversity, Equity, and Inclusion Liaison (John Cays); both have been attending those meetings and keeping the Education Committee informed about activities across the organization and identifying opportunities to collaborate.  Additionally we have members of Chapters (Kevin McNulty) and External Relations (Miho Aoki).
* EUROGRAPHICS COLLABORATION – Education Committee Members have served as Eurographics Education Program Reviewers and distributed education-related Eurographics announcements.  The Eurographics Education Committee Chair, Beatriz Sousa Santos, regularly attends SIGGRAPH Education Committee meetings.
* ACM EDUCATION COUNCIL – The Education Committee appointed Susan Reiser as our representative to the ACM Education Council.  Susan will lead SIGGRAPH involvement in the revision of CC202X is the next iteration of the Curriculum Guidelines for Undergraduate Degree Programs in Computer Science that is produced by The Joint Task Force on Computing Curricula Association for Computing Machinery (ACM) IEEE Computer Society
* EDUCATORS AWARD – Education Committee member Glenn Goldman participated as a member of the Educators Award Committee, along with active Education Committee advisors Gitta Domik-Kienegger and Rejane Spitz.  They solicited nominations, promoted and explained the criteria and generally promoted broadly among educators.
* SPACETIME CONTEST – This long-established juried art contest, led by Anna Ursyn, persisted even in the pandemic era. This year there were 114 worldwide submissions.  Seven jurors representing geographically distributed institutions, including three different countries selected 48 pieces to be included on the Education Committee website.  Three winners were chosen and received complimentary Registrations.  The jurors represent universities in five different states as well as Saudi Arabia and China.
* FACULTY SUBMITTED STUDENT WORK SHOWCASE – This event provides a platform for faculty members to share student assignments and student work in response to the assignments.  In 2020, 24 different schools submitted materials.  Those schools represented 131 assignments from 55 different faculty and included 448 students samples.  From those, a working group of Education Committee members, led by Rick Lewis, validate the materials as appropriate and complete for providing as searchable instructional resources on the Education Committee website.  Additionally, the Education Committee members create a video to exhibit a variety of student sample work.
* INSTRUCTIONAL RESOURCES – A need for “curated lists'' was identified in 2019 as for instructors offering semester courses in a topic offered from the perspective of different departments.   The Education Committee Resources Subcommittee, led by Wobbe Konning and supported by Johannes DeYoung and Seth Holladay, prepared a template for these and published content for these topics:
  + “Rigging for 3D Computer Animation”
  + “Physical Simulation Programming”
  + Additionally, we highlight and link select conference courses from the Digital Library including Fundamentals Seminar and provide useful organizing BOF slides such as “Teaching Remotely with Immersive Technology.”
* VR/AR EDUCATORS WORKING GROUP –  The Education Committee sustained monthly virtual meetings focused on VR/AR education throughout the year to keep this community engaged and to shift its focus to pandemic era teaching.  This effort grew out of a 2019 BOF led by Barbara Mones and Miho Aoki to build and sustain a focused group within the education community.
* SOCIAL MEDIA – The Education Committee Communications Director, Anie Miles, has increased followership across all education committee social platforms (Facebook, Twitter, Instagram, Linked In) and coordinated with other the SIGGRAPH organization communications to write and post 3 SIGGRAPH Blog articles

*Goals:*

* **Increase year-round engagement with the education community.** The past year of virtual work has established a wish to continue a more active year-round format of activities. The primary goal is to provide infrastructure for broadening and strengthening the SIGGRAPH education community.
* **Outreach to K-12 educators**. The committee has identified a need to support educators at the K-12 level to support a lifelong pipeline of introducing students to the art and science that is SIGGRAPH. We will do this through continued coordination with the SIGGRAPH community, particularly the DEI and Chapters Standing Committees. We will also create a new Committee position to support and advise on this effort.
* **Review communication tools and strategies.** The Education Committee has identified a need to re-evaluate the effectiveness of the current communication tools and establish an intentional and coordinated path forward. This need encompasses a review of long-established current listserv and website tools but also a need to adopt emerging platforms for interactive social engagement.
* **Continue to sustain and strengthen existing popular programs in a hybrid world.** Several initiatives from the last year that were well received in person at the 2019 conference need to be reimagined and expanded with experience of 2020 in mind. In particular, the “In Good Company” pilot programs offered in cooperation with the Exhibition and SIGGRAPH Village is a candidate for year-round webinar. The VR/AR Educators working group that grew out of an in person BOF has moved online pretty effectively and serves as a model for community building. Exhibitions that we have displayed in SIGGRAPH Village can be moved online with proper permissions and coordinated video platforms within the organization.
* **Bring a Dome to the physical conference.** The Education Committee developed a proposal, led by Nick Jushchyshyn, in early (pre-pandemic) 2020 to have an 18-foot physical dome in the SIGGRAPH Village as a resource for any and all Standing Committees to use for immersive demonstrations and showcases. We keep this goal in mind when we return to an in-person conference.

###### Early Career Development Committee (S3)

Chair: Marisa (Ginger) Tontaveetong

*Mission:*

The S3 committee, in their role as the Early Career Development Committee, continued to bring additional year-round value to ACM SIGGRAPH student members and emerging professionals. S3’s mission is to plan, develop, and facilitate activities that assist with integration into the larger SIGGRAPH community and enhance career development. Emerging professionals are defined as undergraduate and graduate students, as well as, those within the first three years of graduation.

S3 also provides continuity and institutional memory for the student volunteer and intern programs at SIGGRAPH North America and SIGGRAPH Asia and collaborates with other SIGGRAPH entities (conferences, chapters, committees, etc.) on issues that affect student and emerging professional members. S3 has four key programs - resume and reel reviews known as S3R3, mentoring for ACM SIGGRAPH student members known as MentorMe, XSV, and a series of webinars and talks.

*Accomplishments:*

General Updates

* Created a year-round calendar for S3 events including S3 review, webinar, in sync with our internal social media marketing.
* Updated branding deck, pitch deck, program deck, and social media branding.
* New website updated.
* Responded to the COVID-19 pandemic by offering additional programming and establishing a close working relationship with the SIGGRAPH 2021 Student Volunteer Committee (SVSC) and other EC committees.
* Established year-round Discord channel with monthly activity to retain engagement.
* Onboard new committee members to help with scaling activities for 2021.

S3 Resume and Reel Reviews (S3R3)

Overview:

* Conduct reviews four times per year – online at the virtual SIGGRAPH 2020 and SIGGRAPH Asia 2020 conferences, as well as two additional virtual sessions in the Winter and Spring.
  + Students receive feedback on their demo and resume by one of our Industry Professional Reviewers on a one-to-one basis through zoom meetings; students are matched based on their desired work field and job skills.
  + Because of time zone differences, for SIGGRAPH Asia, the reviews were conducted as a video recording with a choice of written feedback from reviewers to students.
* A number of reviews completed:
  + Completed 70 reviews online through Zoom at SIGGRAPH 2020 – 70 unique reviews; 26 reviewers; filled up fastest review is Art & Animation and most requested is 3D Modeling/Generalist. We initially had 63 pre registration but also took in 7 leftover from the sign up in SIGGRAPH conference portal.
  + Completed 38 reviews (recording and written format) for virtual SIGGRAPH Asia 2020
  + Completed 13 reviews online during Winter 2020
  + Completed reviews for 67 students and emerging professionals online during Spring 2020; signed-up 40 reviewers, which included new reviewers via Pioneers channels

MentorMe:

* Under revision for more robust programming
* Reviewing Women in Animation mentorship/VES/IGDA offerings and experiences
* Will resume in 2022.

XSV Program:

* Was put on hold in 2020 due to pandemic changed circumstances and shifting schedules for conference.

SIGGRAPH 2020 Overview:

* XSV application included three rolling deadlines - November 20, January 22, May 27 - to address the delay in application submission experienced with the longer submission period.
* Received 27 XSV applications and 10 project proposals for 15 XSVs (all conference-specific).
* Due to COVID-19 progression throughout January and February, XSV pairing was delayed and ultimately halted until a decision regarding the SIGGRAPH 2020 conference.
* As the SIGGRAPH 2020 conference moved virtual, XSV pairings and decisions awaited notification regarding volunteer needs. The team followed up with applicants and project proposal submissions.

SIGGRAPH Asia 2020

* This was conducted as a recorded review due to timezone. 38 total reviews were conducted with 14 reviewers. 8 were art related reviews, 5 were tech reviews, and one other.

Student Feedback:

* *"Overall, I appreciate the opportunity to receive a professional review as I find it helpful to improve my technical skills and present myself as a worthy candidate."*
* *"It's so nice and extremely helpful to have someone in the field review my profile. I did one when I first got into the graphics field, that's where I know I have to have a portfolio to showcase my work."*
* *"Great feedback on things I overlooked in the resume writing, such as visual hierarchy and writing clearer job titles. Show-reel review was also very clear on what steps I should take next to improve it."*

Webinars 2020:

* Conducted 6 webinars overall (40 participants in total across 6 webinars)

*Goals:*

* Update all S3 activities to integrate with SIGGRAPH organization’s marketing in a timely manner to gather the most exposure and have it uploaded to the SIGGRAPH calendar.
* Webinar is a more interactive format to serve for interactivity.
* Build monthly engagement activity on Discord server to engage students and SIGGRAPH student chapters.
* Mentor Me program twice per year and revise outline for better long term outcome.
* Establish in addition to the current quantitative metrics a qualitative metric that will help us see the growth of students/ early career professionals that utilize our program.
* Streamline process further and visit automation processes to be able to scale.
* Populate the website with resources.
* New mentor Me structure that is more robust.
* Add more networking events.

###### External Relations

Chair: Tomasz Bednarz

*Mission:*

Manages relationships with professional societies and organizations that are external to ACM. Working

with the EC this committee identifies and establishes relationships with new organizations according to

the current strategic plan.

*Accomplishments:*

* We renewed our partnerships with SID.
* We also renewed partnership with Laval Virtual and looked into an option to invite some of their team and the ETech chairs for this year and next year on board with making selections at ETech this year for LAVAL 2022.
* We have straightened collaboration with the Communications Committee in regards to the promotion exchange with partners (part of our cooperation agreements).
* We have held the annual round table meeting with the Digital Content Association of Japan in September 2020.
* We hosted “Meet the Partner” session at the SIGGRAPH 2020 conference and VIEW, ISEA, RTC, FMX, VFX RIO, DCAJ and SPARK CG have participated in the presentations.
* After the roundtable meeting, DCAJ has invited Paul Dietz (S2021 E-tech chair) and he spoke at their DC-EXPO event.
* CG-ARTS is involved in SA2021 while DCAJ is promoting the conference too.
* CG-ARTS' member is a local committee member of SA21 and they are sending out promotional email messages about SA21 to their members.

*Goals:*

* To sign cooperation agreements with SAE and Ars Electronica
* To work together with the CAFAB (Computer Animation Festival Advisory Group) in joined agreements.
* To define and shape the idea of a “Partners Lounge”. This is the option to an scalable Partners Space at SIGGRAPH.
* To collaborate with the Diversity, Equity, and Inclusion Committee to come up with a type of agreement that includes DEI initiatives. A first example would be together with Eurographics and IEEE VR.
* To find ways to support CG-ARTS to work closely with the Education Committee.

###### Governance Committee

Chair: Scott Owen

*Mission:*

The Governance Committee examines the policies, procedures, and structure of ACM

SIGGRAPH and recommends changes to the Executive Committee who approves or rejects

them. All of the changes below are reflected in the ACM SIGGRAPH Policy Guidelines.

*Accomplishments:*

* In the past year the Governance Committee has recommended, and the Executive Committee has approved, the following significant changes:
  + Recommended formation of a new Membership Committee (formally was combined with Communications).
  + Changed policy for approving unbudgeted expenses.
  + Changed policy for selection of technical Papers Chair for SIGGRAPH and SIGGRAPH Asia Conferences.
  + Changed policy so that Advisory Board membership is public.
  + Changed policy about the minutes of EC meetings about what is reported and how they are approved.
  + Changed policy about selection process for CAG and SACAG Chairs.
  + Recommended that there be an ex-officio EC member who is a SIGGRAPH student and the Early Career Development Committee is responsible for recommending this person to the EC for approval.
  + Recommended the formation of an ad-hoc committee responsible for year round online events.
  + Several changes in financial policies.
  + Changed name of Diversity and Inclusion Committee to Diversity, Equity, and Inclusion Committee.
  + Changed policy for selection of Advisory Board Chairs
  + Recommended policy for submissions to Conference or Standing Committee programs that violate the ACM SIGGRAPH values on Diversity, Equity, and Inclusion.
  + Recommended policy for rescinding award from any awardee who violates ACM SIGGRAPH policies.
  + Changed membership requirements for ACM SIGGRAPH volunteers to align with ACM requirements.
  + Modified the description of the Digital Arts Committee.
* All of the above changes were incorporated into new versions of the ACM SIGGRAPH Policy Guidelines at https://www.siggraph.org/acm-siggraph-policy-guidelines/

*Goals:*

* Define member benefits for different levels.
* Examine Board Responsibilities:
  + Does the board conduct a formal orientation for new board members and require all board members to sign a written agreement regarding their roles, responsibilities, and expectations?Has the board conducted a formal, written self-assessment of its performance within the past three years?
* Formalize Standing Committee Chairs Reports
* Communication with and monitoring of Advisory Boards.
* Anything else that comes to our attention.

###### History Committee

Chair: Mary Whitton

*Mission:*

The committee’s goals and priorities are: (1) to preserve the stories and artifacts of our community and industry, (2) to make the collected materials broadly accessible by the public, and (3) to document the impact of SIGGRAPH on the development of computer graphics, the computer graphics industry, and industries enabled by graphics and imaging.

*Accomplishments:*

* Volunteer Development:  Re-engaged Adele Newton and Scott Lang in SIGGRAPH through History activities
* Major Focus: SIGGRAPH 50. Core team (Whitton, Kasik, and Newton) meeting since Fall 2020.
  + Met with S21, S22, S23 chairs (or representative) and CAG chair to frame working relationships and high level themes (Past, Present, Future--but said in a marketing way).
  + Kasik is  liaison to S2021 Retrospective Chair; History Comm. supporting S21 (introductions, participation on panels) as requested.
* Committee sponsored panels for S2021: Two are planned in conjunction with Graphics Journeys story gathering project and the Retrospective panels.
* Major Focus:  Design and population of history.siggraph.org
  + Repurposing the Digital Art Archive infrastructure for SIGGRAPH content.
  + Information architecture established in Fall 2020; population of site began January 2021.
  + The site is available now, but will officially launch around S2022.
* Focus: Year Round Engagement--online events
  + February 18 - webinar Preserving your Legacy.  Goal--prevent important materials from being lost.  Jointly organized with the LA Chapter, Pioneers, Babbage Archive, and History Committee.
  + March 31 - ACM SIGGRAPH Women of Influence. Five women told their stories of how they came to computer graphics and involvement with SIGGRAPH.
* Focus: Gathering Stories
  + (tentative title) Graphics Journeys. Growing off interest shown in the stories from the Women’s panel, we are gathering short (15 min) interviews with pioneers about how they came to graphics and SIGGRAPH involvement.  Goal is 10 completed and premier at  S2021.
* Other Continuing Activities
  + Graph-based indexing system (Julian Gomez and Paul Strauss).
  + Deep archiving of digital media assets (Dana Plepys).
  + Transfer of personal and corporate archives to Babbage and planning for more (Joan Collins).
  + SWAG inventorying, collection, digital documentation, archiving (Mitchell and Whitton).

*Goals:*

* Concerns/Issues: Funding for SIGGRAPH50 activities
* Volunteer Development:  Recruit for IMPACT position; begin grooming next history chair.
* Major Focus: SIGGRAPH 50. Core team (Whitton, Kasik, and Newton) meeting since Fall 2020.
  + ID leads and formalize working relationships with S2022 and S2023.
  + ID team lead for organization focused SIGGRAPH 50 activities and project leads for long-lead-time activities such as  seminal papers, vol. 2, and an animation festival retrospective.
  + Select and launch the long-lead-time projects.
* Major Focus:  Population of history.siggraph.org
  + The site is available now, but will officially launch around S2022.
* Focus: Year Round Engagement--online events
  + 4-6 events that have history content and complement goals of other committees, e.g., curriculum development.  Partner to do these.  Increase the level of international content.
* Focus: Gathering Stories.
  + (tentative title) Graphics Journeys.  Complete 20 interviews, edit, make available.
  + Get all existing video interviews transcribed, edited, and posted.
  + Get the HD source tapes from the movie interviews back in ACM hands.
* Other Continuing Activities
  + Graph-based indexing system (Julian Gomez and Paul Strauss).
  + Deep archiving of digital media assets (Dana Plepys, SIGGRAPH and ACM IT).
  + Transfer of personal and corporate archives to Babbage and planning for more (Joan Collins).

###### Interactive and Immersive Experiences

Chair: Mark Billinghurst

*Mission:*

The vision of the Immersive and Interactive Environments Committee is to support researchers and practitioners involved in the design and creation of interactive and immersive experiences ​and promote them throughout the SIGGRAPH organisation. The Immersive and Interactive Environments Committee was created to raise awareness of Interactive and Immersive Experiences at the Siggraph conferences and in the broader community. This includes creating a web portal showcasing Interactive and Immersive Experiences, identifying leading examples of Interactive and Immersive Experiences, promoting education and innovation in the area, etc.

The 2019-2020 year was the first year that the committee was in operation, and this was mostly spent focusing on establishing the committee, arranging regular meetings and getting an initial program of activities started. Our efforts have been significantly hampered by the COVID-19 pandemic, but we anticipate being able to increase our activities from July 2020 onwards, as countries and institutions begin to open up again.

*Accomplishments:*

The 2020-2021 year was the second year that the committee was in operation, but our efforts were significantly hampered by the COVID-19 pandemic. We hope that we will be able to get back to more normal activity from the second half of 2021.

* Progress was made in the following areas:
  + Adding more members to the committee
  + Setting annual goals
  + Continuing regular meetings
  + Continuing a program of work to encourage more interactive and immersive technical paper submissions to Siggraph and Siggraph Asia
  + Coordinating with the External Relations Committee and other committees
  + Organizing events at SIGGRAPH and SIGGRAPH Asia
  + Beginning work on establishing a historical archive
* Specific accomplishments have been made in the following areas:
  + Membership: Over the past year two new members have been added to the  committee; Paul Dietz and Katrin Wolf.
    - Paul is a prolific inventor of technologies for interactive experiences. He has held senior research positions at Walt Disney Imagineering, Mitsubishi Electric Research Labs and Microsoft. He has a long history with Siggraph and currently the SIGGRAPH 2021 Emerging Technologies Chair.
    - Katrin Wolf is a professor for Human-Computer Interaction at the Beuth University of Applied Sciences, Berlin. Her research interests lie at the intersection of human–computer interaction and interaction design, focusing on how to make novel technologies more usable and useful.
  + We are still looking for more representation from Asia and Europe.
* Promoting Publications: One of the main goals for 2020/21 was to devise a plan for increasing AR/VR/Interactive submissions to the technical program of Siggraph and Siggraph Asia.  Laura Trutoiu undertook work in 2019 to explore this issue and drafted several steps that could be undertaken to address this issue. This work was disrupted by COVID, but in 2021/22 we will move forward with a plan for increasing interactive submissions.
* External Relations Committee: Mark Billinghurst has continued working with the  External Relations Committee, chaired by Tomasz Bednarz. He has been attending monthly meetings, specifically with a focus on helping identify opportunities for Siggraph to connect to the various AR/VR/Interactive conferences.
* SIGGRAPH Focused Communities/Guilds Meeting: Mark Billinghurst has been attending the bi-weekly meeting chaired by Mona Kasra. This is to coordinate with other committees and report on activities.
* EC Strategic Planning: Mark Billinghurst has attended most of the SIGGRAPH EC Brainstorming and Strategy Sessions. This included providing feedback on the SIGGRAPH strategic planning to date and ideas for future improvements to the conference and community.
* Presentations at Conferences: Birds of a Feather or Workshop sessions were organized at SIGGRAPH 2020 and SIGGRAPH Asia 2020. These were used to present the activities of the Interactive and Immersive Experiences Committee to the broader SIGGRAPH community, get feedback on the planned activities for the year and recruit new members. At SIGGRAPH 2021 we will be organizing a Frontiers Workshop on Interaction and how to increase interactive content in the technical program at SIGGRAPH.
* Professor Carolina Cruz-Neira has begun work on identifying historical interaction and immersion pieces that were significant in SIGGRAPH history. This is a first step to creating an archive of earlier influential work. This will be continued into 2021.

*Goals:*

* Establish a website for the committee and community.
* Create an online repository of previous significant interactive and immersive work at SIGGRAPH.
* Provide a recommendations report to SIGGRAPH for how to increase interactive and immersive experiences technical content at SIGGRAPH.
* Establish social media activity promoting interactive and immersive experiences at SIGGRAPH.
* Host Birds of a Feather and Workshop activities at SIGGRAPH and SIGGRAPH Asia.
* Create stronger connections to other SIGGRAPH committees.
* Work closely with SIGGRAPH program and technical chairs to increase the interactive and immersive experiences work at SIGGRAPH.
* Other activities and goals will be determined in the later half of 2021.

###### Information Technology Services

Chair: Aaron Hosier

*Mission:*

The Information Technology Services committee manages and supports various services for ACM SIGGRAPH including: the servers used to host organizational websites;  creating, maintaining and supporting email lists used within the organization for committees, conferences, and chapters; and the management and support of the ACM SIGGRAPH Google GSuite site.

The ITS committee also participates in organizational strategic efforts as part of the Digital Presence strategy team working on:

1. Partnering with the History Committee to identify, collect, and organize assets owned or available to ACM SIGGRAPH
2. Working with the Communications Committee on the redevelopment of the ACM SIGGRAPH website.
3. Involved with the development and deployment of the Discord service for ACM SIGGRAPH.

*Accomplishments:*

* Collected over 13TB of digital assets from various ACM SIGGRAPH resources, including the entire available Siggraph Video Review video sets and all digitized slide decks from conference presentations available at this time.
* Creation of and starting the process to archive and organize all recorded Zoom meetings using our Google Apps share drives.
* Upgrades to the current ACM SIGGRAPH website to enhance calendaring and contact form functionality.
* Yearly conference preparation which consists of:
  + Creation and setup of 30+ email lists.
  + Setup and then working with the vendors to test/deploy the conference websites for SIGGRAPH NA and SIGGRAPH ASIA.
  + Creation of the Google Drive structure used by conference administration for all conference related materials.
  + Working with the vendor to create and deploy the static archive version of the previous year’s conference website.

*Goals:*

* Deployment of the Discord service to the wider ACM SIGGRAPH organization along with working with the Communications Committee (and potentially others) on the support and management of the service.
* Work with the Communications Committee on the design and deployment of a new ACM SIGGRAPH website.
* Deployment of the developed Volunteer database and working with the Communications Committee to ask the ACM SIGGRAPH community to submit their information.
* Setup training sessions and create documentation related to Google Apps for things such as:
  + Maintaining Google Groups
  + Managing Google Shared Drive access
* Review of the current email list system to:
  + Work through the lists and purge/retire those no longer needed
  + See if it’s still the best option for email lists
  + Complete retirement of old ACM SIGGRAPH servers

###### International Resources Committee

Chair: June Kim

*Mission:*

Promoting ACM SIGGRAPH and Connecting our global community of computer graphics and interactive techniques with both on-site and year-round activities.

*Accomplishments:*

First Virtual conference – SIGGRAPH 2020:

Organised ‘SIGGRAPH for Beginners’ session one day before the conference starts via Facebook live – Over 3500 views made in 3 days.

* Organised 9 sessions of:
  + Through Digital Innovation Angle in Australasia
  + The CG industry, research and education in Asia
  + Computer Graphics in the continent of Africa
  + What’s happening in Japanese research institutions and industry now?
  + Women in CG
  + Computer Graphics in Latin America
  + Innovations in Creative Industries in Russia
  + Overcoming production hurdles in CG industry in the age of social distancing
  + This year, we tried to highlight a particular topic rather than calling all our sessions ‘CG+ region’ which we think will attract more audiences. Besides, we featured sessions in under-discovered regions and countries such as North Africa and Russia. Average number of each session was 70-80. IRC also helped the Interactive & Immersive Experience Committee to run a session.
* We produced a multi time zone available conference calendar and shared via our social media channel. The one posting had over 2000 views.
* IRC was the first group creating a facebook frame with Lego Alain, IRC logo and banner ‘I attend SIGGRAPH 2020.’ And spread via social media channels. Many of the attendees added them on their Facebook profiles.

First Virtual conference – SIGGRAPH Asia 2020:

* Organised 6 sessions including:
  + SIGGRAPH Asia for Beginners
  + Women in CG
  + ACM SIGGRAPH: Getting to know Education, DAC, IRC and Chapters
  + SV/IRC special-Beyond the student volunteer experience
  + CG in Japan, The destination of SA2021
  + Working Virtually: Pipeline changes in studios and research institutes
  + Unlike SIGGRAPH 2020, we tried a webinar format which was not successful since the interaction is important for sessions that we run. Attendance rate was much lower compared to SIGGRAPH 2020. Our focus here was collaboration with other committees to feature more about what ACM SIGGRAPH and what we do as a part of ACM SIGGRAPH org.
* Creating healthy and collaborative committee environment:
  + Though there has been difficulty to keep up a team due to instability and family loss that some members had faced at this stage, we were a team to share each other’s difficulty and loss.
  + All information from EC and collaboration with other committees were fully shared with members in fortnight meetings.

*Goals:*

* Getting and staying motivated as one team:
  + Much depressing news demotivated the activities of IRC especially straight after SIGGRAPH Asia 2020. It is time to get back to work together and be active!
* Focusing on year-round activities

###### Lifelong Learning Committee

###### **Chair: Jonali Bhattacharyya**

*Mission:*

The Lifelong Learning Committee develops online educational materials such as webinars, online courses (SIGGRAPH University), and ACM Books and state of the art reports to support practitioners and other members wanting to expand their skills by learning about new areas.  Leverages the knowledge base of our membership in creating these materials.

*Accomplishments:*

Formed the initial team, with 4 members. Have set the agenda for this committee- fully online and global format, offer free professional development resources for career moves, skills enhancement, and new skills in artistic and technical areas. SIGGRAPH University will be the main focus of this committee, with a new website presenting content in a navigable and searchable format, clearly indexed content and with a recommendation setup. This will be supported by a separate YouTube channel, featuring playlists in Artistic and Technical skills, as well as curated contents such as Courses and Panels from the conference. In addition we plan to work on generating original content from our user base such as workshops and bootcamps on new technology, week-long courses, and brief video lessons etc.

All work will be done as a group, but members will lead specific areas such as:

* Content Curator: Responsible for selecting and organizing content from existing

sources, and curating new content.

* Outreach and Programs Coordinator: Responsible for global outreach, programs and

events, gathering data from the user community.

* User Interface Coordinator: Responsible for presentation and design of content,

tagging, content organization, recommendation engine.

* Producer: Responsible for Scheduling and Facilitating.

We have established contacts with the Communications Team regarding website development and other needs as per our goals for the next year.

*Goals:*

* Main goal for the first year is to work on the SIGGRAPH University. We will work on curating existing content and creating the basic structure for a new website.

###### Membership Committee

Chair: Corinne Price

*Mission:*

The ACM SIGGRAPH Membership committee’s mission is to better serve the needs of our membership and our volunteers by coordinating all ACM SIGGRAPH activities designed to benefit our members and exploring new ways to enhance the value of membership. The Membership Committee works with the ACM SIGGRAPH Executive Committee to define member benefits and membership rates, as well as serves as lead of the SIGGRAPH Village at both the SIGGRAPH and SIGGRAPH Asia Conferences.

*Accomplishments:*

* Onboarded new Membership Chair, Corinne Price.
* Met with multiple committee chairs and liaisons to discuss efforts in progress and plans for the upcoming year:
  + Adam Bargteil – EC President
  + Ashley Cozzi – ACM Liaison
  + Brad Lawrence/David Spolestra – Budget Committee
  + Adele Newton – Communications Chair
  + AJ Christensen – Chapters Committee/Online Communities
  + Paul Strauss – Online Communities EC Rep
  + Adam Finkelstein – Nurturing Communities Strategy Committee
  + Preston Smith – Nurturing Communities/Membership Review
* Presented to ACM SIGGRAPH Brainstorming Strategy Session on 2/25 regarding the Membership Committee Mission, Goals, and immediate priorities.
* Held initial meeting with the SIGGRAPH 2021 Chair and conference management on 3/02 to discuss ideas for a virtual ACM SIGGRAPH Village at SIGGRAPH 2021.
* Ideas include hosting a series of 4 talks geared towards:
  + Chapters (creating new, planning events, booking traveling CAF, etc.)
  + Pioneers (what is a pioneer, how to become one, what do they do, etc.)
  + Volunteering (how to get involved in next year’s conference, how to get involved in the organization, what type of opportunities are there, etc.)
  + Affiliates (discuss efforts of Nurturing Communities, Education, Digital Arts, Student and Early Career, etc.)
* Held follow-on call on 5/13 and reviewed ideas for the upcoming SIGGRAPH 2021 conference, including using gamification to drive attendance.

*Goals:*

* Create a repository of member benefits (i.e., programming, discounts, access, etc.).
* Brainstorm ways to enhance the member benefits and if there are any gaps to consider.
* Explore various membership models and review against ACM SIGGRAPH’s current membership model (i.e., benefits, rates, etc.).
* Coordinate with ACM to understand if there are ways to enhance our membership database to better inform our benefits and grow membership (e.g., CRM tools).
* Manage the SIGGRAPH Village at the annual SIGGRAPH conferences.

*Issues/Concerns:*

* Inability to appropriately redefine membership database and/or structure since it is closely managed by ACM and could ultimately affect all SIGs.

###### Nominations Committee

Chair: Rebecca Strzelec

*Mission:*

Selects slate for the annual Executive Committee election. Recommends candidates for Chairs of Standing Committees to the Executive Committee.

*Accomplishments:*

The Nominations Committee facilitated the interviewing and selection of the Executive Committee slate for 2021. The slate is as follows:

ACM SIGGRAPH

* Director A
  + Shi-Min Hu
  + Masa Inakage
* Director B
  + Mashhuda Glencross
  + Barbara Mones
* Director C
  + Brad Lawrence

The Nominations Committee managed advertisements/applications, conducted interviews, assisted and/or made recommendations for the following for Chair positions:

* Elizabeth Baron, EC Chair Elect
* David Spoelstra, EC Treasurer Elect
* Tomasz Bednarz, External Relations Committee Chair
* Justin Solomon, Research Chair
* Adele Newton, Communications Chair
* Corinne Price, Membership Chair
* 10 Potential EC Candidate interviews

*Goals:*

As we have yet to have another in person conference since COVID-19 the two suggestions for in person activities carry over for 2021—with hopes for an in person SIGGRAPH 2022.  We will not hold any type of Nominations event to meet the EC candidates (panel, reception, mixer etc). It has been determined that it is a waste of money because even when listed on the schedule well in advance very few members attend. Additionally, the Nominations Committee recommends that any printing of PR materials to advertise for the election be eliminated from the budget. It is also a waste of money.

###### Publications Committee

Chair: Stephen Spencer

*Mission:*

Documents the content presented at our annual events, using channels that are efficient and cost-effective. Works with ACM Publications Board as new situations arise and on items with broader implications.

*Accomplishments:*

* Ongoing initiatives include working with the organizers of numerous sponsored events to collect content and prepare the proceedings of their event, working with vendors to prepare physical deliverables for distribution, and working with ACM personnel to import that content into the ACM Digital Library.
* Over the past twelve months, I have worked with the organizers of the following sponsored events: SIGGRAPH 2020, SIGGRAPH Asia 2020, CSCS, CVMP, DigiPro, ETRA, I3D, MIG, SAP, SCF, SUI, VRST, and Web3D.
* The addition of our annual conference Art Papers content to a new issue of the PACMCGIT publication – an ACM journal-level publication – has been a challenging and collaborative effort. (The first iteration of any publication has its own unique challenges; future years should go more smoothly.)

*Goals:*

* Working with conference organizers, program chairs, and ACM personnel to rewrite several of ACM’s rights management forms to better serve the conferences’ needs.
* Continuing to improve the documentation available to authors of works submitted to sponsored events.
* Helping ACM personnel update and make available documentation for the use of TAPS in preparing conference documentation, both for authors and for conference organizers.
* Continuing to provide support to ACM personnel on all matters related to TAPS. Our sponsored events have used TAPS since the fall of 2019, they are using it at present, and ACM will be making TAPS available to the ACM community in early 2021.

###### Research Career Development Committee

Chair: Justin Solomon

*Mission:*

The SIGGRAPH Research Development Committee aims to foster the growth and diversity of the graphics research community through mentorship, advocacy, professional development, and support.

*Accomplishments:*

* Recruited 35 committee members with a focus on geographic diversity and representing a broad range of career stages (undergraduate, graduate student, postdoc, faculty, research scientist).
* Launched teams to initiate programs and identify new efforts in key focus areas:
  + Advocacy: promote graphics research in industry and other research communities
  + DEI and Accessibility:  make graphics research an inclusive community by launching efforts to promote diversity, equity, and inclusion; advocate for increased accessibility of graphics conferences and research products
  + Mentorship: foster mentoring relationships between members of the graphics community at various career stages
  + Professional Development: link SIGGRAPH researchers to each other and to outside communities, as well as to provide opportunities for learning new research skills
* Designed and launched a website to promote committee efforts: research.siggraph.org.
* Took on responsibility for SIGGRAPH Thesis Fast Forward program.

*Goals:*

* Launch lightweight “conference coffee” program connecting members of the research community for informal conversations and networking.
* Launch undergraduate mentorship program intended to guide prospective graphics graduate students through the process of applying to MS and PhD programs.
* Launch mentorship program for junior faculty/researchers navigating research leadership, tenure, promotion, and related processes.
* Initiate systematic processes for nominating junior researchers for relevant awards and grants.
* Assist in technical papers awards programs for SIGGRAPH conferences.

###### Specialized Conferences Committee (SCC)

Chair: Paul Kry

*Mission:*

Approves and monitors specialized conferences to ensure that they are financially and intellectually healthy and aligned with the mission of ACM SIGGRAPH. Promotes awareness of the specialized conferences and the resulting archival content to the broader community and works to improve the integration of the specialized conferences with other SIGGRAPH events.  Together with the External Relations Committee, the SCC works to strengthen existing ties and identify new venues, emerging themes, or potential relationships with other conferences and organizations to broaden the scope of SIGGRAPH.

*Accomplishments:*

* With all specialized conferences running in virtual formats due to covid, most have likewise taken on low cost models with minimal budgets. This has likewise  generally permitted larger attendance at these events. Given the simplicity and minimal risk of the small budgets of specialized events, the SCC chair has taken on the responsibility of approving the PAF and TMRF requests, without consulting the larger committee.
  + For 2021, this so far includes 15 events (sponsored, co-sponsored, and in-cooperation).
* The committee has also started on two strategic efforts.
  + The first is the creation of awards at the level of individual specialized conferences, to raise the importance of these venues while also supporting (elevating) members of those communities. The Symposium on Computer Animation (SCA) is the first to put this in place for 2021, with the creation of a dissertation prize and early career research award.  The procedures and process for creating such awards have also been given to and taken into consideration by the steering committees of Interactive 3D Graphics and Games (I3D) and High Performance Graphics (HPG).  It is expected that these conferences will be able to form an awards committee and have a selection process in place for 2022.
  + The second initiative has been to collect data on the performance of all sponsored and co-sponsored events (and in some cases, related events sponsored only by Eurographics). The front end of this will be visible on the SCC portion of the org web page, with a visualization of conference locations, conference dates, and deadlines.  These visualizations are being developed with observableHQ with help from a volunteer.  More detailed data involving dates, submissions, and acceptance rates will be shared with conference steering committees to permit better planning.

*Goals:*

In the next year there are three main objectives for the committee:

* First, the chair will re-establish contact with the previous sub-committee to explore how they can contribute to the new committee.
* Second, we plan to update the SCC component of the ORG webpage to provide useful information to organizers and participants.
* Third, we will establish meetings with steering committee chairs throughout the year to promote important ideas, which include the creation of awards, early submission of PAF and TMRF forms, reminders about permission forms and deadlines, and generally sharing best practices.

###### Year-round and Online Activities Ad-hoc Committee

Chair: Adam Shay

*Mission Statement*

The mission of SIGGRAPH Online Events is to provide year-long content that is accessible to all, without any membership requirement. The Online Events Committee (OEC) is a service group which functions to support various SIGGRAPH committees and external contributors in the production of year-long virtual events and activities covering a diverse set of topics, demographics, and host locations.

*Accomplishments*

* Rapidly expanded event coverage and types. With an original goal of 2 events per month for the first half of 2021, the OEC supported over double the initial goal by February.
* Established and supported the creation of multiple recurring event series
* Tested multiple platforms and established a fairly consistent production workflow for other committees to easily adopt

*Goals*

* Continue implementation with the rest of the organization for further sustainability and support.
* Expand marketing of events post-launch to ensure the content library is being utilized
* Continue recruitment for a wider volunteer base to continue aspirations of global coverage.



## Advisory Boards

###### Computer Animation Festival Advisory Board (CAFAB):

Chair: Jason R.M. Smith

*Mission:*

The Computer Animation Festival Advisory Board was established with the goal to provide a long term vision to the CAF whilst promoting the SIGGRAPH Organization and Conferences through the international Traveling Show.

*Accomplishments:*

During 2020, the board paused conversations with new potential Traveling Show screening partners due to the continuing impact of COVID on conferences and events worldwide, and instead focused inwards.

The board increased communications to review inefficiencies and opportunities where internal processes can be improved to provide a better conference experience, and there were developments in alignment between the North America and Asia conferences which will improve the experience for Asia CAF submitters and attendees.

*Goals:*

Partnerships and distribution remain priorities for 2021-22 and will be re-evaluated to support long-term COVID related changes for SIGGRAPH and partner conferences once the impact is understood.

###### Art Advisory Group (AAG):

Chair: Victoria Szabo

*Mission:*

SIGGRAPH ART ADVISORY GROUP (AAG) was established in spring of 2019 to ensure that Art  Gallery and Art Papers continue to be valued conference programs serving the artist community and beyond. This newly launched group provides counsel to the Conference Advisory Group (CAG) and SIGGRAPH Asia Conference Advisory Group (SACAG), as needed, on multi-year, cross-conference issues affecting the Art Gallery and Papers community. AAG currently has 11 members (Chair & Ex-officio members). Ex-officio members are N-1, N, and N+1 art Gallery and Papers chairs for SIGGRAPH, SIGGRAPH ASIA, and the current chair of the ACM SIGGRAPH Digital Arts Committee (DAC). We also appointed the Presidents of ISEA and the New Media Caucus.

*Accomplishments:*

The AAG turned most of its focus in 2020-21 to developing the relationship and workflows with the Proceedings of the ACM on Computer Graphics and Interactive Techniques journal (PACMCGIT). We established a working relationship, developing in detail the processes and procedures necessary to implement this partnership, including a relationship with contractor partners who can help us define the workflow in the future in order to adhere more closely to the patterns of other journals in the series.

We have begun discussions about a template for a separate online publication that will serve as an Art Gallery catalog and Distinguished Artist Award feature. We are also working closely with the Arts chairs to think about longer-term arts exhibition and documentation, especially in light of the COVID-19 crisis and increasingly move towards virtualization. As of this writing, the Art Papers are being formatted for publication in the inaugural special issue. We see this partnership as an opportunity to forge closer ties between our community and the rest of the SIGGRAPH world, and that of ACM beyond it.

*Goals:*

* Our goals for the upcoming year are to debrief and to develop pipelines for multimodal Arts documentation looking ahead, and to coordinate with the Digital Arts Community standing committee around possible platforms for virtual and online art exhibitions and events. We will draw from the AAG expertise to help shape plans for these venues as well as to assess the 2020 and 2021 virtual conference to determine best practices and plans for both conference-related and year-round activities in these areas at both SNA and SA.
* We will continue to work closely with the Arts chairs to think about longer-term arts exhibition and documentation, assessing the PACMCGIT relationship and reflecting on the increasing moves towards virtualization.
* We will also continue to work together to think through how to diversify and expand our community, and provide opportunities for participation at more levels.
* We wish to develop more generational mentoring opportunities as well as chances to “mix” more substantively with other members of the SIGGRAPH community as a whole.
* In addition, we want to forge stronger connections with sibling orgs like ISEA, Leonardo, the New Media Caucus at CAA, and Ars Electronica, as well as within the ACM and IEEE families, perhaps through joint activities and events at our conferences and in other contexts.

###### Papers Advisory Group (PAG):

Chair: George Drettakis

*Mission:*

The full PAG's mission is to represent the institutional memory of the papers program, to support papers chairs, and  to provide continuity and communication among papers chairs. The PAG's appointed members have the following additional responsibility of recommending and vetting papers chairs to the SIGGRAPH and SIGGRAPH Asia conference chairs

*Accomplishments:*

* The PAG provided lists of recommended Papers Chair candidates for SIGGRAPH Asia and SIGGRAPH. The board also responded to various inquiries from the current Papers Chairs on matters of policy and difficult situations, including issues related to diversity and ethics that arose this year during the SIGGRAPH paper selection process.
* We appointed one new member (Olga Sorkine), replacing H. Rushmeier.
* We also assisted in the creation of the web page:<https://www.siggraph.org/papers-advisory-group/>  responding to the request for more transparency from the community.

###### Pioneers Steering Committee

Chair: Ed Kramer

*Mission:*

The ACM SIGGRAPH Pioneers are members of ACM SIGGRAPH who have been involved with computer graphics and interactive techniques for twenty years or more. The Pioneers serve as an advisory board to the ACM SIGGRAPH Executive Committee (EC) and are involved in many of the volunteering aspects of the organization and conferences.

*Accomplishments:*

* Established a Steering Committee with regular monthly meetings.
* Organized the first ever Virtual Pioneers Reception at SIGGRAPH 2020, featuring Douglas Trumbull as our Featured Speaker. The virtual Reception featured three parts: a pre-recorded video presentation from Trumbull, a follow-up live Q&A with Trumbull on Zoom, moderated by Chair Ed Kramer, and a live Reception done using Qiqochat software to make it easy for attendees to break out into different rooms and visit specific friends. (QiqoChat coding for the event was provided by Lou Harrison.)
* Worked with the History Committee, the LA Siggraph Local Chapter, and the Charles Babbage Center to raise awareness and educate our members on documenting personal legacy items related to the history of computer graphics.
* Established the legacy@siggraph.org email for Pioneer members to submit personal legacy item information.
* Worked with the History Committee to plan activities for the 50th SIGGRAPH Conference (SIGGRAPH 2023).
* Created a logo for the SIGGRAPH Pioneers, approved by the Steering Committee.

*Goals:*

* Organize the second Virtual Pioneers reception at SIGGRAPH 2021 with Donna Cox as the featured speaker, again following the three-part Reception format
* Continue working with the History Committee on legacy issues
* Encourage greater interaction between the ACM SIGGRAPH Executive Committee and its strategic planning efforts and the Pioneers
* Initiate and coordinate projects of interest to ACM SIGGRAPH and the Pioneers, such as on-line events and talks about the history of Computer Graphics and Interactive Techniques
* Document the various skill sets of our membership and maintain a master list of our members’ areas of specialization.



## Key Issues facing ACM SIGGRAPH:

One of the biggest issues facing ACM SIGGRAPH is maintaining our reserve fund balance following the pandemic; we lost about $850K in FY21 and are budgeted to lose an additional $675K in FY22. Luckily, we had about $3M over the roughly $4M reserve fund requirement before the pandemic, so even if we go back to our typical spending we should be alright, but of course there is plenty of uncertainty looking forward and no one can reasonably predict how SIGGRAPH 2022 will fare. Additionally, our losses were as modest as they were because we dramatically cut back on spending. We cancelled many of our initiatives and, of course, we cancelled all of our travel costs. We also had the good fortune that the convention center for SIGGRAPH 2020 canceled on us so we did not incur ~$1M in cancelation costs and we were able to move our contracts for SIGGRAPH 2021 to 2023. Looking forward, the organization will likely not be able to rely on conference income as heavily as in the past and will need to rely more heavily on membership revenue if we are going to be able to return to pre-pandemic behavior e.g. in-person meetings.

Which brings me to another challenge, membership. Our membership is down significantly from last year, even as we have identified it as a critical source of revenue moving forward. We have brainstormed many ideas: moving to an NPR model (e.g. pay what you want), tiered membership, monthly subscription, and enhanced member benefits. There are many reasons for the proliferation and success of subscription services, but one is clearly that if you ask someone for $100 they may say “no thanks,” but if you ask them for $10/month, they may well say “yes.” We created three of the standing committees to support membership mentioned in last year’s report (Lifelong Learning, Research Career Development, and Practitioner Career Development), but they are just starting to ramp up. We have also created a Standing Committee for Membership to address these concerns. It would also be very helpful if ACM could help us think outside the box on ways we can make ACM SIGGRAPH membership more appealing and seem less daunting.

As in years past, we still struggle somewhat with volunteers. In our 2021 elections one candidate ran unopposed, we have several unfilled committee chair positions (CARES, External Relations, Online Events). We added a question to the SIGGRAPH conference registration form asking if the registrant would like to volunteer and now have a database with hundreds of names. A remaining challenge is matching the potential volunteers with roles. We also held a live virtual volunteer recruitment event on zoom, which was recorded and posted to our youtube (<https://www.youtube.com/watch?v=pI0dR4VIzKI>) and has generated additional leads.

A perennial challenge is capturing content at our conferences and our online events. Copyright issues are complex, but beyond copyright, we are losing content because many authors, especially at large companies, would like the ability to approve posting of a live performance after the performance has occurred, as insurance against an embarrassing moment or an accidental confidential comment. We would welcome working with ACM to find a way to capture such content.

Another challenge is that ACM SIGGRAPH is a large and sprawling organization. With 21 Standing Committees, 3 Strategy Committees, and 6 Advisory Groups. While each one of these initiatives is justified and bears fruit, as evidenced by this report, it is very difficult to manage. We have instituted a process where Standing Committees are grouped and have a single liaison on the Executive Committee, who facilitates communication within the group and also between the Standing Committees and the Executive Committee. This structure has worked reasonably well. To further enhance support for our Standing Committees we have been inviting a handful of chairs to each of our biweekly strategy calls. This approach seems to be providing the committees with more support than when they all reported directly to the President.

One additional note, when we re-wrote our bylaws we were concerned that it might be the case that we could not find anyone on the Executive Committee with the skills to be Treasurer. This concern did materialize last summer and we used one of our appointed positions to bring on a Treasurer-elect, who will serve next year as Treasurer.

Appendix:

*Chair regroupings with EC reps:*

*Career Development:  Adam Bargteil*

Early Career Development – Ginger Tontaveetong

Research CD -- Justin Solomon

Practitioner CD -- Juan Miguel de Joya

Lifelong Learning -- Jonali Bhattacharyya

Professional Development -- Juan Miguel de Joya

*Online Communities: Paul Strauss*

Communications – Adele Newton

History – Mary Whitton

Information Technology Services – Aaron Hosier

Publications – Stephen Spencer

*Focused Communities: Mona Kasra*

Digital Arts – Victoria Szabo

D&I – Tony Baylis

Education – Ginger Alford

Interactive and Immersive Experiences – Mark Billinghurst

International Resources – June Kim

Chapters – A.J. Christensen

*External: Hanspeter Pfister*

External Relations – unfilled

Specialized Conferences – Paul Kry

*Chair's Grouping: Adam Bargteil*

Awards -- John (Spike) Hughes

Nominations – Rebecca Strzelec

**SIGHPC FY’21 Annual Report**

**01 July 2020 - 30 June 2021**

**Submitted by: John West, SIGHPC Chair**

1. Comment on the ways in which the SIG is a healthy and viable organization

SIGHPC has an active and vibrant professional and student membership, four co-sponsored conferences (and many more events that are in-cooperation with the SIG), as well as a variety of fellowships, awards, and travel grants that are designed to foster a spirit of community among HPC practitioners. SIGHPC has maintained a strong financial position during the COVID-19 pandemic while still managing to manage and grow programs for our community.

2. Describe your efforts related to Diversity, Equity, and Inclusion.

SIGHPC approaches Diversity, Equity, and Inclusion (DEI) through our sponsored programs including fellowships, awards, travel grants, and sponsored programs for students at our conferences.

The ACM SIGHPC/Intel Computational & Data Science Fellowships awarded its sixth class of fellows. Specifically focused on women or students from racial/ethnic backgrounds that have not traditionally participated in the computing field, the program is open to students pursuing degrees at institutions anywhere in the world. To date we have awarded a total of 51 fellowships to members of underrepresented groups in computational and data science, some with as long as 4 years of support. Awardees are given a $15,000 fellowship and recognized at the prestigious annual SC conference. The total year-year value of the program is over $1.8M. Of the 12 students named as winners this year, 75% are women; and 42% are underrepresented minorities in their country of study. This year’s fellows will be provided travel support to SC20 and will be recognized in the conference’s awards ceremony.

The SIG also sponsors the SIGHPC Emerging Woman Leader in Technical Computing Award, a biennial award open to any woman who has engaged in HPC and technical computing research, education, and/or practice for 5-15 years since receiving her highest degree. This international award creates a new career milestone achievement, and also establishes a cohort of role models for students and professional who are just getting started in our field. The awardee is recognized at the SC awards ceremony with a $2,000 cash prize, a plaque, and travel support to SC.

Student travel grants help build the HPC workforce pipeline, and ensure that new voices can participate in our largest conferences. SIGHPC offers travel grants to its major sponsored events. The SIG's travel grant programs were shut down this year due to all major conferences sponsored by the SIG being held virtually, with no travel needed to attend. As in-person conferences return, SIGHPC will continue to sponsor and grow our travel grant program for students.

The SIG continued its effort to spark interest among undergraduate in computing and HPC through its Computing4Change program and the HPC Immersion program. The Computing4Change program is now in its third year as a full program. The event is a 5-day student engagement experience hosted by the SIG at the annual SC conference designed to teach computation, data analysis, and visualization techniques in order to take a data centric view of a significant social issue. Objectives of the program include; 1) engaging students in a social action challenge utilizing advanced computing techniques, 2) increasing the participation of students historically underrepresented in STEM at SC conferences, and 3) creating a cohort of students to serve as future ambassadors at SC conferences. 47% of the 21 awardees identify as female, and 47% of awardees are first-generation college students. Among awardees from the US, 27% are Latino/Hispanic, 27% are Black or African American, 11% are from the Pacific region including Hawai`i and Guam, and those remaining are of White, Asian, or Native American descent. To date this program has engaged over 120 students in computing and HPC.

The HPC Immersion program was hosted for the first time at SC20 as a fully virtual program with the goal of fully engaging students in the SC conference and providing them with a variety of guides and mentors to support and engage them during the conference. The HPC Immersion program targets undergraduate students from communities typically communities traditionally under-represented in HPC with little to no experience in HPC from smaller four-year institutions and community colleges. Students receive training on the basics of HPC leading up to the conference and each student participates in a Guided Interest Group (GIG), led by a SC Lead Student Volunteer on a technical topic. The GIG leads plan a schedule of sessions related to a particular topic (e.g., machine learning, visualization) and coordinated pre- and post-session discussions for the cohort of 4-6 HPC Immersion Students. Each HPC Immersion student is assigned a peer mentor (a lead student volunteer) and a mentor from the professional community. Participants are encouraged to fully participate in student programs and present on their experience to the rest of the community at the end of the conference.

The SIG is also piloting a CARES committee for its flagship event, SC21, to be held in St. Louis this November. This effort is just getting underway, and we will have more to report next year.

3. Provide a list of awards and recipients

During this reporting period, SIG awards conferred are the SIGHPC Outstanding Doctoral Dissertation Award. Rohit Zambre (UC Irvine) was recognized for outstanding contributions to the design, development, and measurement of a new MPI+threads library for scalable communication of multithreaded applications on current supercomputers. This year also included two honorable mentions: AJ Lauer (Creighton) was noted for contributions to knowledge of the workplace climate among racial and gender minorities in the field of High Performance Computing, and Yang You (UC Berkeley) was noted for developing LARS (Layer-wise Adaptive Rate Scaling) and LAMB (Layer-wise Adaptive Moments for Batch training) to accelerate machine learning on HPC platforms.

The SIG also sponsors the SIGHPC Emerging Woman Leader in Technical Computing Award, a biennial award open to any woman who has engaged in HPC and technical computing research, education, and/or practice for 5-15 years since receiving her highest degree. The applications for 2021 are under review.

Additionally, SIGHPC is coordinating with the Education Chapter to create an award for excellence in HPC education.

SIGHPC's conferences present other awards and recognition (such as the annual SC Test of Time Award, the Gordon Bell Award, and others) that are not included here.

4. List significant papers on new areas that were published in proceedings

The SIG sponsors several conferences that offer best paper recognition; this year's technical paper highlights are selected from those events which recognize current state of the art.

The ACM Gordon Bell Prize is awarded each year to recognize outstanding achievement in high-performance computing; awarded by ACM, it is presented at the annual SC conference. The technical papers that accompany the finalists' submissions are important in the HPC community as demonstrations of what it possible and a record of state-of-the-art practice. The winner this year is:

Pushing the Limit of Molecular Dynamics with Ab Initio Accuracy to 100 Million Atoms with Machine Learning (https://dl.acm.org/doi/abs/10.5555/3433701.3433707)

In recognition of the contribution of supercomputing to approaches to manage the COVID-19 pandemic, the Gordon Bell committee created a new award, the ACM Gordon Bell Special Prize for High Performance Computing-Based COVID-19 Research. The winning paper is:

AI-Driven Multiscale Simulations Illuminate Mechanisms of SARS-CoV-2 Spike Dynamics

(https://doi.org/10.1101/2020.11.19.390187)

The best professional paper at SC20 was: “Petascale XCT: 3D Image Reconstruction with Hierarchical Communications on Multi-GPU Nodes” (https://dl.acm.org/doi/10.5555/3433701.3433750), and the best student paper at that event was "Scalable yet Rigorous Floating-Point Error Analysis" (https://dl.acm.org/doi/10.5555/3433701.3433768).

The best paper at PPOPP 2021 is "Synthesizing Optimal Collective Algorithms" (https://dl.acm.org/doi/10.1145/3437801.3441620).

Best papers were awarded in four tracks at PEARC20.

Best Paper in the “Advanced research computing environments – systems and system software” Track was "Monitoring and Analysis of Power Consumption on HPC clusters using XDMoD". The Best Paper in the “Application Software, Support, and Outcomes” Track was "Tapis API Development with Python: Best Practices In Scientific REST API Implementation – Experience implementing a distributed Stream API". The Best Paper in the “People involved in research computing – workforce development, diversity, and professionalization” Track was "CyberAmbassadors: Results from Pilot Testing a New Professional Skills Curriculum". Finally , the Best Paper in the “Trending now – machine learning and artificial intelligence” Track was "Exploring collections of research publications with human steerable AI."

5. Describe conference activity

ACM FY21 was the height of the COVID-19 pandemic, three of SIGHPC's four co-sponsored events were held virtually; the fourth was cancelled. Virtual events included: SC20, the International Conferences for High Performance Computing, Networking, Storage, and Analysis (9 Nov - 19 Nov 2020); PEARC20 (27 Jul - 21 July 2020); PPOPP21 (27 Feb - 3 Mar 2021). PASC20 was postponed until the following year.

6. Comment on special projects and non-conference programs that provided service to some part of your technical community

Our virtual chapters program provides a way for different sub-groups in our community to interact and share information. Virtual chapters are especially relevant in HPC because of the nature of our community: because of their costs, HPC centers are not densely distributed throughout any single state or region. This results in a global HPC community that is highly distributed and in general not regionally connected, and so meetups and other community-oriented activities are not practical. There are a few locations where the local community is large enough to support a physical chapter, and volunteers are currently organizing chapters in China and in Tennessee (where ORNL and the university form a large hub for HPC practice and research). We hope to include more about those efforts as new chapters in the FY21 report.

SIGHPC ASCAN: this chapter promotes study of accelerated scalable computing and analytics.

SIGHPC BigData: this chapter promotes the convergence between HPC and BigData.

SIGHPC Education: this chapter targets aspects of teaching HPC, developing educational or training materials, and curriculum development.

SIGHPC-RCE: this chapter's mission is to promote the advancement of the field of High Performance Computing in Resource Constrained Environments (RCE).

SIGHPC SYSPROS: the Systems Professionals chapter supports the interests and needs of systems administrators, developers, engineers, and other professionals involved or interested in the operation and support of systems for high performance computing.

7. A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.

The SIG will be challenged to increase value for non-US participants over the next several years, principally through relationships with workshops and conferences outside the US. There is some indication that this is improving, especially in China, where interest in a new chapter is high.

HPC, along with all of the computer science-related disciplines, suffers from a lack of diversity in its workforce. The SIG will continue its efforts to support groups that are under-represented in computing -- such as women, black and African Americans, Native Americans, and Hispanic and Latino groups -- through its fellowship, travel support, and award programs. However, we must carefully evaluate the impact of those programs and continue to experiment with new ways to address this critical need.

**SIGPLAN FY 2021 Annual Report.**

**July 2020 - June 2021.**

**Submitted by: Jeff Foster, SIGPLAN Chair and Jens Palsberg, past SIGPLAN Chair**

SIGPLAN has four annual conferences that weigh equally as flagship conferences:

- Int. Conf. on Functional Programming (ICFP),

- Conf. on Programming Language Design and Implementation (PLDI),

- Symp. on Principles of Programming Languages (POPL), and

- Conf. on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH).

Additionally, SIGPLAN sponsors or co-sponsors eight other conferences. Each of the flagship conferences had an attendance of 500 people until the pandemic. In FY 2021 all the conferences were virtual and for all the flagship conferences, the virtual attendance was up.

1. Awards

SIGPLAN gave the following awards:

- SIGPLAN Robin Milner Young Researcher Award: Emina Torlak (U Washington).

- SIGPLAN Software Award: WebAssembly, by Ben Titzer and seven others.

- SIGPLAN Distinguished Service Award: Ben Zorn (Microsoft).

- SIGPLAN Distinguished Educator Award Benjamin Pierce (U. Pennsylvania).

- SIGPLAN Most Influential Paper awards to papers presented 10 years earlier:

- ICFP 2010: "Abstracting Abstract Machines", by David Van Horn and Matthew Might.

- OOPSLA 2010: "The spoofax language workbench: rules for declarative specification of languages and IDEs",

by Lennart Kats and Eelco Visser.

- POPL 2011: "Automating string processing in spreadsheets using input-output examples", by Sumit Gulwani.

- PLDI 2011: "Finding and understanding bugs in C compilers", by Xuejun Yang, Yang Chen, Eric Eide, and John Regehr.

Additionally, SIGPLAN decided on who will receive two additional awards; SIGPLAN will give those awards in FY 2022.

2. Significant Papers

The following paper, first presented at SIGPLAN conferences, appeared as a CACM research highlight in FY 2020; we had none in FY 2021.

- "PlanAlyzer: assessing threats to the validity of online experiments", by Emma Tosch, Eytan Bakshy, Emery Berger, David D. Jensen, and J. Eliot B. Moss; CACM Research Highlight in Dec 2019; first presented at OOPSLA 2019.

3. Significant Programs

SIGPLAN is committed to gold open access to papers in conferences that have joined Proceedings of the ACM on Programming Languages (PACM PL). SIGPLAN has the agreement with Scott Delman that until July 2022, SIGPLAN pays the per-paper fee of $400 for gold open access, unless authors pay themselves.

Until the pandemic, SIGPLAN provided $120,000 annually in travel grants, which go mostly to students. Additionally, SIGPLAN provided a total of $80,000 annually to support of the Programming Languages Mentoring Workshops. This money went to cover the travel costs of students. Also, SIGPLAN provided a total of $50,000 annually to support four summer schools. This money goes mostly to cover the travel costs of students. We are eager to return to fund those programs once we return to physical meetings.

The SIGPLAN communications director sends a monthly newsletter via email to every SIGPLAN member. The newsletter contains information about upcoming SIGPLAN conferences and other activities that may be of interest to SIGPLAN members. Additionally, SIGPLAN has a presence on Facebook and Twitter.

The SIGPLAN blog is going well. The founding editor was Michael Hicks, and in FY 2021 we transitioned editorship to Todd Millstein and Adrian Sampson. In FY 2021, some of the postings were summaries of distinguished papers from SIGPLAN conferences.

Until the start of the pandemic, SIGPLAN had a permanent conference manager who was essential to the smooth organization of the flagship conferences and PLMWs. Near the end of FY 2021 we hired a new conference manager.

4. Innovative Programs

In the days of physical conferences, SIGPLAN did video recording and live streaming of all the main tracks of the flagship conferences and put the videos on YouTube. In FY 2021, during the pandemic, we did something similar, except that now either the authors record the videos themselves, or we use Zoom, or the like, to record live.

In 2021, we started SIGPLAN-M, a subcommittee of SIGPLAN, <https://www.sigplan.org/LongTermMentoring/> SIGPLAN-M organizes an international long-term mentoring program for programming languages researchers. The goal of the program is to address two mentoring needs in the programming languages community. First, for aspiring or junior researchers, it is difficult (but necessary) to form long-term connections in the programming languages community, and to access the perspectives of researchers from other institutions. Second, for senior researchers, it is difficult to access mentorship of any kind.

5. Broadening Participation

SIGPLAN has a Programming Languages Mentoring Workshop (PLMW) co-located with every flagship conference, for a total of four PLMWs annually. Each PLMW has 30-40 attendees, which are a mix of undergraduate and graduate students. The goal of each workshop is to make the participants interested in pursuing more education in computer science in general and programming languages in particular. CRA (CERP) surveys the participants, both right after each workshop and one year later. CRA sends SIGPLAN reports with the outcomes. SIGPLAN uses those reports to understand the impact of PLMW and to raise funds from the National Science Foundation and industry.

SIGPLAN donates $15,000 annually to support the CRA-WP activities to increase participation of women in computer science.

The four flagship conferences use a variant of double-blind peer review to ensure fairness, particularly to under-represented groups.

SIGPLAN has created a pool of travel funding for members of historically marginalized groups. An example of such a group is the faculty and students at Historically Black Colleges and Universities.

SIGPLAN has a CARES committee, which is a sounding board for anyone who experiences a violation of an ACM policy, such as harassment, discrimination, or plagiarism.

6. Key Issues

ICFP 2021 will be virtual, while we plan for SPLASH 2021, POPL 2022, and PLDI 2022 to be hybrids of in-person and virtual. In early 2022 we had a survey of the SIGPLAN members about the formats of future SIGPLAN conferences. We received 320 replies that informed how we proceed with our conference plans.

**SIGKDD Annual Report**

July 1, 2020 - June 30, 2021

Submitted by: Jian Pei, SIGKDD Chair ([jpei@cs.sfu.ca](mailto:jpei@cs.sfu.ca))

**1. Comment on the ways in which the SIG is a healthy and viable organization**

SIGKDD is a healthy and viable organization in many ways. Particularly, I would like to highlight the following important aspects.

* Resilience during the pandemic. SIGKDD ran the 2020 and 2021 KDD conferences online, sustaining the similar number of attendees, and maintaining the flagship high quality standard and edge-cutting research leadership.
* Healthy in financial status. SIGKDD maintains its healthy financial status as usual. The KDD 2020 and 2021 conferences maintains a minor surplus. The financial status gives SIGKDD a solid base to move forward, explore new opportunities, and tackle future challenges.
* Broadening diversity, equity, and inclusion. SIGKDD formed its EDI committee to strengthen the diversity, equity, and inclusion in the SIG and the associated events. For example, in KDD 2020 and 2021 conferences, special events related to EDI were held successfully. 50% of the keynote speakers in KDD 2021 were female. A new rising star award was created to recognize and encourage early career researchers. A female researcher was one of the first recipients of this award.

**2. Describe your efforts related to Diversity, Equity, and Inclusion.**

* The Executive Committee puts Diversity, Equity, and Inclusion (EDI) as one of the highest priorities. The EC discussed, identified, and implemented a series of opportunities to strengthen EDI in SIGKDD. An EDI committee was formed and Drs. Johannes Gehrke (Microsoft) and Lee Moon Li (National University of Singapore) was appointed to chair this committee.
* We advised the SIGKDD 2021 organization team to strengthen EDI in KDD 2021. The outcome was significant. About 50% of the function chairs and volunteers were female. The chairs and volunteers were recruited from academia and industry, from different regions in the world, and from different cultural background. 2 out of 4 keynote speakers and 8 out of 20 ADS invited speakers were female.
* New events were designed in KDD 2021 to strengthen EDI. For example, EDI topics are seriously addressed in the Environmental, Social, and Corporate Governance (ESG) Day, the Trust Day, and the Women in KDD Workshop.

**3. Provide a list of awards and recipients**

* ACM SIGKDD Innovation Award: Dr. Johannes Gehrke, Microsoft Corporation, for his outstanding contributions to new data mining algorithms and data privacy
* ACM SIGKDD Service Award: Dr. Shipeng Yu, LinkedIn, for his outstanding history of serving and promoting the field of data mining and the data mining community
* ACM SIGKDD Dissertation Award: Aditya Grover, Stanford University (USA), Dissertation title: Learning to Represent and Reason Under Limited Supervision
* ACM SIGKDD Rising Star Award: Dr. Xia “Ben” Hu, Rice University, for his significant research in human-centric data mining and contribution to developing interpretable and automated methods to make complex machine learning algorithms easily used by domain experts.
* SIGKDD Test of Time Award for Research: Chong Wang, David M. Blei: Collaborative topic modeling for recommending scientific articles. KDD 2011: 448-456.
* SIGKDD Test of Time Award for Applied Data Science: Diane Tang, Ashish Agarwal, Deirdre O’Brien, Mike Meyer: Overlapping experiment infrastructure: more, better, faster experimentation. KDD 2010: 17-26.

**4. List significant papers on new areas that were published in proceedings**

* KDD 2021 Best Research Paper Award: Jun-gi Jang, U Kang, Fast and Memory-Efficient Tucker Decomposition for Answering Diverse Time Range Queries
* KDD 2021 Best Student Paper Award: Yllka Velaj, Sahar Behzadi Soheil, Claudia Plant, Spectral Clustering of Attributed Multi-relational Graphs
* KDD 2021 ADS Best Paper Award: Serina Chang, Mandy Wilson, Bryan Leroy Lewis, Zakaria Mehrab, Emma J Pierson, Pang Wei Koh, Jaline Gerardin, Beth Red Bird, David Grusky, Madhav Marathe, Supporting COVID-19 policy response with large-scale mobility-based modeling
* KDD 2021 ADS Best Paper Award Runner-Up: Hao Wang, Chi Harold Liu, Zipeng Dai, Jian Tang, Guoren Wang, Energy-Efficient 3D Vehicular Crowdsourcing for Disaster Response by Distributed Deep Reinforcement Learning

**5. Describe conference activity**

KDD 2021 was held successfully. It attracted over 3000 attendees. SIGKDD also sponsored the WSDM 2021 conference, which was held successfully online.

**6. Comment on special projects and non-conference programs that provided service to some part of your technical community**

SIGKDD ran the Community Impact Program. The goal of the program is to support projects that promote data science and help the data science community to grow, broaden, and diversify. Maximum project duration is one year. This year, we funded 2 projects for online summer schools.

**7. A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.**

* SIGKDD is facing competition and collaboration opportunities with several organizations, such as NeurIPS, AAAI, CVPR, and ICML. SIGKDD needs to work hard to innovate and sustain its identity and maintain a distinct and collaborating community.
* In the next 2-3 years, due to the uncertainty and transformation of industry, many companies and academic institutions may change their attitude towards supporting their employees to go to academic conferences. Moreover, the uncertainty in running conferences online versus in-person posts challenges. SIGKDD has to deal with this uncertainty in order to grow its body of members.

**SIGBIO Annual Report**

**July 2020 - June 2021**

**Submitted by: Srinivas Aluru, Chair**

*The ACM Special Interest Group on Bioinformatics, Computational Biology, and Biomedical Informatics (SIGBio) bridges computer science, mathematics, statistics with biology and biomedicine. The mission of ACM SIGBio is to improve our ability to develop advanced research, training, and outreach in Bioinformatics, Computational Biology, and Biomedical Informatics by stimulating interactions among researchers, educators and practitioners from related multi-disciplinary fields.*

**SIG Health and Viability:**

ACM SIGBIO caters to bioinformatics and health informatics researchers that are focused on computational, mathematical, and statistical advances. In that sense, it stays true to its roots within ACM and differentiates itself from the socieities that cater more to life sciences researchers. Its membership has held steady in the 300-350 range. Its flagship conference ACM BCB is the primary venue for its members to meet and interact in the context of a high quality technical conference. The SIGBIO annual general body meeting is held on the sidelines of the conference. Since its inception in 2010, SIGBIO has consistently increased its financial reserves with the exception of one year, and its reserves are currently at an all time high. SIGBIO was successfully reviewed for viability in 2018 by the SGB, which granted continuation of the society for the next four years.

**Efforts Related to Diversity, Efforts, and Inclusion:**

SIGBIO has historically sponsored the Women in Bioinformatics panel as a one and half hour boxed lunch event during the ACM BCB conference. The event is designed in a such a way as to attract the entire audience attending the conference. The panel discussed issues related to equality in access, opportunities, recognition, hiring, and professional advancement. Starting in 2020, the panel is renamed as the Diversity and Inclusiveness Panel to expand its focus and also include issues related to underrepresented minorities.

**SIGBIO Awards:**

These awards are given to the best paper and best student paper, respectively, as judged by the awards committee and selected from among the papers accepted for the ACM BCB conference. The 2020 awards were presented at the banquet event of the ACM BCB 2020 conference.

SIGBIO Best Paper Award:

Zero-shot imputations across species are enabled through joint modeling of human and mouse epigenomics, by Jacob Schreiber, Deepthi Hedge, and William Noble

SIGBIO Best Student Paper Award:

Bio-JOIE: Joint Representation Learning of Biological Knowledge Bases, by Junheng Hao, Chelsea J.-T. Ju, Muhao Chen, Yizhou Sun, Carlo Zaniolo, and Wei Wang

**Conference Activity (ACM BCB):**

The ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB) is the flagship conference for SIGBIO. The eleventh edition of the conference (ACM BCB 2020) was held during September 21-24, 2020. It was initially planned to take place in Atlanta, USA but eventually held virtually due to COVID. The conference had 287 attendees, an increase of 46 from the previous year. This is even more notable given that the previous years’ numbers include attendees of the biannually co-located Workshop on Algorithms in Bioinformatics (WABI). Ease of access and reduced cost of attending virtual events is likely the cause of increased attendance.

The conference main program featured 40 peer-reviewed regular research papers and 17 short research papers that appeared in the proceedings, chosen from among 130 submissions. It also featured 11 highlights presentations of recently published high value work. The conference was preceded by seven tutorials and the following five international workshops:

1. Computational structural bioinformatics (CSB)
2. Computational advances in molecular epidemiology (CAME)
3. Parallel and cloud-based bioinformatics and biomedicine (ParBio)
4. Machine learning models for multi-omics data integration (MODI)
5. High performance computing, big data analytics and integration for multi-omics biomedical data (HPC-BOD)

Four of these workshops have continued from the previous year, and a new workshop was added in 2020 (HPC-BOD). The conference also featured 3 keynote talks, 27 posters presented in the poster session, student mentoring forum, the SIGBIO Diversity and Inclusiveness in Bioinformatics panel, and an organized social event featuring virtual tour of Atlanta.

Research on COVID is of particular relevance to our scientific community, and hence we organized events specifically targeting it. One keynote talk is on Real-time Computational science for COVID-19 pandemic planning and response. We also organized a COVID special session with two speakers – one talk on contact tracing in campus communities using WiFi data, and another on the near and long-term challenges of the COVID pandemic. We also organized two special technical sessions during the conference that

As per current statistics, the published proceedings of the conference in the ACM Digital Library was downloaded 6,931 times in the past 12 months. Special issues of enhanced versions of top papers selected from the conference were published in the *ACM/IEEE Transactions on Computational Biology and Bioinformatics*, and the *IEEE Journal of Biomedical and Health Informatics*.

**In-Cooperation Conferences:**

SIGBio was in cooperation with the following conference:

* BIOSTEC’21: 14th International Joint Conference on Biomedical Engineering Systems and Technologies, virtual, February 11-13, 2021.

**Special Projects:** None

**Key Issues for next 2-3 years:**

The key issues facing SIGBIO in the near future are:

-- *Membership*: It is encouraging that the student membership has increased 21 to 30 members, and the affiliate membership has increased from 50 to 74 members, while the professional membership showed negligible decrese from 211 to 208. However, the membership is stagnant with respect to long term trends. The main competitor is the large and independent society, the International Society for Computational Biology (ISCB). The key differentiator for SIGBIO is that it serves advancement and penetration of computer science in the bio and health areas. A near term challenge is to increase membership while staying true to our roots within ACM.

-- *Newsletter*: SIGBIO has not been able to attract high quality technical contributions to its newsletter. The newsletter primarily serves the role of disseminating information, and advertise opportunities to our members.

In both of the above cases, expectations from major funding agencies that operate in this area (NIH, Bio division of NSF, USDA) are towards publication and participation in the life sciences domain. However, Computer Science researchers and bioinformatics practitioners value the focus and forums provided by SIGBIO.

**SIGIR Annual Report**

**July 2020 – June 2021**

**Submitted by: Ben Carterette, SIGIR Chair**

***SIGIR is an interdisciplinary community of professionals who invent and deploy solutions to information access problems, including search and recommendation.***

**Key Initiatives and Accomplishments**

**Students**

* Due to conferences becoming virtual events, we converted our Student Travel Award program into a registration waiver program and expanded it to all student co-authors of accepted papers. We were able to waive registration fees for all student co-authors of papers attending the SIGIR 2020 conference in July 2020, and we have continued the program throughout the year, waiving registration fees for students for JCDL 2020, ICTIR 2020, CIKM 2020, WSDM 2021, and CHIIR 2021.
* We hosted a virtual student networking event at the SIGIR 2020 conference, with two separate sessions to accommodate students across the world. Sessions consisted of short talks and breakout groups for students to interact with senior members of the IR community.

**Diversity, Equity and Inclusion**

* We hosted a virtual Diversity, Equity, and Inclusion event at the SIGIR 2020 conference. Cassidy Sugimoto of Georgia Tech gave a presentation on how COVID is having an outsized effect on women. Participants were then organized into breakout groups for discussion on how COVID has affected them.
* We provided support for the Women in IR group to organize a virtual event at the SIGIR 2020 conference. The group now has a web presence under the official SIGIR website at<http://sigir.org/women-in-ir/sigir2015.html>

**Community**

* The SIGIR 2020 conference, which took place online, hosted from Beijing, broke the record set in 2019 for largest SIGIR conference with over 1,500 attendees.
* Hosted the third annual SIGIR Conference Leaders Workshop for recent and future SIGIR General Chairs and Program Chairs to share experiences, transfer knowledge, and discuss the future of the conference.

**Awards**

* The SIGIR Academy, introduced the previous year, inducted 25 members, including an inaugural class of 18.
* The following awards were given at the SIGIR 2020 conference in July 2020:
  + **Best Paper:** *Controlling Fairness and Bias in Dynamic Learning-to-Rank* by Marco Morik, Ashudeep Singh, Jessica Hong, and Thorsten Joachims.
  + **Best Paper Honorable Mention:** *Models Versus Satisfaction: Towards a Better Understanding of Evaluation Metrics*byFan Zhang, Jiaxin Mao, Yiqun Liu, Xiaohui Xie, Weizhi Ma, Min Zhang, and Shaoping Ma.
  + **Best Short Paper:** *Few-Shot Generative Conversation Query Rewriting* by Shi Yu, Jiahua Liu, Jingqin Yang, Chenyan Xiong, Paul Bennett, Jianfeng Gao, and Zhiyuan Liu.
  + **Test of Time Award:** *Learning to Recommend with Social Trust Ensemble*(from SIGIR 2009)by Hao Ma, Irwin King, and Michael R. Lyu.
  + **Test of Time Honorable Mention:** *A User Browsing Model to Predict Search Engine Click Data from Past Observations* (from SIGIR 2008) by Georges E. Dupret and Benjamin Piwowarski.
  + **Test of Time Honorable Mention:** *Selecting Good Expansion Terms for Pseudo-Relevance Feedback* (from SIGIR 2008)by Guihong Cao, Jian-Yun Nie, Jianfeng Gao, and Stephen Robertson.

**Significant Challenges**

* Our biggest challenge has continued to be navigating the changes to our event schedule and plans due to COVID. We were not able to offer as many community initiatives in the last year as we would have liked. As of September 2021, many events planned for 2022 will start transitioning to hybrid, in order to keep the significant advantages of virtual events such as increased accessibility. Successfully transitioning to hybrid will be a substantial amount of time and effort on the part of conference organizers and steering committees.
* Open access is a challenge. We have attempted to leverage the ACM’s Open Access programs, but our experience has been spotty. Some conferences have not had an OpenTOC page for example, and though SIGIR opted into the SIG-level OpenTOC program, we have not seen results that we expected.
* Though we have established a committee for artifact review and badging, we have struggled to have badges and artifacts appear on awarded papers on the ACM Digital Library.

1. https://en.wikipedia.org/w/index.php?title=List\_of\_important\_publications\_in\_computer\_science&oldid=971632291#Networking [↑](#footnote-ref-1)
2. See the editorial note titled “[Update on ACM SIGCOMM CCR reviewing process: towards a more open review process](https://dl.acm.org/doi/pdf/10.1145/3411740.3411748)” published in the July 2020 issue of CCR for more information. [↑](#footnote-ref-2)
3. Those recommendations are available on the SIG’s webpage at https://drive.google.com/file/d/1cFP9uECiWruG71wExssznx3mmuoaBDni/view [↑](#footnote-ref-3)
4. The recent survey sent to the SIG membership ahead of the SIGCOMM 2021 conference is a good example of the kind of regular information gathering that will be required. [↑](#footnote-ref-4)
5. Cagle., L. et al. (2021). *Anti-racist scholarly reviewing practices: A heuristic for editors, reviewers, and authors*. Retrieved from <https://tinyurl.com/reviewheuristic>. [↑](#footnote-ref-5)