**SIGACCESS Annual Report**

**July 2021 - June 2022  
Submitted by: Matt Huenerfauth, 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 51st 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 2021, attendance at our flagship ASSETS conference set a new record, with 424 attendees from 24 countries and 6 continents.

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. Submissions for our flagship ASSETS conference in 2021 were very healthy, with an acceptance rate of 29% (out of 124 submissions to the full-length technical paper track).

## Diversity, Equity, and Inclusion

In 2020, SIGACCESS initiated a [Diversity and Inclusion Scholarship](https://assets20.sigaccess.org/d_i_scholarships.html) for the ASSETS 2020 conference, and this continued for a second year for the ASSETS 2021 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 in 2021, 42 scholarships were awarded. (For the prior ASSETS 2020 conference, 42 had also been awarded.)

To help diversify the community leadership, an open call was made for participation in the ASSETS 2021 Organizing Committee. Attention was paid to diversity in both the organizing and program committees, and the conference had Diversity and Inclusion Chairs (in addition to several Accessibility Chairs).

The SIGACCESS election in 2021 was advertised openly, and the newly elected executive committee members of SIGACCESS include individuals who are women, who identify as LGBTQIA+, and who are from non-U.S. institutions.

## SIGACCESS Awards

In 2021, the **SIGACCESS ASSETS Paper Impact Award** was given to Jennifer Mankoff, Gillian R. Hayes, and Devva Kasnitz, who published “**Disability studies as a source of critical inquiry for the field of assistive technology**” at the ASSETS 2010 conference. This paper was the first to identify and bridge the gap between the assistive technology research field and the field of critical disability studies. Bringing decades of critical thought in social and behavioral sciences to computer scientists, the paper presents important theories from disability studies and shows how they influenced the authors to critique and improve their own work. As a field, assistive technology research started to move from a somewhat insular, technology-driven, paternalistic ‘helping’ model, to a more inclusive, self-advocacy mode of thought. This is a vitally important change, with enormous impact on the way we define and approach research problems. As a result, the social impact of our work is correspondingly greater, leading towards equal participation, respect and access for people with disabilities and the neurodivergent community. The impact of this paper was evidenced by the number of its citation count of 172 (as of October 19, 2021) as reported by Google Scholar. According to the ACM Digital Library, it had been cited 96 times (as of October 19, 2021) in ACM sponsored journals and conferences.

The **ASSETS 2021 Best Paper** award went to Qisheng Li, Josephine Lee, Christina Zhang, Katharina Reinecke for their work “**How Online Tests Contribute to the Support System for People with Cognitive and Mental Disabilities**.” The authors described how prior work had found that people with cognitive and mental disabilities assess themselves using online tests and assessments, yet it had been unknown whether and how effectively these tests fill gaps in healthcare and general support systems. They interviewed adults with cognitive or mental disabilities about their motivation for and experience using online tests, and they found that online tests were an important resource for these users, i.e., lowering barriers to a professional diagnosis, providing valuable information about the nuances of a disability, and supporting people in forming a disability identity.

The **ASSETS 2021 Best Student Paper** was awarded to Stephanie Valencia, Mark Steidl, Michael Rivera, Cynthia Bennett, Jeffrey Bigham, Henny Admoni, for their work “**Aided Nonverbal Communication through Physical Expressive Objects**.” The authors discussed how Augmentative and alternative communication (AAC) devices support speech-based communication, but being able to indicate that one wishes to take a turn, e.g., by raising a hand or signaling with some other cue, is also important in obtaining a turn to speak. The authors conducted a case study on motion-based AAC by “co-designing a physical expressive object to support ACs during conversations.” The authors found that a physical expressive object was able to support communication with unfamiliar conversational partners.

## Significant New Work in Accessibility

Continuing a trend in recent years, there was an increasing number of papers at the ASSETS'21 conference on research relating to artificial intelligence, large datasets, and virtual/augmented/mixed reality technologies. For instance, full-length technical papers included:

* Fluent: An AI Augmented Writing Tool for People who Stutter, by Bhavya Ghai: Stony Brook University; Klaus Mueller: Stony Brook University.
* American Sign Language Video Anonymization to Support Online Participation of Deaf and Hard of Hearing Users, by Sooyeon Lee: Rochester Institute of Technology; Abraham Glasser: Rochester Institute of Technology; Becca Dingman: Rochester Institute of Technology; Zhaoyang Xia: Rutgers University; Dimitris Metaxas: Rutgers University; Carol Neidle: Boston University; Matt Huenerfauth: Rochester Institute of Technology.
* Nearmi: A Framework for Designing Point of Interest Techniques for VR Users with Limited Mobility, by Rachel L. Franz: University of Washington; Sasa Junuzovic: Microsoft Research; Martez Mott: Microsoft Research.
* Disability-first Dataset Creation: Lessons from Constructing a Dataset for Teachable Object Recognition with Blind and Low Vision Data Collectors, by Lida Theodorou: City, University of London; Daniela Massiceti: Microsoft Research; Luisa Zintgraf: University of Oxford; Simone Stumpf: City, University of London; Cecily Morrison: Microsoft Research; Edward Cutrell: Microsoft Research; Matthew Tobias Harris: City, University of London; Katja Hofmann: Microsoft.
* Sharing Practices for Datasets Related to Accessibility and Aging, by Rie Kamikubo: University of Maryland; Utkarsh Dwivedi: University of Maryland; Hernisa Kacorri: University of Maryland.
* Enabling meaningful use of AI-infused educational technologies for children with blindness: learnings from the development and piloting of the PeopleLens curriculum, by Cecily Morrison: Microsoft Research; Edward Cutrell: Microsoft Research; Martin Grayson: Microsoft Research; Elisabeth RB Becker: Microsoft Research; Vasiliki Kladouchou: Microsoft Research; Linda Pring: Microsoft Research; Katherine Jones: University of Bristol; Rita Faia Marques: Microsoft Research; Camilla Longden: Microsoft Research; Abigail Sellen: Microsoft Research.

## Conference Activity

Our flagship conference, ASSETS 2021, originaly planned to be held in Washington, D.C., was held virtually. It was chaired by Jonathan Lazar (University of Maryland) with Jinjuan Heidi Feng (Towson University), and Faustina Hwang (University of Reading) 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, a mentoring program for new authors, and the previously mentioned diversity awards. ASSETS 2021 also featured panel presentations relating to the 50th Anniversary of SIGACCESS and the 50th Anniversary of the TRACE Center, with reflections from members of the accessibility research community about the impact of these organizations.

## SIGACCESS Programs

With the Covid-19 pandemic sending ACM Conferences online, it became critical to understand how to make virtual conferences accessible and to share that knowledge across ACM. In 2020, we had commissioned a new resource for ACM conference organizers, and this guide became available in early 2021: [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.

To mark SIGACCESS’ 50th year, we had commissioned a history research project, which gathered interviews with prominent members of the SIG, and historical information. The report from this project contributed to the content of the historical panel presentation at the ASSETS 2021 conference, and it was published this year as an [article](https://www.sigaccess.org/newsletter/2022-01/freeman.html) within the SIGACCESS newsletter.

## 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 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. Our forthcoming ASSETS 2022 conference will be a hybrid event, to be held in Athens, Greece, and we are exploring ways of creating an accessible virtual experience for individuals who cannot attend the in-person modality of the conference.

**SIGAPP FY’21 Annual Report**

**July 2021 - June 2022**

**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

1. **Comments on the ways in which SIGAPP is a Healthy and Viable Organization**
2. **SIGAPP Membership and Benefits for Members**

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 strives 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 the old electronic version of Applied Computing Review.

1. **SIGAPP Fund Balances**

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

|  |  |  |
| --- | --- | --- |
| **Fiscal Year** | **Fund Balances** | **Digital Lib. Revenue** |
| June 2021 | **$862,064** | $51,854 |
| June 2020 | **$785,584** | $42,004 |
| June 2019 | **$631,274** | $40,438 |
| June 2018 | **$618,281** | $60.046 |
| June 2017 | **$608,630** | $50,545 |
| June 2016 | **$580,398** | $48,983 |

1. **Efforts related to Diversity, Equality, and Inclusion**

To Increase Diversity and Equity of SIGAPP Officers and Organizing Committee members and to foster a sense of community among SIGAPP Officers and Organizing Committee members, SIGAPP tried to recruit volunteers without discrimination against various races and countries. As a result of these efforts, 20~30 years ago, authors of SAC mainly from the EU, and the USA but now authors from Asian and African countries as well have submitted many papers.

1. **List of Awards and Recipients**

Both SIGAPP Outstanding Service Award and SIGAPP Distinguished Service Award have been presented almost every years. However, there were no winners from 2020 to 2022 due to the covid-19 pandemic. There will be winners for both awards in 2023.

1. **Significant papers on new areas**

We are checking on it, but there were no special and significant papers.

1. **Sponsored Conference Activity**

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 Brno, the Czech Republic in 2022, but it was held as a virtual meeting due to the COVID-19 pandemic. 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.

Reliable and Convergent Systems (RACS) which was scheduled to be held in Gwangju, Korea in October 2021 was canceled due to the impact of COVID-19. RACS started a SIGAPP in-cooperated conference and 10% partial sponsored conference of SIGAPP in 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 9 years.

SIGAPP has a 50% sponsored conference, Proactive and Experience in Advanced Research Computing Conference (PEARC) which was held in Boston in July 2022, and a 10% sponsored conference, 2021 International Conference on Intelligent Computing and Its Emerging Applications (ICEA 2021) which was held as a virtual meeting in December 2021. SIGAPP will continue supporting SAC, RACS, PEARC, and ICEA in the coming years.

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

* SBSI ’22, Brazilian Symposium on Information Systems, Parana, Brazil, 05/16/22-05/19/22
* ICCA ’22, International Conference on Computing Advancements, Dhaka, Bangladesh, 03/10/22 – 03/12/22
* 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

1. **Comments on special projects and non-conference program**
2. **ACR, newsletter for members and non-members**

ARC, Applied Computing Review is distributed to all ACM/SIGAPP members as benefits of membership, and is available to non-SIGAPP members, libraries, and other institutions by special subscription.

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 2022. 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.

1. **SIGAPP Chapter**

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 increased 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.

1. **Others**

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 on 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.

1. **Brief Summary of key issues that SGIPP membership will have to deal with in the next 2~3 years**

Member retention is always on SIGAPP's minds, this year more than ever. Renewal strategy is a critical component of revenue. If we neglect it, SIGAPP risks undermining your financial health and your overall ability to serve members long-term. The biggest reason members aren’t renewing is because they don’t feel engaged. SIGAPP focuses on improving real engagement as a part of our membership renewal strategy. To retain SIGAPP members and increase the number of members, SIGAPP has granted free membership for one year to authors who have registered with SAC and RACS for the past several years. Then authors who are given free membership can submit their papers to the SAC and the RACS the following year at the discounted member's registration fee.

To make the authors feel engaged in SIGAPP, SIGAPP continues to improve and establish our volunteers, the development process which is an essential issue for SIGAPP. SIGAPP Executive Committee keeps looking for new volunteers to serve the future SIGAPP officers. SIGAPP has encouraged SIGAPP members to serve as a volunteer for the SAC conference which is the flagship conference of the SIGAPP.

In addition, we have tried to think about a career path for young researchers in their career development, including the Career Award, 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 2021 – June 2022**

**Submitted By: Babak Falsafi**

**OVERVIEW**

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 48th ISCA was held virtually in June 2021 due to COVID. The conference featured ten workshops, 13 tutorials, three keynotes, an industry track session, 22 (two-lane) technical paper sessions (with a near record for both 428 submitted and 76 accepted papers), and six panels. ISCA 2021 was the second online edition of ISCA with 1,524 participants and $99,950 of sponsored funds, most of which were deferred for use from ISCA’20.

ASPLOS’21 was also held virtually in April 2021 due to COVID. The conference featured a strong technical program with 75 accepted papers and 398 paper submissions. The program included three keynotes, four workshops, and nine tutorials and had a total of 837 registered attendees.

**(2) ISCA industrial track:** ISCA 2021 featured the second edition of the Industry Track inaugurated in the prior year. The Industry Track received 19 submissions from eleven companies, of which five papers were accepted for presentation.

**(3) Annual SIGARCH visioning workshops:** The visioning workshops continued being suspended due to COVID because organizers would prefer in-person meetings. The next workshop, which is on Bio-inspired computing, is planned for 2023.

**TALENT DEVELOPMENT & RECOGNITION**

We have a number of awards that are given annually either by ACM/IEEE directly, by SIGARCH alone, or SIGARCH together with TCCA. José Martínez is our Awards Chair and coordinates the Maurice Wilkes and Alan Berenbaum awards. The Dissertation award has an alternating chair between a SIGARCH EC and a TCCA EC member every year. Natalie Enright Jerger coordinates the CACM highlights. The influential paper awards are coordinated by the conference chairs together with the respective steering committees or SIGARCH/TCCA chairs.

**(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 2021 recipient was Margaret Martonosi for “contributions to the design, modeling and verification of power-efficient computer architecture.”

**(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 Thomas Wenisch for “contributions to memory persistency and energy-efficient systems.”

**(3) SIGARCH/TCCA influential ISCA paper award**: This award recognizes a paper from the ISCA 15 years earlier. The 2021 recipient was “Techniques for Multicore Thermal Management: Classification and New Exploration” by James Donald and Margaret Martonosi.

**(4) ASPLOS influential paper award:** This award recognizes ASPLOS papers from 10 or more years ago. The 2021 recipients were “[A VLIW Architecture for a Trace Scheduling Compiler](https://dl.acm.org/doi/abs/10.1145/36206.36201)” by Robert P. Colwell, Robert P. Nix, John J. O’Donnell, David B. Papworth, Paul K. Rodman in ASPLOS 1987, “[The Cache Performance and Optimizations of Blocked Algorithms](https://dl.acm.org/doi/10.1145/106973.106981)” by Monica S. Lam, Edward E. Rothberg, Michael E. Wolf in ASPLOS’ 1991, “[Improving the Accuracy of Dynamic Branch Prediction Using Branch Correlation](https://dl.acm.org/doi/10.1145/143371.143490)” by Shien-Tai Pan, Kimming So, Joseph T. Rahmeh in ASPLOS 1992, and “[Value Locality and Load Value Prediction](https://dl.acm.org/doi/10.1145/248209.237173)” by Mikko H. Lipasti, Christopher B. Wilkerson, John Paul Shen in ASPLOS 1996.

**(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 2021 recipient was Per Stenström for “the creation and successful implementation of the TACO/HiPEAC journal-first review model, and for decades long exemplary service contributions to the field” Eileen Lach, Alan Berenbaum’s partner, 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 2021 recipient was Dimitrios Skarlatos from UIUC (advised by Josep Torrellas), for his dissertation entitled “Rethinking Computer Architecture and Operating Systems Abstractions for Good & Evil.” The award citation was “for contributions to redesigning the abstractions and interfaces that connect hardware and operating systems.” Honorable mentions went to Yatin Manerkar from Princeton (advised by Margaret Martonosi) for his dissertation entitled “Progressive Automated Formal Verification of Memory Consistency in Parallel Processors,” with the award citation for “developing scalable, sound, and all-program hardware verification methods that demonstrate the potential of progressive correctness verification from early-stage architectural design to late-stage implementation” and to Hyoukjun Kwon from Georgia Tech (advised by Tushar Krishna and Michael Pellauer) for the dissertation entitled “Data- and Communication-centric Approaches to Model and Design Flexible Deep Neural Network Accelerators,” with the award citation for “developing mechanisms to quantify the relationship between deep neural network mappings, data reuse and communication flows for system design of flexible deep learning accelerators.”

**(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](https://www.sigarch.org/benefit/awards/cacm-research-highlights) to reflect the high prestige of the papers being selected. This past year, the committee received eight recommendations from conferences and will be proceeding to select the nominees in Fall 2022.

**(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 2021, we honored the contributions of Prof. Wen-Mei Hwu who retired from UIUC.

**(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 Vassos Soteriou, Associate Professor at Cyprus University of Technology. Prof. Yanos Sezeides of University of Cyprus provided a tribute at ISCA’21.

**(10) Student mentoring:** Joel Emer, our Mentorship Chair, continued the “Meet a Senior Architect” together with “Meet a Senior Student” in 2021 with CASA. The programs match students with mentors (through questions asked in the conference registration form), providing students the opportunity to meet 1-on-1 with a senior architect or a senior student for about half an hour at the conference. Starting with 17 mentors and 33 students in 2016 at ISCA with “Meet a Senior Architect”, the two programs have now expanded into ISCA, ASPLOS and MICRO with ISCA having 55 mentors and 93 students, and ASPLOS having 142 mentors and 255 students.

**(11) 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 with Natalie Enright Jerger as the inaugural chair. 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 launched an official election process in early 2022 for the positions of Chair, Vice Chair, and Executive Committee members. The incoming WICArch chair is Kelly Shaw.

**(12) Computer Architecture Student Association (CASA):** CASA is an independent student-run organization with the express purpose of developing and fostering a positive and inviting student community within computer architecture. CASA is now run by a steering committee of 13 members. 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. In 2021, we funded CASA for the Promotion of Balanced Mental Health for Graduate Students event. CASA also ran the “Meet a Senior Student” together with SIGARCH’s “Meet a Senior Architect” at our conferences this past year.

**OUTREACH**

**(1) Computer Architecture Podcasts:** Boris Grot, our Communication’s Team chair launched the Computer Architecture Podcasts in 2020 with Lisa Hsu and Suvinay Subramanian 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](http://comparchpodcast.podbean.com/). In 2021 there were a total of three podcasts with Mark Hill of Microsoft, Christina Delimetrou of Cornell, and Fred Chong of U. Chicago. The podcasts have enjoyed 7500 downloads, a 70% increase in 2021 as compared to prior year.

**(2) Computer Architecture Today (CAT):** In 2021, CAT continued serving as a successful platform for our community members and those in related fields to discuss diverse topics of interest, thanks to its blog editor, Rajeev Balasubramonian, with the help of the associate blog editor, Christian Delimetrou. This year the blog featured 45 articles with over 90,000 views.

**(3) Communication Team:** Our Communication Team under Boris Grot’s leadership as the chair, together with 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. The YouTube! channel has continued to serve as a platform to host all recordings for the virtual/hybrid conferences, starting with ASPLOS’20. We welcome Akanksha Jain as the new content editor in 2022 and thank Samira for her outstanding service. Adrian Sampson remains the social media editor.

**GRANTS & SUPPORT PROGRAMS**

We have a number of grants and support programs that are coordinated and managed by our Treasurer, Karin Strauss. These include:

**(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. In 2021, the workshop was held at ISCA and funded 115 students from all over the world including 7% from Africa, 8% from Europe, 15% from Middle East, 33% from North America and 37% from Asia (besides Middle East).

**(2) Student travel grants:** Student travel grant for conferences is among our flagship benefits 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 2021, 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 2021, we financially sponsored CASA’s Promotion of Balanced Mental Health event for Graduate Students, 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.

**GUIDELINES & RESOURCES FOR ORGANIZERS**

The troubling events in the community in the past three years with respect to violations of code ethics and publication procedures 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. In 2021, we outlined a few of these questions in a Computer Architecture Today [blog](https://www.sigarch.org/questions-about-policies-processes-in-the-wake-of-jic/). We are glad to see that ACM is taking steps in addressing some of these concerns. We are also glad to see that other SIGs are following a few of our guidelines for conference organizers to vet team members against ACM’s sanctions database.

Starting in 2020 we reported a number of initiatives 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. In 2021, in addition we have accomplished the following:

**(1) Best practices for conference reviewing:** In 2021, Boris Grot and José Martínez of SIGARCH (together with Daniel Jiménez and Moin Qureshi for TCCA) published a [best-practices document](https://www.sigarch.org/wp-content/uploads/2021/11/Best-Practices-for-Reviewing-Process.pdf) for anonymity, conflict of interest, and ethics guidelines for program committee chairs, authors and reviewers which was the result of two years of work and included integrated feedback form the community. The document will hopefully inspire other SIGS to adopt similar best practices as they see fit.

**(2) Best practices for program chairs.** In 2021, the SIGARCH/TCCA team started updating the [best-practices document](https://www.sigarch.org/wp-content/uploads/2021/11/Best-Practices-for-ISCA-PC-Chairs.pdf) for program chairs which was originally drafted in 2013 for ISCA. The new document includes guidelines for vetting the invited list of reviewers against the ACM and IEEE’s sanctions database and by the conference Steering Committee. This document is recommended for all SIGARCH- and TCCA-sponsored conferences and can hopefully serve as a boilerplate for other SIGs.

**(3) Program chair/General chair packets:** In recent years, the combined effect of growth in the community, increase in the number of initiatives we have launched in SIGARCH for the community, and transformation of conferences from in-person to online and hybrid has resulted in unprecedented load on conference organizers and program chairs. Under Martha Kim’s leadership and together with TCCA, we started working on packets for [program chairs](https://www.sigarch.org/wp-content/uploads/2022/01/PC-chair-packet.pdf) and [general chairs](https://www.sigarch.org/wp-content/uploads/2022/05/Packet-for-General-Chairs.pdf) with guidelines and pointers to information, resources and tools. We also continue updating the Architecture [PCDB](https://www.sigarch.org/architecture-pcdb/), a database of service history from reviewers in four computer architecture conferences, as well as, IEEE Micro Top Picks, which is available on the SIGARCH website. The webpage tracks the history of service by a reviewer as a main or external program committee member.

**(4) 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 and it will be piloted in Fall 2022. We are also in touch with ACM to make this platform available to other SIGs.

**(5) Guidelines for sponsored and in-cooperation conferences:** In 2021, Martha Kim led the creation of a new set of [guidelines](https://www.sigarch.org/wp-content/uploads/2021/11/Guidelines-for-Sponsorship.pdf) reflecting SIGARCH’s minimum standards for sponsored and in-cooperation conferences to follow. The new requirements include (but are not limited to) posting ACM’s Code of Ethics and Professional Conduct and ACM’s Policy Against Harassment on the conference website, prompt reporting of alleged violations of these codes, using double-blind review processes for paper selection, considering ACM’s guidelines for forming a diverse team for organization and reviewing, and vetting the team against ACM’s sanctions database.

**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](https://www.sigarch.org/about-us/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

ACM SIGBED Annual Report 2021-2022

**Submitted By: Steve X. Liu**

SIGBED has been actively organizing and sponsoring multiple activities and conferences for the real-time, embedded, and cyber-physical systems communities. Below are highlights during the reporting period reflecting that SIGBED is a healthy and viable organization.

### SIGBED Leadership

The newly selected SIGBED leaders for July 2021-June 2023 include: Steve Liu (Chair), Sayan Mitra (Vice Chair), and Wanli Chang (Secretary-Treasurer).

Board of Directors:

Jim Anderson (Past Chair), Samarjit Chakraborty, Farinaz Koushanfar, Insup Lee, Jie Liu, Martina Maggio, Niki Trigoni, Wang Yi.

Three out of the eight Board Directors are female.

Other Executive Committee Members:

Tei-Wei Kuo, Stanley Bak, Chuchu Fan, Song Han, Chenren Xu, Fanxin Kong, Kyoseung Kim, Yuan-Hao Chang

### Awards

SIGBED offers several awards to recognize outstanding members or work by members of the community. Details and most up-to-date information 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. The 2022 Award Selection Committee was formed with Prof. Wanli Chang as the Award Chair, with 6 other award committee members who are all respected researchers with diverse technical backgrounds in the field. We received 8 nominations and the award committee independently evaluated all nominated dissertations. The award was given to Tanya Amert from the University of North Carolina at Chapel Hill, for her thesis “Enabling Real-Time Certification of Autonomous Driving Applications''.

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. The 2022 Award Selection Committee was formed with Prof. Tei-Wei Kuo as the Award Chair, with 5 other award committee members who are all respected seniors in the field. We received 7 nominations to the Early Career Researcher Award. Each candidate was discussed fully by the Award committee. The final decision for the selection of SIGBED Early Career Researcher Award 2022 was given to Marco Zimmerling from the University of Freiburg, Germany.

The SIGBED-SIGSOFT 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, since 2020 we have revamped the selection process and begun to advertise it aggressively. The effort definitely has paid off: we have received 7 stellar candidates from the community. The award selection committee this year is chaired by Professor Nan Guan from City University of Hong Kong, with 5 other award committee members who are all respected seniors in the field. All the applicants have excellent research records in embedded systems, and proposed exciting research topics crossing over embedded systems and software engineering. After a two-round selection process, finally the selection committee decided to grant the award to Akshay Gadre, who is a graduate student in Carnegie Mellon University under the supervision of Swarun Kumar. The award was recognized by the ACM SIGBED Chair at the ESWEEK 2021 virtual conference. We are currently soliciting nominations for 2022’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 2021 SIGBED-EMSOFT Best Paper Award was given to the paper “Verified Lustre normalization with node subsampling” by Timothy Bourke, Basile Pesin, Paul Jeanmaire, and Marc Pouzet. The selection process for the 2022 SIGBED-EMSOFT Best Paper Award is currently underway, and the winner will be announced during the ESWeek 2022 in October this year.

This year, SIGBED created two new senior awards, i.e. SIGBED Technical Achievement Award, and SIGBED Distinguished Leadership Award.

The SIGBED Technical Achievement Award, established in 2022, is to recognize significant and sustained contributions to research and/or system implementations relevant to SIGBED. The award is based on the impacts of the research and/or system implementations made by the awardee throughout the lifetime.

The SIGBED Distinguished Leadership Award, established in 2022, is to recognize individuals who have exemplary and substantive leadership in leading and implementing activities over the communities relevant to SIGBED, at regional, national, and/or international level.

Both senior awards are handled by the Award Selection Committee, which is chaired by Prof. Tei-Wei Kuo, with 5 other award committee members who are all respected seniors in the field. The selection process is currently underway, and winners will be announced during the ESWeek 2022 in October this year.

### 

### **Student Grants and Competitions**

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. 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.

• 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 planned a number of student travel grants for the CPS-IoT Week 2022. However, the conferences decided to go completely virtual from hybrid due to Covid and hence no grants were actually given out. We are planning student travel grants for ESWEEK 2022 as well and monitoring its status.

We plan to continue to provide student travel grants to help students cover the cost of conference registration as conferences have been transitioned back to hold physically again or in hybrid mode.

We are holding the ACM SIGBED Student Research Competition in ESWEEK 2022. SIGBED is investing in prizes, travel grants, and relevant activities, to attract participants.

**Conferences**

SIGBED is currently sponsoring the following conferences: Three ESWEEK conferences (CASES, CODES+ISSS, EMSOFT) and two symposia (MEMOCODE and NOCS); five CPS-IoT Week conferences (ICCPS, HSCC, RTAS, IPSN, and IoTDI); and three other conferences, namely, Chase, LCTES, and SENSYS.

### SIGBED Business Meeting

The First SIGBED Business Meeting of 2022 was held on May 4th 8-9 pm central time. This was a virtual meeting open to the public held together with the CPS-IoT Week 2022. We are happy to report that this meeting had a record number of thirty plus participants and led to robust and productive discussions. During the meeting, we presented and discussed the SIGBED background and history, membership status, the reasons and benefits to join SIGBED and ACM, the SIGBED leadership, conferences, awards, student competitions ACM SIGBED SRC, SIGBED blog, plans, and discussions. Many of the subsequent plans and actions of SIGBED EC have been based on the feedback we received from the community in this open meeting.

### SIGBED Website and Blog

## The SIGBED 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. The website is available at https://sigbed.org/.

## SIGBED blog has attracted many contributions by highly active researchers that reflect cutting-edge work and new events on embedded systems being done today. Since September 2021, the SIGBED blog has published eight high-quality articles on a variety of topics. Please see https://sigbed.org/blog/ for more details.

### Diversity, Equity, and Inclusion

SIGBED currently has 10% of our members are women. Three of the eight SIGBED Board members are women. We are eager to improve the representation and engagement of women and other minorities at every level in our community. Learning from successful programs organized by other SIGs, such as SIGARCH and SIGPLAN, we plan to undertake the organization of mentoring workshops and create a SIGBED [CARES](https://www.sigarch.org/benefit/cares/cares-resources/) committee. However, these activities have been held back this year by the lack of in-person conferences (see Issues Section below).

### **New Initiatives and Other Activities**

SIGBED is in the process of starting a new Distinguished Speakers Program. The format will be online seminars/lectures. The purpose is to engage the community with state-of-the-art research and industry development, and government policies. It will echo the mission of the ACM Distinguished Speakers Program, i.e. “is an outreach program that brings distinguished speakers from academia, industry, and government to give presentations” to ACM SIGBED members, focusing on the interests and benefits of the SIGBED community.

SIGBED is also in coordination with other SIGs to start Cross SIG-activities. The first one will be SIGBED x SIGDA Workshop on Emerging Techniques in System Design and Design Automation for Embedded Systems, to be held in conjunction with the ESWeek 2022. It is the first ACM SIGBED Cross-SIG Forum Series.

### **Issues**

**Impact of COVID-19.** It is hard to overstate the negative impact of COVID-19 on the SIGBED community. The flagship event of the year, CPS-IoT Week 2022 with 5 leading conferences (ICCPS, HSCC, RTAS, IPSN, and IoTDI) was supposed to be in Milan in May, and it was finally decided to go fully virtual by the CPS-IoT Week organizers. CPSWeek 2021 was virtual and the plans for CPSWeek 2023 are still not publicly known. The other flagship event of the year, ESWeek with another set of leading conferences (EMSOFT, CASES, CODE+ISSS) will be held in the hybrid mode in Shanghai, China in October 2022. However, with the quarantine requirements at the time of writing, it appears unlikely that ESWeek will also serve the usual needs of the international SIGBED community. Despite these limitations, SIGBED operations have been running well.

**SIGCAS Annual Report**

**Submitted by: Douglas Schuler**

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

I'm happy to report that according to our former chair, now Executive Committee member, SIGCAS is in the healthiest state it has been in a decade. Our finances are such that we are now in a position to consider substantial projects. We are taking care of the SIG obligations on a timely basis. And our communication with members via newsletters, announcements, and social media is regular. That notwithstanding, we are working collaboratively in many directions, with our members, other ACM SIGs and others outside of ACM, to help strengthen SIGCAS in terms of its organization as well as in its impacts on the world at large, and to make SIGCAS membership more significant to our members. We believe the role of SIGCAS is critical, especially in this era when the potential for good and for abuse is so ubiquitous and so central to everyday life, now and into the foreseeable future.

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

Based on the data from our November 2020 membership survey (23% response rate) we got a pretty good feel for the many non-diverse demographics of our SIG — primarily white, male, and North American (77% in US alone) and Eurocentric. (We believe that our members are more likely to be older.) We may have known all of that on some level but the survey made it clearer. The survey also helped us understand some of the things that our membership would like us to work on, such as building more community within our group, and what members felt were their most important issues (Schuler 2021). The board recognized the need to help cultivate a more diverse organization and we have been working on ways to encourage that. To that end SIGCAS decided to engage a consultant to discuss exploring DEI issues within its members as well as outreach to prospective members. The focus of this project was to better understand the experiences of women and people of color in industry and academia and how SIGCAS can attract prospective members to join and retain them.

The report, based on interviews and focus groups with SIGCAS and non-SIGCAS members made several recommendations for the short-term and for the long-term. Having intentional conversations among the SIGCAS leadership about DEI was a high-priority short-term recommendation. Others included increasing representation in the newsletter and  creating opportunities for community building and engagement (which was also emphasized in our membership survey). Some longer term recommendations including developing a DEI framework, strategic plan, and marketing plan and materials, and to better understand and meet the needs of industry professionals and scholars of color and women. At this time, I'd say that we are still digesting the recommendations from the report and how best to move in those directions. SIGCAS is a work in progress and we're currently working incrementally to build a more diverse SIG.

3. Awards and recipients

SIGCAS currently gives two awards annually. The Making a Difference award is presented to an individual who is nationally or internationally recognized for promoting awareness of ethical and social impact issues related to computing and for providing leadership that encourages responsible action on the part of computer professionals. In 2021, this award was presented to Deanna Kosaraju who has worked for years on projects related to tech and women.

The Outstanding Service award is generally presented to a SIGCAS member who merits recognition for outstanding service in carrying out work that fosters SIGCAS’ well-being, vibrancy, visibility and currency.  This service may take many forms, including organizational leadership, editorial board participation or outreach efforts to expand SIGCAS’ influence in the ACM and computing community at large. In 2021, the award was presented to Barbara Boucher Owens. Barbara has been in the computing field since 1967 when she started work at IBM Research in Yorktown Heights, NY. Since that time she has provided leadership in dozens of projects with SIGCAS, SIGCSE, and ACM generally.

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

SIGCAS sponsors two conferences: COMPASS and GoodIT. Neither conferences singles out "best papers." In the future, SIGCAS could work with the organizers of these conferences to develop criteria or a process for identifying these.

5. Conference activity

Our flagship event is our recently launched SIGCAS Showcase, in which we present our two awards and … Our first SIGCAS Showcase virtual event in September 2021 was successful. Besides showcasing our two award winners, there were two industry panels, an educational panel, and a panel devoted to climate change and computing. We didn't keep an official tally but it seems that we had about 60 attendees — respectable for our first ever (we think) SIGCAS autonomous event. We are now planning for our second SIGCAS Showcase which is scheduled for September 2022.

SIGCAS also sponsors two important annual conferences; GoodIT, and Compass: Computing for Sustainable Societies.

ACM COMPASS which was inspired by the United Nations Sustainable Development Goals (SDGs). ACM COMPASS 2022 (June 29-July 1) 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 was convened 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."

Additionally, SIGCAS also annually organizes an affiliated (formerly called pre-symposium) event at the SIGCSE Technical Symposium. Sometimes there are additional sessions at the SIGCSE Technical Symposium. In 2022 this included a Special Session as well as an invited Sister Track session.

Finally, SIGCAS recently launched a monthly Works in Progress program (via Zoom) in which a SIGCAS member (in almost all cases) presents on a project that they're working on in a fairly informal setting. These are designed to help build the SIGCAS community, provide opportunities for presenters and participants, and explore the wide sphere of computers and society.

WIP Events

November 10, 2021. Douglas Schuler, Wicked Problems, Patterns, and Pattern Languages

December 8, 2021. Rick Blumenthal and Mikey Goldweber, a discussion on their work with CS-202X January 12, 2022. Norberto Patrignani on Slow Tech (for a fair, clean, and just tech) February 9, 2022, Brian Krupp on Campus Plate, an app to reduce food waste on the college campus March 9, 2022 Jeb Weisman, Interventions for Large-Scale Health Emergencies April 13, Michelle Trim, Building a 'full-stack' Course in Socially Responsible Computing May 11, Anna de Liddo, Bcause, a tool for discussion-enhanced collective decision-making

Unfortunately our June event on Making CS Education More Equitable and Accessible for our Most Marginalized Students, which included two CS graduate students and two recent CS PhDs was zoom-bombed and had to be rescheduled. We strongly suspect that the attack was due to the subject matter and the SIGCAS chair (the author of this report) acknowledged that he was unprepared (which may also demonstrate his privileged status) and we are implementing protocols that will result in safer places for all attendees.

6. Comment on special projects and non-conference programs that provided service

There are two active communities within SIGCAS: HFOSS (Humanitarian Free and Open Source Software) which focuses both on HFOSS projects in general, and strategies for incorporating HFOSS development in the CS curricula, and CSG-Ed (Computing for the Social Good in Education) that 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." We run an announce listserve for announcements and a rarely used talk listserve. With a lot of encouragement and assistance we now have a Discord server (mentioned is next section) and a Twitter account that now has over 300 followers (up from 100 or so, two years ago).

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

One of the main issues facing SIGCAS is what the leadership should do to promote more diversity, skill and knowledge development, as well as 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 the enormity of the field, and the complexity and inherent interdisciplinarity of how computerization and society interact makes it difficult to coalesce into meaningful discussion and action. One approach that we are exploring is establishing working or issue-oriented groups within SIGCAS or perhaps across ACM as a whole. Following the recommendations of many of our younger members we've established a Discord server and we've established the following channels — each of which could in fact be considered a de facto interest group — : Civic Tech; Diversity, Equity, Social Justice; Education; Elections and Governance; Environmental Issues; Privacy and Surveillance; Professional Ethics; Social Responsibility; and War and Peace.

Also, SIGCAS is the only — or one of the few — SIGs with neither journal or conference that it can call its own. The situation could evolve, perhaps through an ongoing collaboration with ACM's new Journal of Responsible Computing, of which I am an advisory board member. Our Showcase event could also evolve into a full fledged panel. SIGCAS has survived for over 50 years without these but a thoughtful integration of journals and conferences and activism and public policy might be an achievable and important goal.

Another 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 (or policy groups like USTPC). Along these lines we are considering the idea of establishing liaisons between SIGCAS and other SIGs. As the societal/ethical implications of computing continue to permeate all areas of computing, other SIGs are beginning to explore their area's relationships with these issues. SIGCAS wishes to partner with these SIGs for a variety of reasons; not least of which is to avoid duplication of effort and to share our various understandings of the state of the art. 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. On April 29, Doug Schuler, as SIGCAS chair, made a presentation to the SIG Governing Board, bringing up many of these possibilities, with a potential focus on social responsibility, which will also be explored in our upcoming Showcase.

Unfortunately, the ability and/or willingness of the professional computing world to come to terms with the magnitude of the current and looming impact of computers on society, is not keeping pace with the need. In other words, things are getting less governable.

References

*Douglas Schuler. 2021. Thinking about the 2020 SIGCAS membership survey. SIGCAS Comput. Soc. 50, 1 (April 2021), 7–11.* [*https://doi.org/10.1145/3470834.3470836*](https://doi.org/10.1145/3470834.3470836)

**SIGCSE Annual Report**

**July 2021 - June 2022**

**Submitted by: Adrienne Decker, SIGCSE Immediate Past 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 historical highs, mainly due to the uncertainty around conferences, which is when a majority of members renew or take on new memberships. Attendance at our first in-person conference since the pandemic was down for the in-person component, but when coupled with hybrid attendance, was very close to pre-pandemic levels. We have had large responses to our special projects awards program. We now have four fully functioning steering committees (one for each of our major conferences).

We held elections in May 2022 with an election slate that was likely the most diverse in the history of the SIG, encompassing gender, ethnic, and global diversity in its makeup. The elected board has a diversity that attempts to reflect the diversity of the membership of the SIGCSE community in terms of country of residence, gender, and race/ethnicity.

2. Efforts related to Diversity, Equity and Inclusion

Immediately before leaving office, the SIGCSE Board 2019-2022 submitted to the SGB Awards committee, a proposal for a new SIGCSE-level award to recognize early career contributions to broadening participation. First nominations for the award will be due on October 1, 2023 and we are very much looking forward to recognizing the members of our community that are doing work in this area early in their careers.

An effort to form a SIGCSE Committee on DEI has stalled due to issues with the identified leadership simply being too overextended in their other personal and professional commitments to move the initiative forward. The outgoing board has left it as a task for the incoming board to help revive this initiative and help move it forward. The outgoing board expressed its fervent desire to have such a committee be community-based and not appointed by the board, thus wanting to create it through the SIGCSE Committees initiative.

3. Awards

The 2022 SIGCSE Award for Outstanding Contribution to Computer Science Education was presented to Barbara Ericson from University of Michigan. Her work focuses on issues of broadening participation in computing, particularly for women, and she has worked extensively with the Advanced Placement Computer Science A students and teachers in an effort to broaden participation as well as overall success on the exam for students.

The 2022 SIGCSE Award for Lifetime Service to the Computer Science Education Community was given to Simon. Simon has been involved on numerous program and conference organizing committees and has served as submissions and database chair for many years for the ICER conference. Simon elected to have his award presented at ITiCSE 2022, which occurred outside this reporting period. So while the announcement of the award has been made to the community, it was not presented to him until July 2022.

The 2022 SIGCSE Test of Time award was awarded to "Connecting K-16 Curriculum & Policy: Making Computer Science Engaging, Accessible, and Hospitable for Underrepresented Students" authored by Joanna Goode. The paper was originally printed in the proceedings of the 41st ACM Technical Symposium on Computer Science Education in 2010. This paper discussed how reform at the K-16 level depends on the interactions of curriculum development, professional development, and collaborative policy strategies.

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

The 2021 ACM International Computing Education Research Conference (ICER 2021) awarded Best Paper to “Re-Examining Inequalities in Computer Science Participation from a Bourdieusian Sociological Perspective” authored by Maria Kallia and Quintin Cutts from University of Glasgow.

In 2022, 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 Computing Education Research category, the top three papers were:

\* Jayne Everson, F. Megumi Kivuva, and Amy J. Ko, “A Key to Reducing Inequities in Like, AI, is by Reducing Inequities Everywhere First”: Emerging Critical Consciousness in a Co-Constructed Secondary CS Classroom”.

\* Sophia Krause-Levy, Sander Valstar, Leo Porter, and William G. Griswold, “A Demographic Analysis on Prerequisite Preparation in an Advanced Data Structures Course”.

\* Juho Leinonen, Francisco Enrique Vicente Castro, and Arto Hellas, “Time-on-Task Metrics for Predicting Performance”.

In the Experience Reports and Tools category, the top three papers were:

\* Wengran Wang, Audrey Le Meur, Mahesh Bobbadi, Bita Akram, Tiffany Barnes, Chris Martens, and Thomas Price, “Exploring Design Choices to Support Novices’ Example Use During Creative Open-Ended Programming”.

\* Jan Vykopal, Valdemar Švábenský, Pavel Seda, and Pavel ?eleda, “Preventing Cheating in Hands-on Lab Assignments”.

\* Jiameng Du, Yifan Song, Mingxiao An, Marshall An, Christopher Bogart, and Majd Sakr, “Cheating Detection in Online Assessments via Timeline Analysis”.

In the Position Papers and Curriculum Initiatives category, the

top two papers were:

\* Kathryn Cunningham, Yike Qiao, Alex Feng, and Eleanor O’Rourke, “Bringing “High-level” Down to Earth: Gaining Clarity in Conversational Programmer Learning Goals”.

\* Veronica Cateté, Amy Isvik, and Marnie Hill, “A Framework for Socially-Relevant Service-Learning Internship Experiences for High School Students”.

5.   Describe conference activity

SIGCSE Sponsored 2 conferences in this reporting year:

ICER 2021, held virtually, was originally scheduled in Charleston, SC, USA. August 16-19, 2021. Attendance: 253.

SIGCSE Technical Symposium 2022, our first hybrid conference,  was held in person in Providence, RI, USA and virtually with the Pathable platform. March 13-20, 2021. Attendance: 1546

The ITiCSE conference in 2021 was held in June and discussed in last year’s report and in 2022, ITicse was held in July and will be discussed in next year’s report.

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 2021 call resulted in 18 applications of which four were funded for an acceptance rate of 22%. Yudong Liu and Yasmine Elglaly from Western Washington University, USA were awarded $5,000 for a project titled " Teaching Accessibility for Fairness in AI Courses." Jacqueline Whalley, Tony Clear, Stephen Thorpe, Ramesh Lal and Jim Buchan from Auckland University of Technology, New Zealand were awarded $5,000 for a project titled " From Student to Working Computer Science and Software Engineering Professional: Bridging the Gap." Melissa Lynn, Brad Miller, and Duane Nykamp from Gustavus Adolphus College, USA were awarded $5,000 for a project titled " Integrating Jupyter Notebooks with Runestone Interactive Using Doenet." Stephany Coffman-Wolph and John K. Estell from Ohio Northern University, USA were awarded $5,000 for a project titled “In a Woman’s Voice: An Alternative Gamification of The Oregon Trail.”

The May 2022 call resulted in 21 applications of which 3 were funded for an acceptance rate of 14%. Ismaila Sanusi & Fred Martin from University of Massachusetts Lowell, USA, were awarded $5,000 for a project titled “A participatory approach to integrating machine learning into core subjects: Evidence from in-service teachers.” Jonathan Browning from Queen’s University Belfast, United Kingdom, was awarded $5,000 for a project titled “Towards Evidence Based Teaching of Entrepreneurship to Computer Science Students.” Victoria Chavez from Northwestern University, USA and Briana Bettin from Michigan Tech, USA, were awarded $5,000 for a project titled “Recipes for Resistance: A Multi-Modal Podcast Centering Justice, Joy, and Healing.”

Every other year, the SIGCSE Board runs a workshop for graduate students and new academics called the Professional Development Session for New and Aspiring Educators. The workshop features small group discussions among the students and presentations by seasoned academic mentors providing advice and guidance to faculty who are just starting out in their careers. Topics for discussion and presentation centered around finding a career path; balancing teaching, research, and service; working with colleagues; navigating the tenure process; course organization; and student mentoring advice. The workshop took place on Wednesday, March 2, 2022 directly before the 2022 symposium and was attended by both in-person and virtual attendees. The workshop was organized by Diane Horton (University of Toronto) and Meghan Allen (University of British Columbia).

On alternate years, the SIGCSE Board runs a workshop for department chairs. The SIGCSE Department Chairs Roundtable will be held in Portland, Oregon, USA in March 2023.

SIGCSE has a Travel Grant Program for faculty and teachers who have never attended the SIGCSE Technical Symposium. No awards were given in 2021 due to the virtual nature of the symposium. Awardees who were not able to travel in 2020 due to the pandemic were allowed to use their 2020 award in 2022. In the 2022 iteration of the awards cycle, 20 awards were given out for attendees of the conference.

There was one doctoral consortium associated with SIGCSE conferences during this year.

A doctoral consortium ran virtually just prior to the 2021 International Computing Education Research Conference (ICER). The students presented their work to the discussants and engaged in discussion about various topics such as graduate school, research, and careers. The doctoral consortium was attended by 14 graduate students in computer science education. SIGCSE typically provides travel grants to the students and partial funding for lodging during the workshop and also during the ICER conference. However, since the conference was virtual, travel support was not needed. Students instead only received free registration for the conference. The SIGCSE Board will continue to fund up to twenty Doctoral Consortium grants for participants of the ICER conference in 2022. The Doctoral Consortium was run by Lauren Margulieux (Georgia State University, USA) and Felienne Hermans (Leiden University, Netherlands).

7. Key Issues for the Next 2-3 Years

As the world continues to evolve since the pandemic has started, organizations will need to evolve and change as well. Having our first hybrid event in 2022, we learned a lot about what it takes to run a hybrid event for a conference as large as the SIGCSE Technical Symposium. Going forward, we are committed to exploring hybrid and virtual options for conferences and working to make sure all who are interested in being part of our community can participate. However, there are challenges to hybrid events in the form of cost and some lack of good technologies to support hybrid interaction. How to structure hybrid conferences will likely continue to evolve over the next several years as expectations and technology change.

In addition, SIGCSE, like all organizations, needs to respond to the issues of diversity, equity, inclusion, and social justice both at a micro and macro level. The issues of DEI exist everywhere and manifest in many ways depending on the local context. As an organization, we need to strive to be aware of these issues and work to address inequities as we find them. We need to continually work to create diverse conference committees, review committees, and other governing boards of the organization that will reflect the diverse backgrounds of the membership.

**2021-22 SIGDA Annual report**

**Prepared by**

**SIGDA Executive Committee Members**

SIGDA has been a vibrant special interest group that sponsors and organizes many educational and professional activities benefiting the design and design automation community. As the whole society is recovering from the pandemic, this past year has presented some unique challenges but also some good opportunities for hosting virtual events and outreach to broader audiences. Below are the highlights of the activities for the reporting period.

1. **Comment on the ways in which the SIG is a healthy and viable organization**
2. **Describe your efforts related to Diversity, Equity, and Inclusion.**
3. **Provide a list of awards and recipients**
4. **List significant papers on new areas that were published in proceedings**
5. **Describe conference activity**
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.**

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

SIGDA is committed to advancing diversity and broadening the participation of professionals from underrepresented 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). The committee has resumed some 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 in 2021. The duties of the 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. Four candidates were nominated and Prof. Laleh Behjat from the University of Calgary was elected to the new SIGDA EC as the Diversity and Ethics Chair.

**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 2022 Pioneering Achievement Award winner is Professor Rob A. Rutenbar, University of Pittsburgh, for his lifetime of outstanding achievements in Electronic Design Automation.

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 2022 goes to Ricardo Telichevesky, Kenneth S. Kundert and Jacob K. White for their paper “Efficient Steady-State Analysis based on Matrix-Free Krylov-Subspace Methods”, in Proc. of the 32nd Design Automation Conference, 1995.

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 2022 ACM Outstanding Ph.D. Dissertation Award in Electronic Design Automation is Ganapati Bhat, for his dissertation “Design, Optimization, and Applications of Wearable IoT Devices”, ﻿Arizona State University, Advisor: Umit Y. Ogras.

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 2022 goes to Yingyan (Celine) Lin, Rice University.

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 careers in extraordinary services to promoting, leading, or creating ACM/SIGDA programs or events.

* The 2022 SIGDA Distinguished Service Award recipients are
  + Vijay Narayanan, The Pennsylvania State University, *﻿for extraordinary dedication and leadership to SIGDA, and*
  + Harry Foster, Siemens EDA, *for extraordinary dedication and persistence in leading DAC during pandemic*.

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 2022 SIGDA Meritorious Service Award recipients are

* + Jeff Goeders, ﻿Brigham Young University, ﻿for chairing System Design Contest @ DAC for the past 3 Years,
  + Cheng Zhuo, ﻿Zhejiang University, for the leading efforts to the success of SRC@ICCAD and SDC@DAC as chairs for the past 5 years, and the sustained contributions to the EDA community in China,
  + Tsung-Wei Huang, ﻿University of Utah, ﻿for chairing CADathlon and CAD contests at ICCAD for 3 years. These activities have engaged hundreds of students into CAD research, and
  + Yiyu Shi, ﻿University of Notre Dame, for outstanding services in leading SIGDA educational efforts.

**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.

**SIGDA CONFERENCE ACTIVITIES**

In 2022, SIGDA sponsored 17 conferences and workshops as highlighted in the table below:

|  |  |
| --- | --- |
| Asia and South Pacific Design Automation Conference | ASPDAC |
| Design Automation Conference | DAC |
| Design, Automation and Test in Europe | DATE |
| Embedded System Week | ESWEEK |
| International Symposium on Field-Programmable Gate Arrays | FPGA |
| Great Lakes Symposium | GLSVLSI |
| International Conference On Computer-aided Design | ICCAD |
| International Symposium on Low Power Electronics and Design | ISLPED |
| International Symposium on Physical Design | ISPD |
| International Workshop on Logic and Synthesis | IWLS |
| International Conference on Formal Methods and Models for Codesign | MEMOCODE |
| Workshop on Machine Learning for CAD | MLCAD |
| Network on Chip Symposium | NOCS |
| International Symposium on Nanoscale Architectures | Nanoarch |
| Symposium on Integrated Circuits and Systems Design | SBCCI |
| System Level Interconnect Prediction Workshop | SLIP |
| International Workshop on Timing Issues in the Specification and Synthesis of Digital Systems | TAU |

SIGDA also supported three additional conferences with in-cooperation status. These include: International Conference on Neuromorphic Systems (ICONS), IEEE International Conference on VLSI Design (VLSID), and IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC).

The conferences under the SIGDA umbrella continue to maintain an exceptional standard of quality and visibility in the design automation area. Submissions in general continue to go up. For example, submissions to one of our flagship conferences (DAC) increased to 987 in 2022, from 914 in 2021. Submissions to the three main ESWEEK conferences were also up compared to 2021 (CASES - 118 submissions, a 200% increase; CODES – 127 submissions, a 6% increase; and EMSOFT – 100 submissions, a 76% increase). Submissions to ICCAD, another flagship conference, went up to 595, a 12% increase over 2021. Registrations also showed an upward trend compared to 2021. For example, registrations to ASP-DAC 2022, another flagship conference, went up to 476 in 2022 from 348 in 2021. Overall, the biggest challenges faced by conferences were in ensuring a surplus given the uncertainties related to COVID that still seem to be affecting conference attendance, forcing virtual or hybrid formats that typically have lower registration rates, which in turn led to lower industry physical presence and sponsorships, and overall loss of revenue. This was the case particularly with our flagship DAC conference, and also for other conferences such as DATE and ASP-DAC.

**SPECIAL PROJECTS**

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 one webinar in April 2022. The topics cover the best of EDA research in 2021. More details about DAWN can be found at:<https://dawn-webinar.github.io/DAWN/>.

**Who’s Who in SIGDA**

This year, we started a new monthly column, called “Who’s Who in SIGDA”, which introduces and highlights some researchers in the EDA community. The monthly information can be found in the SIGDA e-newsletter and at <https://www.sigda.org/whos-who/>.

**ACM SIGDA Speaker Travel Grant Program**

This year, we started a new program, called the SIGDA Speaker Series Travel Grant, which actively supports the travels of the speakers who are invited to give lectures or talks in local events, universities, and companies, so as to disseminate the values and impact of SIGDA. These speakers can be from either academia or company and are considered as good lectures that can help reach out to the audiences in the broad field of design automation. Once the application is approved, SIGDA will issue partial grants to cover the speaker’s travel expenses, including travel and subsistence costs. This program can be found at <https://www.sigda.org/programs/acm-sigda-speaker-travel-grant-program/>.

**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.

**Other activities**

* The Ph.D. Forum at the Design Automation Conference received a total of 45 submissions out of which 32 contributions were accepted based on 178 reviews from 28 PC members.
* Design Automation Summer School, and Richard Newton Fellowship
* The Early Career Workshop at Design Automation Conference invited a total of 13 researchers from both academia and industry. There are 3 panels covering early career-related topics, including Scientific Research and Funding Opportunities, Career Development: Hiring and Promotion, and Industry Opportunities.
* The SIGDA University Demonstration at Design Automation Conference (Ubooth@DAC) 2022 received a total of 18 submissions. All submissions were reviewed by at least 3 reviewers from the organizing committee or external reviewers. 9 contributions were accepted to present at Ubooth@DAC. Each team had at least one speaker present at the event to showcase their work and interact with participants at DAC. Based on the technical merit and the performance of the presentation, 4 teams were awarded the “University Demo Best Demonstration”, including 1 first place, 1 second place, and 2 third place.
* The DAC System Design contest had 74 teams registered, with 26 teams submitting working designs. The top teams substantially improved upon results from the previous years, improving speed by more than 7x.
* The Hardware Security capture-the-flag competition, Hack@DAC 2022 at the 59th ACM/IEEE Design Automation Conference organized in collaboration with Intel and Synopsys received a total of 61 participants (23 teams) who made 50 bug submissions
* The SIGDA CADathlon International Programming Contest at the International Conference of Computer-Aided Design (ICCAD) was held. A total of 14 students (all graduate students) from China, Taiwan, Hong Kong, USA, and Brazil participated in it, and the top two teams were awarded.
* The ACM Student Research Competition (SRC) was held. A total of 30 students (8 undergraduate and 22 graduate students) participated in it, and the first place winner from each category advanced to the ACM Grand Finals.
* We are creating our first Job Fair@ICCAD and sponsoring TinyML Design Contest@ICCAD for the first time.
* The Ph.D. Forum at the 2022 Design, Automation, Test in Europe Conference received a total of 28 submissions out of which 22 contributions were accepted based on 79 reviews from 18 PC members.
* The Student Research Forum (SRF) at Asia and South Pacific Design Automation Conference (ASPDAC) 2022 accepted 17 participating students from all over the world and there were over 80 participants from both academia and industry.
* Besides the above activities, SIGDA communicates using SIGDA E-News.

**KEY ISSUES FACING SIGDA**

1. The biggest challenge is the financial situation of the Design Automation Conference (DAC), which was not able to financially break even in the past three years after all the overheads were deducted from the surplus. The SIGDA leadership is now working closely with the organizers of DAC to get it solved.
2. SIGDA is now actively seeking growth in emerging topics and economies. SIGDA is pushing consolidation of some small conferences which were heavily impacted by the COVID and working with the organizers to find solutions.
3. SIGDA works closely with industrial sponsors to maximize the coverage of sponsorships to conferences and educational activities. Synopsys is signing a large lump sum contract with SIGDA to sponsor a bundle of multiple conferences and activities. This model may be extended to other industrial sponsors.

SIGDOC FY ’22 Annual Report

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

**Submitted on: 15 August 2022**

# 

# **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, 200 participants registered for our virtual event (and regional in-person meet-ups) last October 2021, even though we only have 172 active members. The numbers for this year’s October conference—our first in-person one since 2019—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 2022. In terms of finances, SIGDOC continues to rest upon a significant surplus.

The current SIGDOC Executive Committee (EC) is entering into its final year of a four-year stint. The consistency over the past four years 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 (approved June 2022) 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 11th volume in 2023, we expect submission numbers to continue to increase. We have appointed a new Editor-in-Chief (Jordan Frith) and have created a new editorial position (Associate Editor) to help distribute the workload. The editor has been tasked with building connections with other organizations and creating a broader vision for the publication, while the Associate Editor will focus on the publishing process and our commitment to equitable and fair reviews.

**Diversity, Equity, and Inclusion**

We continued this past year in our commitments to diversity, equity, and inclusion in three ways.

The first is the continued commitment 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.”[[1]](#footnote-1) 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, guiding 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 newly appointed Associate Editor will be overseeing these practices.

The second is our formalization of our new annual budgetary line item ($2000) dedicated to inclusion to support projects forwarding justice-centered initiatives in the fields of communication design and technical communication. This call will be shared with our membership at the 2022 conference.

The third is our formalization of the Access Chair position on our board. This was part of our bylaw revision process, to allow future ECs to have discretion on board positions aimed at attending to equity and inclusion.

**Awards and Recipients**

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

1. **Career Advancement Research Grants**:
   1. “Readying for Risk: Analyzing and Creating Effective Company Safety Initiatives” — Joseph E. Williams, Ph.D, Louisiana Tech University
   2. “Increasing Access to and Usability of Health Communications for Alaska Natives in Rural Alaska” — Jessica Lynn Campbell, Ph.D, University of Alabama in Huntsville
2. **Best Paper** (in 2021 conference proceedings):
   1. Henry Covey. 2021. Disaster Documentation Revisited: The Evolving Damage Assessments of Emergency Management in Oregon. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 70–84.
   2. Soyeon Lee. 2021. Language Minorities’ Localization in COVID-19 Recovery: An Ecological Approach to Navigating Community-based User Experience. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 183–189.
3. **Diana Award**, celebrating an individual’s lifetime contribution to the fields of communication design, technical communication, user experience, or another related field. Awarded to Dr. Miriam F. Williams.
4. Student Research Competitions (from 2021 Conference):

**Graduate:**

* 1st Place: Ian Stark, “Neuro-Positionality in User-Centered Design: The Case of Student Disability Services”
* 2nd Place: Jiaxin Zhang, “Designed for Equitable Learning: A Study of UCD and Liquid Syllabus in an Online Synchronous Course”
* 3rd Place: Yingying Tang, “A Robot Wrote This?: An Empirical Study of AI's Applications in Writing Practices”

**Undergraduate:**

##### 1st Place: Hannah Goodsell, “A Jersey for Helmutt: A Videogame Designed to Communicate with Audiences”

##### 2nd Place: Kylie Call, “Strategies for International Communication: Getting to Know Your Audience”

##### 3rd Place: Koyo Nakamura, Han Feng, Sebastian Priss, and Hannah Mei, “Designing for Night-Time Reflection: How to Support Night-Time Reflection Through Non-Digital Means”

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

**Significant Proceedings Papers**

Some significant proceedings papers, based on clicks, downloads (min. 150), and citations, are as follows:

* Rachel Atherton. 2021. Narrative and Numerical: Bridging the Gap Between Quantitative & Qualitative Data through User-Centered Data System Design. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 2–8. <https://doi.org/10.1145/3472714.3473616>
* Henry Covey. 2021. Disaster Documentation Revisited: The Evolving Damage Assessments of Emergency Management in Oregon. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 70–84. <https://doi.org/10.1145/3472714.3473625>
* Avery C. Edenfield, Ryan Cheek, and Sam Clem. 2021. Trans\* Vulnerability and Digital Research Ethics: A Qubit Ethical Analysis of Transparency Activism. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 101–107. <https://doi.org/10.1145/3472714.3473628>
* Daniel Hocutt. 2021. Interrogating Alexa: Holding Voice Assistants Accountable for Their Answers. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 142–150. <https://doi.org/10.1145/3472714.3473634>
* Shyam Pandey and Jianfen Chen. 2021. Is Facebook Easier to Use than WeChat? A Critical Comparative Analysis of Interface Features of WeChat and Facebook. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 213–223. <https://doi.org/10.1145/3472714.3473644>
* Aimee Roundtree. 2021. Facial Recognition UX\*: A Case Study of Industry-Academic Partnerships to Promote User-Centered Ethics in Facial Recognition. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 240–246. <https://doi.org/10.1145/3472714.3473647>
* Aimee Roundtree. 2021. Facial Recognition UX\*: A Case Study of Industry-Academic Partnerships to Promote User-Centered Ethics in Facial Recognition. In The 39th ACM International Conference on Design of Communication (SIGDOC '21). Association for Computing Machinery, New York, NY, USA, 240–246. <https://doi.org/10.1145/3472714.3473647>

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 2021 conference took place in October (12th through 14th) virtually, with eight in-person hubs around the globe.

## The theme was “Building Coalitions…Worldwide.” The conference committee included:

* Conference Chair: Andrew Mara, Arizona State University
* Program Co-Chairs: Liz Lane (University of Memphis) and Halcyon Lawrence (Towson University)
* Student Research Competition Co-Chairs: Jack Labriola (Kennesaw 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 also had 8 small, in-person meetups globally and various attendance at each, reaching up to 20 participants:

* Lavras, Brazil: Hub Co-Chairs, Andre de Lima Salgado and André Pimenta Freire
* Beijing, China: Hub Chair, Zhijun Gao
* Limerick, Ireland: Hub Co-Chairs, Yvonne Cleary, Darina Slattery, and Ann Marcus-Quinn
* Lisbon, Portugal: Hub Co-Chairs, Manuela Aparicio and Carlos J. Costa
* East Lansing, MI, USA: Hub Chair: Liza Potts
* Tempe, AZ, USA: Hub Chair, Kathryn Lambrecht
* Raleigh, NC, USA: Hub Chair, Jason Swarts
* Tacoma, WA, USA: Hub Co-Chairs, Emma Rose, Enrique Reynoso, and Rebecca Schallon

We had 58 items that were peer reviewed and published in the proceedings, including 52 papers, poster, and panel abstracts and 12 poster abstracts as part of the Student Research Competition. The 64 items represent the highest number of peer reviewed pieces we have ever published in the proceedings. In all, we had 201 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 Russell J. Branaghan, PhD, President of Research Collective, a Human Factors and User Experience (UX) consulting firm and laboratory in Tempe, AZ.
* Live topical conversations
* Editors’ roundtable, including representatives from major journals in the field
* Workshops
* Ignite talks featuring industry practitioners in the greater Tempe, AZ 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:

* *Conference siting*. We will continue to work on formalizing our conference site selection framework. We currently have the PAF submitted for our 2023 conference, which is way ahead of our usual schedule.
* *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.
* *More than a conference*. I hope to continue to think through offering value for members outside of our annual conference, perhaps through a spring workshop series.

**SIGENERGY FY’22 Annual Report Aug 2021 - July 2022  
Submitted by: Prashant Shenoy, Chair**

**About.** 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 completed the second year of its existence since being chartered as a new SIG in November 2020. The SIG is serving a broad community of energy and sustainability researchers across the world, both from academia and industry. Its membership is growing steadily with more than 200 members as of 2022 and it sponsors two major conferences and a number of workshops.

**New Initiatives**

Over this past year, we have increased our emphasis on educational matters. The SIG appointed a new Director of Education (Prof. Zolton Nagy, Univ of Texas at Austin) and have begun deliberations on creating model courses and a curriculum in Energy system and sustainability. A student seminar series will get underway in the Fall.

SIGEnergy continued its focus on Climate and sustainability issues and organized a second edition of its WeCan workshop on Climate, Sustainability, and Society at ACM e-Energy 2022. The workshop has continued to generate strong interest from the community and provides connections to other communities such as SIGCAS and ClimateChange.AI.

SIGEnergy launched a YouTube channel to disseminate research talks. The channel is linked to the ACM YouTube channel and has recording from recent conference recordings.

**Diversity and Inclusion**

SIGEnergy appointed Prof. Astid Niesse (U. Oldenburg, Germany) as its Director of Diversity and Inclusion, with the goal of increasing its DEI activities in the coming year. The SIG is planning to hold workshops for women and underrepresented groups at its upcoming conferences and also hold virtual seminars for students, particularly from underrepresented regions. The SIG conferences are continuing their efforts to improve gender and geographic diversity at its events. The conference chairs focused on creating a diverse TPC, and striving to include ~ 25% women in its program committees. We will continue these efforts in the coming years.

**Awards**

SIGEnergy announced two new awards with deadlines for both in Fall 2022. These awards are SIGEnergy Rising Star award and SIGEnergy Doctoral Dissertation award. Both focus on junior members of our community and the first round of these awards will be announced in late Fall.

**Conferences**

SIG Energy sponsors two major conferences: ACM e-Energy and ACM BuildSys.

ACM Buildsys 2021 was held as a hybrid event, with a physical component in Comibra, Portugal, and jointly with the ACM Sensys conference. While this was our first conference to be held as a hybrid event, it was successful. The conference drew nearly 50 in-person attendees across the main conference and workshops, which was in a midst of yet another covid wave in Europe. To encourage a diverse online participation, online registration fees were kept very low for authors and free for others.

ACM eEnergy 2022 was held as a full virtual conference, and was organised by the steering committee, which stepped up to become the organising committee for 2022. 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 than the 2020 and 2021 virtual conferences.

ACM Buildsys 2022 will be held in Boston, MA, jointly with Sensys and will be a hybrid conference. Similarly, ACM e-Energy 2023 will be held in Orlando, FL, and will be part of ACM FCRC 2023.

**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 2022 conference recognized a paper on the topic of energy markets with the best paper awards. The paper was title “Distribution-level Markets Under High Renewable Energy Penetration,” and authored by Peizhong Ju (School of Electrical and Computer Engineering, Purdue University); Xiaojun Lin (Purdue University, USA); Jianwei Huang (The Chinese University of Hong Kong, Shenzhen)

The 2021 ACM BuildSys conference recognized a paper on the topic of physics-based fault diagnosis with a best paper award. The paper was titled  *“PIRMedic: A Physics-based Fault Diagnosis for Passive Infra-Red (PIR) Sensors,”* and authored by Ashish Kashinath(University of Illinois at Urbana-Champaign), Sibin Mohan(University of Illinois at Urbana-Champaign), Akshay Nambi(Microsoft Research), Sumukh Marathe(Microsoft Research)

**Finance**

On the financial front, both conferences were profitable in this past year despite being hybrid or virtual events. Both events made a small profit.

Despite being a new SIG, the SIG’s finances continue to be strong.  This has allowed us to continue to offer funding for student focused events and free registrations to virtual conferences and travel support for in-person events.

**Newsletter: Energy Informatics Review**

Our newly created newsletter, ACM Energy Informatics Review (EIR), has gotten off to a good start. The inaugural issue was published in November 2021 with nine papers. Two more issues were published in February and June 2021. The number of submissions is growing slowly and the magazine will start publishing “research highlight” style papers from Buildsys and e-Energy in the coming issues.

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.

All issues are published in the ACM Digital library and also on the SIGenergy website. See https://energy.acm.org/eir/

**Issues facing the SIG**  
   
As a two year old 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.

**SIGEVO FY’21 Annual Report**

**July 2021 - June 2022**

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

**EXECUTIVE BOARD**

This year, no changes in the executive board took place. 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. Our reserves are healthy. This year, SIGEVO gave out 20k for student travel grants. A Call for innovative projects have been issued during GECCO closing session.

This year hybrid GECCO had a record-high number of partcipants with more than 970 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. Unfortunately, the hotel in GECCO charged us a tremendous amount of money for providing AV support at the conference venue. After several rounds of negotiation, cost for AV went down to 85k, which is still much higher than in all previous editions. This was not a realistic price, but the hotel basically blackmailed us telling us that we either pay 95k for Internet access alone in the hotel or 105k (which came later down to 85k) for providing AV with complimentary Internet. I recommend to put the hotel (Renaissance Boston Waterfront Hotel) on the black list for future ACM events.

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

We are constantly working on increasing diversity, equity, and inclusion. For the officers, Emma Hart is treasurer. The woman-at-GECCO workshop (online this year) was a great success with many participants and interesting discussions.

The next year’s GECCO general chair is female. Furthermore, around a third of all track chairs are female.

As we run GECCO this year as a hybrid event, we were able to increase the inclusiveness of GECCO. We had more submissions from underrepresented countries. This would not been possible without offering an online participation to the conference.

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

# 2022 SIGEVO Impact Award

# McDermott, J., White, D.R., Luke, S., Manzoni, L., Castelli, M., Vanneschi, L., Jaśkowski, W., Krawiec, K., Harper, R., De Jong, K., O'Reilly, U.-M. Genetic programming needs better benchmarks.

# 2022 SIGEVO Dissertation Award

# Winner: '''Automated Software Transplantation" by Alexandru Marginean

# Honorable Mention: ''Discovering the Preference Hypervolume: an Interactive Model for Real World Computational Co-creativity" by Alexander Hagg

# Honorable Mention: Genetic Programming Hyper-heuristics for Dynamic Flexible Job Shop Scheduling by Fangfang Zhang

# 2021 SIGEVO chair lecture

# An Evolutionary Optimizer's Path to Success and Some Rocket Science Beyond It. Erik Goodman

GECCO awards:

Competitions:

* 10 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. Eight 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.

# The following papers were identified as most promising papers:

* Hierarchical Quality-Diversity for Online Damage Recovery Maxime Allard, Simón Smith, Konstantinos Chatzilygeroudis, Antoine Cully
* Local Ranking Explanation for Genetic Programming Evolved Routing Policies for Uncertain Capacitated Arc Routing Problems. Shaolin Wang, Yi Mei, Mengjie Zhang
* Absumption based on Overgenerality and Condition-Clustering based Specialization for XCS with Continuous-Valued Inputs. Hiroki Shiraishi, Yohei Hayamizu, Hiroyuki Sato, Keiki Takadama
* The (1+(𝛌,𝛌)) Global SEMO Algorithm. Benjamin Doerr, Omar El Hadri, Adrien Pinard
* Simple Genetic Operators are Universal Approximators of Probability Distributions (and other Advantages of Expressive Encodings). Elliot Meyerson, Xin Qiu, Risto Miikkulainen
* Theory-inspired Parameter Control Benchmarks for Dynamic Algorithm Configuration. André Biedenkapp, Nguyen Dang, Martin Krejca, Frank Hutter, Carola Doerr
* Evolvability Degeneration in Multi-Objective Genetic Programming for Symbolic Regression. Dazhuang Liu, Marco Virgolin, Tanja Alderliesten, Peter Bosman
* Learning the Characteristics of Engineering Optimization Problems with Applications in Automotive Crash. Fu Xing Long, Bas van Stein, Moritz Frenzel, Peter Krause, Markus Gitterle, Thomas Bäck

# **Describe conference activity**

# GECCO 2021 (July 2021)

* This was a hybrid event in Boston
* High number of submissions (470)
* Record number of participants: 973 (412 onsite and 561 online)
* Positive experience on running the event hybrid. Future GECCOs will also be hybrid.
* Whova well accepted by attendees. Those who entered Gathertown liked it.

GECCO 2023: to be planned in Lisboa. Planning on track.

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

This year, a lot of energy went into the transformation of GECCO towards a hybrid event. We organized a succesful summer school just before GECCO.

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

* Optimize the hybrid format of GECCO.
* 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.

**ACM SIGGRAPH Annual Report**

**July 2021 to June 2022 Fiscal Year 2022**

**Submitted by Elizabeth Baron, Chair**

**Table of Contents**

[Overview 1](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250026)

Mission and Vision 1

Hybrid Conference and Conference Papers Program 1

Strategic Pillars 2

[Strategy Committees 2](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250025)

[New Communities 3](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250024)

Nurturing our Existing Communities 4

[Conferences 5](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250023)

[SIGGRAPH 2021 5](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250022)

[SIGGRAPH Asia 2021 6](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250021)

[Awards 8](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250020)

[Standing Committees 10](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250019)

[Awards Committee 10](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250018)

[Chapters Committee 11](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250017)

[Communications Committee 18](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250016)

[Digital Arts Committee 19](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250015)

[Diversity, Equity, and Inclusion Committee 19](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250014)

[Education Committee 20](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250013)

[Early Career Development Committee (S3) 23](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250012)

[External Relations 23](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250011)

[Governance Committee 24](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250010)

[History Committee 26](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250009)

[Interactive and Immersive Experiences 29](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250008)

[Information Technology Services 31](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250007)

[International Resources Committee 32](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250006)

[Lifelong Learning Committee 33](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250005)

[Membership Committee 34](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250004)

[Nominations Committee 35](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250003)

[Publications Committee 37](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250002)

[Research Career Development Committee 37](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250001)

[Specialized Conferences Committee (SCC) 37](file:///\\acm-File01\Users$\faraz.iqbal\Downloads\Annual%20Report\ACM%20SIGGRAPH%20-%20Annual%20Report%202021_2022.docx#_TOC_250000)

## Advisory Boards 39

Computer Animation Festival Advisory Board (CAFAB). 39

Art Advisory Group (AAG) 39

Papers Advisory Group (PAG) 40

Pioneers Steering Committee 41

## Key Issues facing ACM SIGGRAPH 43

## Appendix 44

# Overview

The ACM SIGGRAPH community is a global nonprofit organization serving the evolution of computer graphics and interactive techniques. With thousands of members across the world, the researchers, artists, developers, filmmakers, scientists, and enterprise business professionals of ACM SIGGRAPH are building the future we experience every day.

ACM SIGGRAPH’s mission is to nurture, champion, and connect researchers and practitioners of Computer Graphics and Interactive Techniques. SIGGRAPH has had a longstanding vision, *Enabling Everyone to Tell Their Stories*. This is as true now as it was five years ago when it was developed.

SIGGRAPH is for Everyone. We serve our traditional audiences of professional movie, animation, and game makers. We serve engineers, designers, scientists, artists, and more. We serve everyone with a story to tell. That story can be of a product in development, a cinematic experience, or somewhere in between, and the mechanism by which the story is experienced, the interactive techniques, is key to delivering an impactful message. Computer Graphics and Interactive Techniques, that’s what we do and who we are.

We enable each person to learn from the best of the best, enhanced by the fantastic sources of knowledge available throughout the SIGGRAPH community.

We are the Premier Source for Computer Graphics and Interactive Techniques. We have broadened how content is delivered. Both the 2020 and 2021 SIGGRAPH Conferences were fully virtual. For the 2022 Conference, the content will be delivered in a hybrid approach, both in-person and through a virtual platform. In-person content will enable people to experience media on traditional screens or through extended reality, or potentially with new forms of interactive sensory experiences not yet invented. The virtual platform will allow flexibility and accessibility. Together, this is a powerful platform to provide content for all.

We have broadened the avenues for contribution to the SIGGRAPH Community. Starting at the SIGGRAPH 2022 Conference, a new Conference Track of the Technical Papers program was formed. This provides a high-quality publication venue that brings the workload of publishing a graphics and interactive techniques paper in line with other top-quality conferences, while diversifying the topics SIGGRAPH publishes in computer graphics and interactive techniques. The Technical Papers now has two tracks, Journal Papers (the existing program) and Conference Papers (the new program).

The most significant difference is that journal articles will continue to be published in ACM Transactions on Graphics (TOG) and in the ACM Digital Library, while the new Conference Papers will be published as conference papers in the form of “SIGGRAPH Conference Proceedings” solely in the ACM Digital Library. The new Conference Papers will be held to the same high standard for novelty and/or robust contribution, scientific rigor, and technical soundness as Journal Papers. Both Conference Papers and Journal Papers will be reviewed with the same rigorous technical process.

Through the multitude of choices content may be delivered in, SIGGRAPH content runs the gamut in from abstract to literal, from experiential to educational to scientific. Content may be purely digital or may be married to the physical world in a manner that enhances believability and presence. The content could be purely academic, as with Technical Papers. One thing remains, SIGGRAPH is the premier organization for disseminating new scholarly work, where scientists and researchers present and publish the latest industry advancements that inspire new ideas, ignite memorable discussions, and propel us forward.

SIGGRAPH’s Strategic Direction

The dedicated people who lead SIGGRAPH form the [Executive Committee](https://www.siggraph.org/about/governance/). The “EC” provides the operational structure and strategy for the coming years. It provides consistency and sets the high bar for content. The team works to allow our members to realize the benefits of research, education, and to put theory into practice for industry. They give their time and talent to enrich our SIGGRAPH community. The EC is grateful for the leadership of those who served on the Executive Committees over the past 49 years. This EC stands on the shoulders of giants!

SIGGRAPH’s strategy is focused on three pillars, which lay the foundation for future growth while sustaining our quality content. These pillars focus on membership, volunteerism and online events.

* Continuing on the success of the virtual and hybrid conferences, SIGGRAPH will build more content including events and educational subjects. Members can be engaged in SIGGRAPH all year round and leverage multiple sources from our community to achieve high-quality delivery. Once structured, SIGGRAPH will maintain a database of organization and community events, and enable our existing communication channels to effectively bolster more engagement from the membership and community at large.
* Regarding membership in ACM SIGGRAPH, the value proposition for membership is being strengthened with the goal to clarify existing benefits at every level of membership. An increase in year-round activities will further enhance the value to the community, with a specific focus on bolstering the value of long-term membership for students.
* Volunteers are at the heart of SIGGRAPH. As a strategic pillar, a newly formed Volunteer Development Committee will apply the broad enthusiasm, energy, and talent available among our volunteer community to support and enhance the goals and events of ACM SIGGRAPH. This includes volunteer onboarding and ongoing support, mentorship, and leadership development for SIGGRAPH volunteers in their roles within the organization. There will be a path to support volunteers throughout their service and career.

These three pillars provide ACM SIGGRAPH with a solid foundation, to grow and thrive in the future. SIGGRAPH will continue to be a place to realize creativity and passion, to discover the art of the impossible. The SIGGRAPH Organization has many Standing Committees, strategy groups, advisory boards and community groups which provide continued access to the latest CG&IT information throughout the year.

The SIGGRAPH Organization is where content lives year-round. The “Org” keeps the momentum going the other 51 weeks of the year. The Organization advocates for and supports knowledge sharing of advancements in computer graphics, digital art, animation, visual effects, machine learning, artificial intelligence, immersive and mixed realities, scientific visualization, and more.

Thank you all for being a part of our ACM SIGGRAPH community!

Elizabeth Baron

Chair

ACM SIGGRAPH

# Strategy Committees

## 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 2021: The Frontiers program was successfully transferred to and run by the conference committee in 2021 with Tomasz Bednarz acting as program chair. SIGGRAPH 2021 Workshops included: Limitations Driven Creativity Through Damascene Lenses, Measurable Creative AI, and Interaction @ SIGGRAPH. Talks included: Landing on Mars with Your Eyes Open, AR Dilemmas, and How Humans Judge Machines. Also introduced were SIGGRAPH Frontiers Interactions in a range of virtual formats and available to all before the conference, which included: Democratization of Visual Effects Panel, Designing Little Bots with Big Character, Introduction to Ray Tracing, Machine Learning and Neural Networks, The Art of Code Wrestling in the Damascene, and Human Values in Software.

These programs were quite successful as measured by attendee views.

Year Round: We also continued our successful “A Conversation With…” program. While we only ran one instance in early December 2021 ahead of the SIGGRAPH Asia conference, we had 11 well attended conversations. Also of note, the New Communities strategy team worked very closely with the SIGGRAPH 2022 Frontiers program chair, Vathsal Shashidhar (who is also a member of the New Communities team) to assemble a very exciting Frontiers program for SIGGRAPH 2022.

*Goals:* Over the next year we plan to continue our successful “A Conversation With…” program. Additionally we have a number of leads developed when working on the SIGGRAPH 2022 Frontiers program that will hopefully develop into workshops and other programs that are “year-round” and not associated with any particular conference. We will continue developing a new format for year-round programming that combines features of interviews and podcasts with other virtual modalities. We note that these are particularly exciting times as we emerge from the pandemic in a changed world where virtual modalities will play a larger part in our lives than before the pandemic, but a smaller portion than during the peak.

In late August of 2021 the SIGGRAPH Executive Committee approved a new Conference Papers program for SIGGRAPH and SIGGRAPH Asia. This program complements our strong journal papers program that has published technical papers in ACM Transactions on Graphics since 2002. The new conference papers program is not a “low-bar” papers program, but rather a venue for technically novel work that has undergone less exhaustive evaluation than is expected of a journal article. Conference papers are strictly limited to 7 pages plus references. Initial metrics indicate that the program has been very well received and is successful. SIGGRAPH 2021 received 444 submissions. SIGGRAPH 2022 received 610 submissions, a ~40% increase. Of these, 257 were journal only submissions (longer than 7 pages). The remaining 353 submissions were eligible for either program. 133 papers were accepted as journal articles and 61 were accepted as conference papers. SIGGRAPH Asia technical paper submissions have grown similarly with 368 submissions in 2022 compared to 270 in 2021. This new track is particularly exciting because SIGGRAPH technical papers submissions have been relatively flat over the last decade whereas neighboring areas such as computer visions, machine learning, and human-computer interaction have been seeing significant increases in submissions.

## Nurturing Communities

*Mission:* The nurturing community focuses on keeping the existing communities active in the SIGGRAPH organization and conferences in order to be a global community of passionate, leading edge CG&IT professionals. We develop retention programs to maintain current organization membership, rejuvenate historically connected communities, and sustain conference attendance. Our current programs consist of thesis fast forward, practitioner awards, and more.

*Goal:* The goal of this ad hoc committee is to assist in the entire production pipeline for generating digital content and events. Making the content cohesive,consistent, and visible/accessible.

# Conferences

## SIGGRAPH 2021

CHICAGO - SIGGRAPH 2021 conference, which launched online on 2 August, hosted its live week from 9 August to 13 August. After garnering an impressive virtual footprint, the 48th annual international conference and exhibition on computer graphics and interactive techniques remained open for registration through 18 October, with content accessible to participants until 29 October. SIGGRAPH 2021 provided new and innovative content in computer graphics to six out of seven continents. With over 775 sessions taking place both scheduled and on demand and logins from over 100 countries, the conference has been both welcomed and enjoyed by an international audience of over 490,000 attendees. SIGGRAPH 2021 hosted social hours over virtual platform OhYay to allow attendees to connect with their SIGGRAPH friends virtually and gain networking opportunities through conversations with contributors.

Highlights from the conference included many Featured Speaker sessions, including the “Turing Award and Beyond: In Conversation With Ed Catmull and Pat Hanrahan”, “How to Build an Animation Studio” feat. Sergio Pablos, and “Creating, Weaponizing, and Detecting Deepfakes” feat. Hany Farid. The most searched topics at SIGGRAPH 2021 were USD, metaverse, rendering, real-time, and pipeline.

SIGGRAPH 2021 also organized the annual Diversity Summit with an aim of spotlighting how DEI makes our communities, industries, and teams stronger and how we can make our world more inclusive and accessible. Powerful sessions like “Anti-racist Graphics Research”, “From STEAM to Dream: College to Career Connections with Latinx Technical Directors” were offered to attendees to keep knocking down barriers preventing equality in the STEM field.

SIGGRAPH 2021 conference award winners are:

## ACM Student Research Competition

First Place, Graduate – “Toward Computer-Aided Assessment of Textual Exercises in Very Large Courses” by *Jan Philip Bernius, TUM Informatik*

First Place, Undergraduate – “Text Classification for AI Education” by *Tejal Reddy, MIT*

## Art Gallery

Best in Show –“[Cangjie’s Poetry](https://cangjiepoetry.com/)” by

*Weidi Zhang, University of California, Santa Barbara Donghao Ren, University of California, Santa Barbara*

## Art Papers

Best in Show – “[Bad Mother / Good Mother: The Poetics and Politics of the Sounds of Invisible](https://s2021.siggraph.org/presentation/?id=artpl_103&sess=sess217) [Labor](https://s2021.siggraph.org/presentation/?id=artpl_103&sess=sess217)” by

[*Annina Rüst*](http://www.anninaruest.com/)*, Harriet L. Wilkes Honors College at Florida Atlantic University*

## Computer Animation Festival Electronic Theater

Best in Show - “Migrants” by *Hugo Caby, Pôle 3D school (France)*

*Antoine Dupriez, Aubin Kubiak, Lucas Lermytte, Zoé Devise*

Best Student Project – “I am Pebble” by *Maxime Le Chapelain of ESMA (France)*

Jury’s Choice – “Meerkat” by *Keith Miller of Weta Digital, (New Zealand)*

Audience Choice – “To: Gerard” by *Taylor Meacham, DreamWorks Animation (United States)*

## Immersive (Immersive Pavilion/VR Theater)

Grand Jury Award – “Garage: GPU Particle-based AR Content for Futuristic Experiences” by

[*Daiki Taniguchi*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=475343) *- Akatsuki*

Best in Show VR Theater - “Replacements” by *Agata Di Tommaso- Diversion Cinema, Jonathan Hagard - Kampung Ayu*

## Real-Time Live

Best in Show - “I am AI: AI-driven Digital Avatar Made Easy” *by Ming-yu Liu,* [*Koki Nagano*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=696243), [*Yeongho Seol*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=860263), [*Rafael Valle*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=147663), [*Jaewoo Seo*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=147243), [*Ting-Chun Wang*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=962943), [*Arun Mallya*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=157663), [*Sameh Khamis*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=357663), [*Wei*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=257663)[*Ping*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=257663), [*Rohan Badlani*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=937663), [*Kevin J. Shih*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=047663), [*Bryan Catanzaro*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=567663), [*Simon Yuen*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=837663), [*Jan Kautz*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=996843) *- NVIDIA* Audience Choice – “Project LiViCi: Real-time Immersive Circus Performance” by *Athomas Goldberg,* [*Samuel Tetreault*](https://s2021.siggraph.org/?post_type=page&p=1652&uid=917563)

## SIGGRAPH Asia 2021

SIGGRAPH Asia 2021, themed ‘LIVE!’, marked the very first hybrid edition in ACM SIGGRAPH’s history. The event overcame all obstacles and challenges amidst Covid-19, and successfully concluded its live program at the Tokyo International Forum in Japan. Held from 14 – 17 December 2021, the event reunited over 3,000 attendees from 41 countries and regions. The onsite event was held in compliance to the Covid-19 regulations from the government, local authorities, and the exhibition industry, ensuring the safety and well-being of all in-person attendees.

“Despite a lack of clarity as to what lies ahead due to COVID-19, we decided in summer of this year to conduct the very first hybrid SIGGRAPH Asia,” said **Shuzo John Shiota**, **Conference Chair of SIGGRAPH Asia 2021 & CEO, Polygon Pictures Inc**. “It turned out to be a massive undertaking, and COVID continued to obstruct our progress. Against adverse conditions, we were able to create an illustrious conference, providing great insights into the current world of computer graphics and interactive techniques, as well as rekindling the SIGGRAPH and SIGGRAPH Asia communal spirit, both online and onsite. I’d like to extend my heartfelt gratitude to all who have contributed to this enormous undertaking”.

“I am extremely proud of what the SIGGRAPH Asia 2021 team has achieved this year, pulling off an incredible show onsite and online. The feedback from the global Computer Graphics community has been very positive, reaffirming our stand to continue holding the hybrid event despite the many curve balls being thrown at us due to Covid-19. It’s amazing how this industry is so closely knit and supportive of one another. We look forward to creating an even larger reunion for the CG industry next year in Daegu, South Korea!” added **Prakash Ramajillu, SIGGRAPH Asia Chief Staff Executive & Division Director (Technology, Digital Media, Entertainment & Mobility), Koelnmesse Pte Ltd**.

**A Diverse Range of Conference Program Sessions**

Close to 130 speakers presented at the conference in-person and around 400 presenters joined the virtual platform to discuss the latest industry developments and future of the computer graphics and interactive techniques industry. The exciting line-up featured distinguished **keynote speakers** such as **Toru Katsumoto**, Executive Deputy President and CTO at Sony Group Corporation, and **Matt Omernick**, Co-Founder and Chief Creative Officer at Akili Interactive. Toru Katsumoto’s session on ‘[Creativity x](https://sa2021.conference-program.com/presentation/?id=gp_103&sess=sess182) [Technology - How to fill the world with emotion](https://sa2021.conference-program.com/presentation/?id=gp_103&sess=sess182)’ brought us through the history of innovation in the creative industry and discussed possibilities enabled by technology made available to creators in the fields of music, movies and games. Matt Omernick’s session on ‘[Video Games as Medicine](https://sa2021.conference-program.com/presentation/?id=gp_104&sess=sess183)’ dived into how Digital Therapeutic products like EndearvorRx are changing the face of medicine, and how cognitive health and entertainment will live harmoniously together in the future.

Other **highlights from the conference** included the [**Featured Sessions**](https://sa2021.siggraph.org/en/attend/featured-sessions)program which invited industry figureheads such as Bandai Namco Studios, Weta Digital, DNEG, DNEG Animation, Kamizake Douga, MacLean Visual Effects, Sola Digital Arts, Sony Pictures Animation, Sony Pictures Imageworks, SQUARE ENIX, Toei Animation, Ubisoft Divertissements, giving the community exclusive insights on the remarkable VFX works behind films like Dune, Shang Chi and the Legend of the Ten Rings, Blade Runner, Apple TV's Foundation series, The Mitchells vs. The Machines, Wish Dragon, Ron's Gone Wrong, which are available on-demand on the virtual platform.

The [**Technical Papers**](https://sa2021.siggraph.org/en/attend/technical-papers/8/sessions)program continues to be the anchor program of SIGGRAPH Asia and showcased

94 specially curated papers. The Technical Papers at SIGGRAPH Asia 2021 adhere to the highest scientific standards and are chosen through a rigorous and highly refined peer-review process. This year, SIGGRAPH Asia had most of the presenters beamed onsite at the Tokyo International Forum, to take on live questions from the local and online attendees.

The [**Trade Exhibition**](https://sa2021.siggraph.org/en/attend/visit-exhibition)featured close to 30 virtual and onsite exhibitors showcasing the latest developments in hardware and software applications in the Computer Graphics and Interactive Techniques space. Companies and brands include FORUM8, IMAGICA GROUP, Digital Hollywood University, KONICA MINOLTA, Amazon Web Services, BANDAI NAMCO, Carpe Diem Solutions, CyberAgent, ELSA Japan, Houdini SideFX, Huawei Russian Research Institute, NVIDIA, NHK Art, iPresence and SkyVision. iPresence created a [virtual SIGGRAPH Asia 2021 exhibition tour](https://my.matterport.com/show/?m=3Vt7qPwTg85), which allows remote attendees to travel into the exhibition hall from anywhere around the world.

SIGGRAPH Asia 2021 presented the following artists and creators with various awards in recognition of their top-notched works:

## Computer Animation Festival Award Winners:

**Best in Show:** Twenty Something (USA), *Director: Aphton Corbin*

**Best Student Project:** Le Retour des Vagues (France), *Directors: Manon Cansell, Alejandra Guevara Cervera, Edward Kurchevsky, Francisco Moutinho de Magalhães, Hortense Marian*

**Best Student Project:** Les larmes de la Seine (France), *Directors: Yanis Belaid, Eliott Benard, Nicolas Mayeur, Etienne Moulin, Hadrien Pinot, Lisa Vicente, Philippine Singer, Alice Letailleur*

**Jury Special:** Only a Child (United Kingdom, Switzerland), *Director: Simone Giampaolo*

## Emerging Technologies Award Winners:

**Best Demonstration Award (Best in Show):** Parallel Ping-Pong: Demonstrating Parallel Interaction through Multiple Bodies by a Single User

**Best Industrial Demonstration Award:** Multimodal Feedback Pen Shaped Interface and MR Application with Spatial Reality Display

**Best Student Demonstration Award:** Midair Haptic-Optic Display with Multi-Tactile Texture based on Presenting Vibration and Pressure Sensation by Ultrasound

**Best Online Demonstration Award:** GroundFlow: Multiple Flows Feedback for Enhancing Immersive Experience on the Floor in the Wet Scenes

## Real-Time Live! Award Winners:

**Best in Show:** CodeMiko: An Interactive Vtuber Experience, Presenter: CodeMiko, codemiko project, LLC, USA

**People’s Choice:** Fencing Tracking and Visualization System, *Presenters: Yuya Hanai, Daito Manabe, Kyle McDonald, Satoshi Horii, Futa Kera, Kisaku Tanaka, Motoi Ishibashi*

# 

# Awards

SIGGRAPH presented **8** awards at SIGGRAPH 2021, and inducted **3** people into the SIGGRAPH Academy:

## The Steven Anson Coons Award for Outstanding Creative Contributions to Computer Graphics:

Markus Gross

*ETH Zürich, Disney Research*

## 2021 Computer Graphics Achievement Award:

Doug L. James

*Stanford University*

## 2021 Significant New Researcher Award:

Jonathan Ragan-Kelley

*MIT, University of California, Berkeley*

## 2021 Outstanding Doctoral Dissertation Award:

Minchen Li

*University of Pennsylvania*

Honorable Mentions for the 2021 Outstanding Doctoral Dissertation Award: David B. Lindell, *Stanford University*

## 2021 Outstanding Service Award:

Marc J. Barr

## 2021 Lifetime Achievement Award in Digital Art:

William Seaman

*Duke University*

## 2021 ACM SIGGRAPH Practitioner Award:

Brent Burley

*Walt Disney Animation Studios*

## 2021 ACM SIGGRAPH Distinguished Educator Award:

Barbara Mones

*University of Washington*

## 2021 SIGGRAPH Academy inductees:

Norman Badler, *University of Pennsylvania*

Mathieu Desbrun, *California Institute of Technology, Shangai Tech University*

Karen Liu, *Stanford University*

# 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.
* This involved some challenges because of ACM's idiosyncrasies in treating due-dates, so that some award nominations happened within a committee's deadline, but ACM classified them as late. We are working to resolve this for next year, and to make all nominations deadlines the same, independent of the award.
* Additionally, the committee has made the video necessary for the virtual awards presentation, made arrangements for in-person presentation of two awards, done the set-up work for an in-person awards-talks session, and the preparatory work for the Awards Luncheon at SNA.
* Plaques and teapots for the award winners are ready, and we will soon be sending checks (or direct deposit) to those awardees whose award includes an honorarium.
* The Dissertation Award Chair (Mathieu Desbrun) dealt with nomination-timing challenges with great equanimity; our new Art Award Chair (Copper Giloth) has handled the challenges of working with an award winner who is 98, and bilingual in Hungarian and French, but not English.
* We have a new SIGGRAPH Academy Selection Chair, Hugues Hoppe, who managed the task very smoothly.
* The Technical Awards Chair, Tom Funkhouser, has given warning that he is eager to finish up his service, and we will advertise for a replacement.
* The Awards Chair dealt once again with the challenges of the pandemic, and also with deciding whether to continue in the role, as the task grows ever more difficult, and interactions with the Conference Chair and the Executive Committee Chair were fraught, and support from the organization dwindled.

*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

## ACTIVE CHAPTERS:

Bangkok ACM SIGGRAPH Chapter (Professional) - Active Bengaluru ACM SIGGRAPH Chapter (Professional) - Active

Bilkent University ACM SIGGRAPH Student Chapter (Student) - Probationary Bogota ACM SIGGRAPH Chapter (Professional) - Active

Bowling Green State University ACM SIGGRAPH Student Chapter (Student) - Active Caracas ACM SIGGRAPH Chapter (Professional) - Active

Chengdu ACM SIGGRAPH Chapter (Professional) - Probationary CSUF ACM SIGGRAPH Student Chapter (Student) - Active Detroit ACM SIGGRAPH Chapter (Professional) - Probationary

Drexel University ACM Student SIGGRAPH Chapter (Student) - Active Embry-Riddle ACM SIGGRAPH Student Chapter (Student) - Active Fort Lauderdale ACM SIGGRAPH Chapter (Professional) - Active Guadalajara ACM SIGGRAPH Chapter (Professional) - Probationary Helsinki ACM SIGGRAPH Chapter (Professional) - Active

Hong Kong ACM SIGGRAPH Chapter (Professional) - Active London ACM SIGGRAPH Chapter (Professional) - Active

Los Angeles ACM SIGGRAPH Chapter (Professional) - Active Madrid ACM SIGGRAPH Chapter (Professional) - Active Montreal ACM SIGGRAPH Chapter (Professional) - Active MTSU ACM SIGGRAPH Student Chapter (Student) - Active New York City ACM SIGGRAPH (Professional) - Active

NJIT ACM SIGGRAPH Student Chapter (Student) - Active Paris ACM SIGGRAPH Chapter (Professional) - Probationary PCAD ACM SIGGRAPH Chapter (Student) - Active

Portland ACM SIGGRAPH Chapter (Professional) - Active RIT ACM SIGGRAPH Student Chapter (Student) - Active Rochester ACM SIGGRAPH Chapter (Professional) - Active

San Francisco ACM SIGGRAPH Chapter (Professional) - Active San Jose State ACM SIGGRAPH Student Chapter (Student) - Active Shanghai ACM SIGGRAPH Chapter (Professional) - Active Shenzhen ACM SIGGRAPH Chapter (Professional) - Active

Silicon Valley ACM SIGGRAPH Chapter (Professional) - Active Singapore ACM SIGGRAPH Chapter (Professional) - Active Taipei ACM SIGGRAPH Chapter (Professional) – Active

Texas A&M University ACM SIGGRAPH Student Chapter (Student) - Active Tokyo ACM SIGGRAPH Chapter (Professional) - Active

Toronto ACM SIGGRAPH Chapter (Professional) - Active

University of Illinois at Urbana-Champaign ACM SIGGRAPH Student Chapter (Student) - Active University of Pennsylvania SIGGRAPH (Student) - Active

Vancouver ACM SIGGRAPH Chapter (Professional) - Active Viborg ACM SIGGRAPH Chapter (Professional) - Probationary Washington DC ACM SIGGRAPH Chapter (Professional) - Active

## SIGGRAPH 2021:

Workshop:

We held a virtual Chapters Workshop again in 2021, modeled off the 2020 workshop. There was slightly less participation, but our core crowd showed up and considered the workshop to be valuable. We continue to get good feedback from chapters about the kinds of help they need. Some issues that have always existed, like the challenge of finding committed volunteers, have been exacerbated by the virtual paradigm. There is more fatigue and reliance on stored up resources.

Chapters Party:

There were a number of virtual chapter parties again this year, although fewer. We incentivized chapters posted 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. We had more trouble finding participants in the Fast Forward this year (this was also a requirement for earning a free pass) - free virtual-only registrations appear to not be as enticto host these parties with complimentary registrations to the virtual conference, although many chapters who claimed that benefit last year did not this year. There were some complaints of lower attendance, but generally the chapters like being able to participate in the conference in this way to give their members a way to experience it when many of them would never consider traveling.

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. We had more trouble finding

participants in the Fast Forward this year (this was also a requirement for earning a free pass) - free virtual-only registrations appear to not be as enticing to potential contributors as they were last year.

Online Communities Recruitment BOF:

We shared a session about our ongoing Online Communities work, with the goal of acquiring more interest, volunteers, and technical input. We had a small number of very interested attendees, but ultimately determined that this was not the help we would need to launch Online Communities, and shelved the initiative until we could talk with people in-person.

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 2021**

Chapters Information BOF:

There appeared to be limited interest from Australasian chapters in gathering for the virtual side of the 2021 SIGGRAPH Asia conference, so we combined the workshop and the chapters information BOF into a single event that happened during the conference. There was extremely low attendance, but our hope was that the recording was viewed by those who were interested. Generally, this was seen as a low-value activity though, as even active chapters chose not to attend.

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.

Regional Chapter Hangouts:

We are attempting to hold chapter leader hangouts 3-4 times per year to allow chapter leaders to share their successes, brainstorm around shared problems, and get updates about the organization and conference plans. We will try to invite a VIP org volunteer to each of these to help build bridges as well.

On-site Chapters Chicago Strategy Meeting:

Easily the most rewarding and valuable activity we participated in the whole fiscal year was the on-site Chicago strategy meeting which we put together on a shoestring budget. (Which we very much appreciated having access to at all!) Many of the projects our committee was working on had started to fall into a confusing mess of “who’s doing what”, and we had begun to lose meaningful connections with our chapter leaders, especially as many of their terms turned over. This strategy meeting allowed us to brain-dump, to clear up confusion, to come up with new ideas, and to make major progress on a new project: running the virtual and in-person Village venues for the hybrid 2022 conference.

The Village:

After the membership chair position was vacated, Chapters was offered the opportunity to run the Village for the 2022 conference. We took the opportunity to make some changes that this venue that typically runs on autopilot was needing, including making it look busy and active, and promoting what our organization is and why folks should join it. It has been a logistical hurricane, working with all the org committees, the conference contractors, and the Linklings database system, but looks like it is coming together nicely for 2022. Check next year’s report to hear how it went.

*Goals:* Virtual Workshop 2022:

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.

In-Person Workshop 2022:

In the hybrid environment, we expect to get far fewer chapter leaders traveling to Vancouver than in the past, so we are making this a less formal midday meeting over lunch at a restaurant. An important goal is to reestablish our relationships with chapter leaders, so this will be a good opportunity to do that.

Virtual Chapters Party:

chapter members to events hosted by chapters (due to EC policy about only conference registrants being allowed to advertise events in the conference program.) Note that there will not be an in-person party We plan to hold a virtual chapters party along the description of the 2021 party events again. This may be a harder sell in the hybrid conference where our audiences are cut in half, and without the ability to invite because it is impossible to book a venue right now - apparently they’ve all been claimed by weddings.

The in-person party should return in 2023.

Chapters Information BOF:

We plan for this to happen more or less in the same way as last year as well.

Chapters Information In-person Village Session:

Every year we try to have an information session for those who might be interested in joining or starting a chapter, as a way to learn the logistics, meet current leaders, and question our chapters committee. We plan to run something in the in-person Village for travelers to Vancouver.

Chapters/SV luncheon:

There will allegedly be ~150 student volunteers traveling to Vancouver, so we will bring the Student Volunteer Luncheon back from it’s virtual hiatus.

The Village (In-Person and Virtual):

Following through on our Village planning work in FY2021, we will be hosting and managing the Village both in-person and virtually at the 2022 conference. This includes The Village Exhibition in the convention center hallway, The Village Square in Room 108 which will host events and otherwise run like an open house, village.siggraph.org, and a gather.town space for virtual gatherings.

## SIGGRAPH Asia 2022:

Workshop:

We still need to evaluate whether this event should be in-person, virtual, or both. Holding both a virtual and in-person event has been deemed necessary for the North American conference, but the outcome of North America, and the input of chapter leaders who plan to travel will be taken into account.

Student Volunteer Luncheon:

We plan to bring this event back in 2022 as travel to Korea has been made possible again. I believe it is in our FY2022 budget.

Other Initiatives:

1. Our highest priority is to re-establish relationships that have slacked during the pandemic, which includes a lot of face time and interaction with chapter leaders. We will be making an effort to explicitly say no to any external requests for new projects this year, in favor of returning to our basic functions.
2. Continue to evaluate the Online Communities initiative in collaboration with other stakeholders including community leaders and IT Services, 21st Century Digital Technologies, and Communications
3. Continue to smooth out the process of borrowing the Chapters’ shareable Zoom account, which has been very popular but occasionally difficult to coordinate.
4. Continue to pursue corporate relationships that benefit chapters and the organization.
5. Build our recognition of hard-working chapter leaders, continuing the initiative coordinated between the EC and ACM to provide complimentary one-year organization memberships for student chapter officers
6. Document our procedures as a committee, and encourage chapters to document their procedures in running chapter business
7. Improve a sense of community among chapters inside each region and across continents
8. Continue to improve the PSCC’s productivity through a suite of virtual project management tools (Trello, Slack, Google Calendar, Zoom)
9. Helping publicize Chapter events
10. Continue streamlining the requirements and application process for chapter events grants

## COMMITTEE MEMBERS

This is the makeup of the Chapters Committee at the end of FY2021.

\*Asterisks represent volunteers new to the Chapters Committee.

AJ Christensen, Chair

Amira Malcom, Liaison to North American Chapters

Brenda Ximena Roldan Romero, Liaison to South American, European, and African Chapters Eric Liu, Liaison to Asian, Australian, and Middle Eastern Chapters

Kevin Mcnulty, Liaison to Student Chapters

Brad Lawrence, Liaison to Chapter Treasurers and Media Support Jenny Dana, Chapter IT Services

Kerry Kirkpatrick, Visual Designer Eddie Lawrence, Events Coordinator

Benoit Terminet Schuppon, Communications and Sponsorship

**[seeking new volunteer]**, Special Projects

Natasha Warshawsky, Project Manager Jacky Bibliowicz, Strategy and Curriculum

## 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:*

* Established and executed a contract with Durrell Communications to design and produce an updated SIGGRAPH website. Input from the SIGGRAPH Executive Committee and all standing committees was incorporated into the site refresh.
* The updated site was launched in July, 2022 and is up-to-date, attractive and responsive
* The site reflects SIGGRAPH’s focus on human interaction by providing a user friendly, functionally-intuitive experience
* It includes 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
* The site also has 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)
* Lastly, the new site has the potential to include a members-only section to provide additional member benefits
* Added Preston Smith, manager of the SIGGRAPH YouTube channel, to the Communications Committee

*Goals:*

* Develop new communication channels that will reach new audiences with 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.
* Hire a second (part-time, contract) webmaster to provide back-up to Alex Rollinson
* Recruit social media managers from the SIGGRAPH volunteer pool

## 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.

*Goals:* We will continue to host the SPARKS sessions monthly (<http://dac.siggraph.org/sparks>), and to grow and diversify our community.

* As we head into summer, we will continue to host the monthly SPARKS sessions before our participation in the annual conference. At the conference we anticipate hosting several sessions, participating in the Village, and participating in the online Gather.Town activities. At both SIGGRAPH 2022 and SIGGRAPH Asia 2022, 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. In the past year we launched a new Exhibition, The Earth Our Home, and are in the process of developing a new one on Decolonial Media Art. (https://dac.siggraph.org/#exhibitions)
* We look forward to SIGGRAPH 2023 and to working in partnership with the Arts venues and the History Committee to develop anniversary celebration.
* In 2022 we are upgrading our online presence with a new version of Ning and more social media integration.
* 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:* 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.

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.

## Education Committee

Chair: Glenn Goldman

*Mission:* The ACM SIGGRAPH Education Committee works to support educators in computer graphics and interactive techniques. This encompasses both technical, creative, applied and interdisciplinary studies at all post-secondary levels 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:* Education pervades much of what is found at SIGGRAPH – both the conferences and the organization. There is a lot of overlap with the members of the Education Committee and other committees and activities. Specifically, there are active bilateral relationships with Chapters, International Resources, DEI, Awards, and ACM Education Council as well as ad hoc/individual relationships between committee members and the activities of other committees. These relationships bring the perspective of educators and education to the efforts of other committees and at the same time, assures that needs of the education community are represented to other groups. It is not, for example, unusual to see current or immediate past members of the Education Committee as Conference Chair or General Submissions Chair (or chairs of other program sessions at SIGGRAPH Asia or SIGGRAPH North America). Furthermore, several SIGGRAPH Education Committee members perform active service as representatives to other standing committees at SIGGRAPH and/or ACM. Similarly, members of other committees actively participate with members of the Education Committee in furthering our goals. The governance/structure of the Education Committee was set at the end of summer 2021.

The Education Committee meets monthly on Zoom and has maintained and expanded upon its traditional activities. Faculty Submitted Student Work (FSSW), SpaceTime student competition, social media outreach, and participation in the SIGGRAPH North America annual conference (which included a combination of talks, courses, and BOFs) have been augmented with a new Symposium on Innovation, Research & Experiences in Education (SOIREE) that successfully took place in May, 2022. The website is updated regularly and serves as a means of communication and is a resource within the educational community.

This event provides a platform for faculty members to share student assignments and student work in response to the assignments. In 2021, 18 different schools submitted materials. Those schools represented 76 assignments from 48 different faculty and included 350 students’ samples. From those, a working group of Education Committee members, led by Rick Lewis, validated the materials as appropriate and complete for providing as searchable instructional resources on the Education Committee website.

Additionally, the Education Committee members created a video to exhibit a variety of student sample work. After issues with the US Family Educational Rights and Privacy Act (FERPA) were raised, the call for participation in 2022 was delayed as committee members took the time necessary to resolve our responsibilities and generate an appropriate form and process that satisfied regulations and allowed us to post student work.

The rate of participation in FSSW has dropped since SIGGRAPH North America went virtual in 2019 and the incentive of having work exhibited at the physical conference disappeared. Student Volunteers and others used to come to the Education Booth in SIGGRAPH Village to see the work that was exhibited.

The intent is to combine both the searchable online resource with a display in Vancouver in 2022.

Social Media is handled by Anie Miles (with a brief interruption due to maternity leave in mid-winter). Among the accomplishments are: (1) an increase in followership across all social platforms, (2) creation of unique graphics and video content for all posts that were not re-posts of other SIGGRAPH accounts (i.e.: promoting registration opening, SV applications), (3) promotion of SIGGRAPH Asia, Submissions, Student Volunteer Applications, SOIREE, SpaceTime, and Faculty Submitted Student Work (FSSW), and

(4) achieved new highs with 2,101 views seen by 759 unique users. Additionally, Anie Miles joined the Communications: Blog subcommittee quarterly meetings representing the Education Committee where she was able to coordinate the writing and posting of SIGGRAPH Blog articles which increased traffic to the SIGGRAPH Education Committee website and social pages. COVID-19 continues to cause changes in schedules and volunteer opportunities that affect our ability to make outreach as predictable as it has been in the past. Lack of Education Committee participation in SIGGRAPH Asia resulted in considerably less content for social media posting and engagement. The Education Committee plans to participate in a yet to be determined capacity in SIGGRAPH Asia 2023 in Sydney.

Summary data include Facebook followers increasing from 186 to 232. Post topic with the highest Reach & Engagement was the SOIREE Promotion 5/5/2022 with a reach of 2,101 and engagement with

click-through 76 times. Twitter followers increased from 85 to 102. August 2021 had the greatest number of impressions at 3,221 which is a slight decrease from 2020 (3,843). Instagram followers increased from 171 to 178. The post topic with the most “Likes” was the SIGGRAPH programming promotion for *Photogrammetry for a VR Nature Scene* (likely because we tagged the presenters who promoted our post).

*Challenges:* Major challenges faced by the committee include *time* and *place*. There are more things we would like to accomplish than we are able. Some projects (e.g., producing a regular set of “In Good Company” interviews to post on YouTube) have been tabled or curtailed. Dealing with United States Family Educational Rights and Privacy Act (FERPA), though necessary, took a considerable effort and, while the processes and forms have been resolved, it caused a delay in the call for two of our major endeavors (FSSW and SpaceTime) and adds yet another layer of approvals for submission of work. The future of the Education Committee website has been unresolved. At one point, all committee websites were supposed to be absorbed by the organization and that now seems not to be the case. The website was originally flat HTML, which was then migrated to Plone CMS, followed by a second migration to Drupal and we are now looking to move to Wordpress. The *use and function of the Education Committee website* needs to be evaluated given the limited amount of time all volunteers have. The issue of *place* remains a challenge. The Education Booth in SIGGRAPH Village has traditionally been a focal point for activity, networking, and presentations. It created and enhanced a social connection among educators that has not been successfully or fully replaced by the online alternatives. The transition to all-virtual conferences disrupted those opportunities and at the time of this report, the exact nature of the SIGGRAPH Village in 2022 is still a work in progress. It is a major challenge, and an important one, to recapture the engagement the Education Committee previously had with its community at SIGGRAPH North America. One of the biggest challenges that remains is *communication and outreach*: the ability to reach our audience and communicate activities which could serve our constituency and increase participation in SIGGRAPH. Perhaps if there was an opt-in checkbox for the CG Educators Listserv when registering for a SIGGRAPH conference, we would be able to be more effective in our outreach. Screening the animation festival at schools helps generate student interest but additional audiences may be reached if we also make “Papers Fast Forward'' available for screening at schools.

*Goals:* To encourage and facilitate efforts that connect education communities, better the educational process, and trigger innovation and creativity. Specifically, in the short term, to continue to grow our followers across the four social accounts and the new YouTube channel, to engage in more meaningful ways with an emphasis on trying polls and job postings, to improve post-conference / non-event promotion posting (Aug-Dec), to improve sub-committee communication to better distribute their events and calls, and to showcase video content and engagement opportunities throughout the year to improve membership and grow the SIGGRAPH educator community.

* To support projects and activities that further educational development in the field and evaluate these projects to ensure they meet the needs of the educator and learner.
* To provide global online resources for educators that help to define a knowledge base for the discipline, to identify curriculum and core competencies, and to provide innovative learning tools and pedagogy.
* To offer a resource structure to enable future educators to continue in the development of the field.

## Early Career Development Committee (S3)

Chair: Marisa (Ginger) Tontaveetong

*Mission:* The mission of S3 as an Early Career Development Committee is to plan, develop, and extend the high-quality services offered by ACM SIGGRAPH into year-round programs accessible to student members and emerging professionals of the community with a focus on Computer Graphics and Interactive Techniques.

*Accomplishments:* The Conference Apprenticeship Program - Serves in year round subcommittee role pre-planning and onsite for conference. Requests will vary based on conference committee and board of director needs.

S3 offers a monthly podcast where we explore and discuss best practices, professional advice, tips of the trade, and insight into multiple CG fields. In every session we invite our industry professional volunteers to answer all your questions on everything, from demo reels to resumes. Have a direct question about your work? Let us help you answer it by having your work featured in our discussions."

*Goals:* The goal of the Early Career Development Committee is to plan, develop, and extend the high-quality services offered by ACM SIGGRAPH into year-round programs accessible to student members and emerging professionals of the community.

## External Relations

Chair: Joaquim Jorge

*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:*

* DCAJ - ACM SIGGRAPH annual meeting (October 2021)
* VIS SIGGRAPH Presentations at IEEE VIS (October 2021)
* DCEXPO (December 2021), Tomasz Bednarz, Shuzo Shiota, Daniel
* Pillis, MK Haley and Miho Aoki participate in invited sessions about SA21, S22 and ACM SIGGRAPH DEI initiatives.
* DCEXPO (December 2021) Award ceremony for selected works from S21
* Etech program and DCEXPO 2021, presented by Yoichiro Kawaguchi
* VFX Rio (March 2022) Munkhtsetseg Nandigjav, Diana Arellano,
* Joaquim Jorge and Miho Aoki participate in a SIGGRAPH focused talk session
  + DCEXPO and Laval Virtual works will be included in S22 Emerging
* Technology
  + Initial discussions with Ars Electronica re:content
* exchange/Affiliation
* Panel Discussion (Real-Time At SIGGRAPH 2021: An Early Look) at
* Realtime Conference 2021 (RTC)
* Diana Arellano attended Eurographics Executive Meeting at
* Eurographics 2022 Reims, France (May 2022)

*Goals:*

* To sign cooperation agreement with SAE, Ars Electronica and AG
* (Asia Graphics)
* To work together with the CAFAB (Computer Animation Festival Advisory Group) in joint agreements.
* To work together with Chapters and IRC to coordinate partner participations to annual conferences, including Village and online sessions
* 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.

Problems to be solved

* RTC was invited and agreed to run a session at SIGGRAPH 2021, a workshop at Frontiers Program focused on Realtime & Architecture. They prepared a video, however ACM SIGGRAPH copyrights policy on using third-parties material was very strict and the team gave up on negotiations. We need to find a solution.
* RTC complains that banner exchange is not work on ACM/SIGGRAPH Site
* Current MOU agreements include conference booth exchange. New and
* renewing agreements need to be discussed and approved by CAG and SACAG and encourage content exchange

## 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.

Governance Committee members

* Scott Owen, Chair
* Elizabeth Baron, ACM SIGGRAPH Chair
* Jesse Barker, ACM SIGGRAPH Chair-elect
* Adam Bargteil, ACM SIGGRAPH Past Chair
* Mikki Rose, ACM SIGGRAPH CAG Chair
* David Spoelstra, ACM SIGGRAPH Treasurer
* Victoria Szabo, Chair of the Digital Arts Committee and Arts Advisory Group

*Accomplishments:* In the past year the Governance Committee has recommended, and the Executive Committee has approved, the following changes that are reflected in the ACM SIGGRAPH Policy Guidelines (more detail on these items can be found on the Governance Committee Change Log):

* Clarification of Section 4.5 Unbudgeted Expenses
* Change in Section 10.1 SNA Complimentary registrations
* Creation of a new Category of Sub-Groups (in addition to Standing Committees and Advisory Boards) called Community Groups. Pioneers was moved from the Advisory Board category to the Community Group category.
* Incorporation of the previously independent WiGRAPH (Women in Computer Graphics Research) into a Community Group.
* Modification of Section 4.6 Financial Policies.
* Modification of Section 10.4
* A new policy on handling donations, especially multi year donations.
* A revised policy on developing the annual ACM SIGGRAPH budget.
* A revised policy for handling ACM SIGGRAPH Award winners support in times of financial hardship.
* Policy for approval of the SNA and SA Conference Papers Chair.
* Revision of 11.17 Travel Expenses and Honorariums for Speakers
* Revised Update Section 6.8. Strategy Committees
* Revised Section 6.2 Advisory Boards process for approval of Advisory Board Chairs
* Revised Section 7.2: The duties of the Chair of the Conference Advisory Group.
* Revised the ACM SIGGRAPH Executive Committee Officer Selection Process.
* Revised Section 5.1 the duties of the Nominations Committee past-chair.
* Revised Section 7.9 on making major changes to SNA or SA.
* Revised policy on the EC Representatives to the CAG.
* Revised the term for the Nominations Chair
* Revised the process of approving job descriptions.
* Developed a statement to go into Section on Overarching Principles to handle possible DEI related problems in submissions.

Policies affecting the ACM SIGGRAPH Bylaws:

* Change of Bylaws to allow for a different definition of supermajority. This was sent to the membership as part of the 2022 election for approval.

Other actions that were approved by the EC but were not reflected in the Policy Guidelines or Bylaws:

* Response to the ACM SIG CARES letter.
* Removing the ACM SIGGRAPH CARES Committee as a sub-Committee of the DEI Committee.
* Developed the Governance Committee Policies and Procedures document.

*Goals:* We are continually examining and changing our policies and new issues arise continually so it is difficult to precisely define the goals for the coming year. Here are some issues we will be discussing:

* The role and structure of the SIGGRAPH CARES effort.
* Improving communication between different parts of ACM SIGGRAPH, especially the relationship between the Organization (EC, Standing Committees, Advisory Boards, and Community Groups) and the SIGGRAPH Conference.
* Developing a general policy on ethics.
* Put the Governance Committee Change Log on the ACM SIGGRAPH Website.

## 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 documentation of the collected materials broadly accessible by ACM SIGGRAPH members and 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

o Bonnie Mitchell has tentatively agreed to become Chair of the History Committee when Whitton retires.

## Major Focus: SIGGRAPH 50

* Core team (Whitton, Kasik, Newton, with later additions Bonnie Mitchell and Jan Searleman) met every 2-3 weeks during FY2022
* Met with S23 chair to frame working relationship, offer help, talk about the job of History Chair for S2023.
* Bonnie Mitchell was selected as S2023 Conference History Chair.
* Discussions are ongoing with external funding sources
* CG&A Special Issue for July/August 2023

o Kasik and Whitton had their proposal accepted for a special topic issue of CG&A for the July/August 2023 issue. Focus: The Big 50: Memories of SIGGRAPH

Submissions are open until 1 October 2022 at bitly/enter-siggraph-memory

* We continue to work with the **Retrospectives Panels.** We helped identify a chair for the program for S2022 and we advised on panel topics, panel moderators, and panel members.
* **LESSON LEARNED:** selection of chair, recruitment of moderators, decisions (at least tentative) on topics, and recruitment of panelists must start shortly after the close of the previous year’s conference.
* Two of the S2022 retrospective panel topics addressed the **impact of computer graphics and SIGGRAPH**:
  + [Computer Graphics Disruptions in Art, Science, Visualization, Engineering and](https://s2022.siggraph.org/?post_type=page&p=1842&id=retro_103&sess=sess321) [Modeling](https://s2022.siggraph.org/?post_type=page&p=1842&id=retro_103&sess=sess321)
  + [The Impact of Computer Graphics on Daily Life](https://s2022.siggraph.org/?post_type=page&p=1842&id=retro_104&sess=sess321)

## Major Focus: Populating [history.siggraph.org](http://history.siggraph.org/) and collecting documents and artifacts

* Leads: Bonnie Mitchell and Jan Searleman
* Populating history.siggraph.org
* Since summer 2021, the six new content areas have been added:
  + Keynotes, educators’ programs, panels, posters, real-time live, studio
* Notable content increases include:

(# entries summer 2021; # entries July 2022; % increase)

* + Appy Hour (63; 72; 14%); Animations (100% increase); E-Tech (65; 529;

800%): People (3000; 13367; 450%)

* Work study students providing most of the labor to enter and check data
* Began creating a SIGGRAPH *master collection* of documents and artifacts
* Bowling Green State University has provided storage through mid-summer 2023.
* Collection to be used to help populate the online archive and for exhibits at SIG50.

## Focus: Year Round Engagement--online events

* In cooperation with the Pioneers, History Committee personnel participated in a webinar on the architectural history of GPUs and GPGPUs.
* The Retrospective panels, though a conference program, will be available as year-round resources.
* This was a weak point of our activities this year. We need to identify a lead for this.

## Focus: Gathering Stories

* Our focus was to gather all extant video interviews for preservation, editing, and publishing.

o We will use a SIGGRAPH savvy contractor for editing. External funding is expected.

* We either have in hand or have leads on the location of all previously recorded interviews.

## Other Continuing Activities: little activity on these this year.

* Graph-based indexing system (Julian Gomez and Paul Strauss).
* Transfer of personal and corporate archives to Babbage and planning for more (Joan Collins)

***Goals for FY2023***

* Concerns/Issues: Funding for SIG50 activities and video interview editing
* Volunteer Development:
* Recruit for IMPACT and year-round activities positions
* Finalize selection of next history committee chair.

## Major Focus: SIGGRAPH 50.

* Coordinate with Bonnie Mitchell. The History Committee will lead the CG&A special issue and activities (TBD) that will celebrate the technical papers.
* Advise on the 2023 Retrospectives Panels Program: Lead, moderators, topics, panelists.
* Successfully complete the CG&A Special Issue of SIGGRAPH Memories

## Major Focus: Population of [history.siggraph.org](http://history.siggraph.org/)

* Secure more stable funding for the Archive’s student workers
* Continue populating and validating data to the site.
* Negotiate the disposition of the Master Collection to a reputable archive after SIG50.

## Focus: Year Round Engagement--online events (unchanged from FY2022)

* In addition to the Retrospective Program at S2023, organize 2-3 events that have history content and complement the goals of other SIGGRAPH committees, e.g., curriculum development. Partner to do these. Increase the level of international content. Find a lead for this project.

## Focus: Gathering Stories

* 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.

## 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 organization.

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 current members of the committee are:

Mark Billinghurst (New Zealand) (Chair) Tomasz Bednarz (Australia) (Deputy Chair) Paul Deitz (USA)

Laura Trutoiu (USA) Carolina Cruz-Neira (USA) Bektour Ryskeldiev (Japan)

We had one person resign from the committee in 2022 (Katrin Wolf), and so we are still looking for more representation from Asia and especially Europe.

*Accomplishments:* The 2021-22 year was the third year that the committee was in operation, and our efforts were still affected by the COVID-19 pandemic. However, this should decrease in the second half of 2022 and 2023 with the return of in-person conferences.

Progress was made in the following areas:

* Setting annual goals
* Establishing a pattern of regular meetings
* Completing a technical report on the perception of SIGGRAPH as a venue for interactive and immersive work
* Conducting brainstorming sessions on how 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
* Providing content for the I&I web presence on the SIGGRAPH sites
* Establishing a social media presence for SIGGRAPH I&I Specific accomplishments have been made in the following areas:

1. *Regular Meetings:* Due to COVID and other factors, committee meetings were irregular during 2021, however in early 2022 we established a regular monthly meeting schedule, supplemented by other meetings as needed.
2. *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. This work was disrupted by COVID, but in 2021/22 we have had several brainstorming sessions internally and with the SIGGRAPH Asia CAG about how to work with the various conference chairs to increase submissions and acceptances. We will be working closely with SIGGRAPH Asia 2023 to implement these ideas.
3. *Perception Survey:* A survey was conducted in 2021-2022 of 70 of the leading researchers in HCI/Computer Graphics about their perception of SIGGRAPH as a venue for interactive and immersive research. Results were analyzed and presented at SIGGRAPH 2021 and SIGGRAPH Asia 2021, and a technical report written for the SIGGRAPH and SIGGRAPH Asia CAG.
4. *SIGGRAPH Focused Communities/Guilds Meeting:* Mark Billinghurst has been attending the

bi-weekly Focused Communities/Guilds meeting chaired by Mona Kasra. This is to coordinate with other committees and report on activities.

1. *Presentations at Conferences:* Birds of a Feather or Workshop sessions were organized at SIGGRAPH 2021 and SIGGRAPH Asia 2021. 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 2022 we will be organizing a Birds of a Feather session reflecting on almost 50 years of interactive and immersive experiences being presented at SIGGRAPH. We will also brainstorm for an interactive piece that we would like to develop for the 50th anniversary at SIGGRAPH 2023.
2. *Social Media Presence:* We have established a Twitter account for the activities of the Interactive and Immersive Experiences Committee. In the latter part of 2022 and into 2023 we will work on increasing social media followers, and explore moving into other social media platforms.
3. *Connecting with CHI/UIST conferences:* We have begun the development of a plan to connect with the ACM SigCHI and UIST conferences to encourage participation from those communities into SIGGRAPH. Ideas being developed include getting CHI/UIST PhD students to attend SIGGRAPH, showing the best CHI/UIST demos in Emerging Tech, getting the best CHI/UIST papers presented in BOF/Workshops, and providing promotional material into CHI/UIST conference packets. A recommended plan forward will be presented to the CAG in late 2022, targeting CHI/UIST 2023.

*Goals:* The committee would like to achieve the following high-level goals in 2022-2023:

* 1. Create an online repository of previous significant interactive and immersive work from SIGGRAPH
  2. Host BOF and Workshop activities at SIGGRAPH and SIGGRAPH Asia
  3. Create stronger connections to other SIGGRAPH committees
  4. Focused with SIGGRAPH program and technical chairs to increase the interactive and immersive experiences work at SIGGRAPH
  5. Facilitation of creation of a community-led interactive piece to celebrate 50 years of Interactive and Immersive work at SIGGRAPH, for SIGGRAPH 2023.
  6. Increase social media following, and adding other social media accounts
  7. Recruiting more committee members, especially from Asia and Europe
  8. Start arranging regular online community meetings
  9. Establishing a mentoring program for students and early career researchers
  10. Connecting with CHI/UIST to encourage involvement from people from those conferences at SIGGRAPH

## Information Technology Services

Chair: Aaron Hosier

*Mission:* The Information Technology Services committee manages and supports various services and systems for ACM SIGGRAPH including: the servers used to host organizational and conference websites; creating, maintaining, and supporting email aliases and lists used within the organization for committees, conferences, and chapters; management and support of the ACM SIGGRAPH Zoom services; and the management and support of the ACM SIGGRAPH Google GSuite site.

*Accomplishments:* Continued to collect and archive digital assets from various ACM SIGGRAPH areas.

1. Archiving and organizing all recorded Zoom meetings.
2. Working with the Communications Committee on reviewing the current organization website and then design and development of a new site.
3. Yearly conference preparation which consists of:
   1. Creation and setup of 30+ email lists
   2. Setup and then working with the vendors to test/deploy the conference websites for SIGGRAPH and SIGGRAPH ASIA.
   3. Creation of the Google Drive structure used by conference administration for all all conference related materials.
   4. Working with the vendor to create and deploy the static archive version of the previous year’s conference website.

*Goals:*

1. 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.
2. Work with the Communications Committee to complete the deployment of a new ACM SIGGRAPH website.
3. Setup training sessions and create documentation related to Google Apps for things such as:
   1. Maintaining Google Groups
   2. Managing Google Shared Drive access
4. Efforts related to the email list system including:
   1. Work through the lists and purge/retire those no longer needed.
   2. Development a system to export a list of lists along with their membership for regular review.
5. Begin transition of ACM SIGGRAPH websites and services currently using our servers to the new virtual server environment ACM has deployed.

## 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:*

* Successfully run eight sessions in SIGGRAPH 2021 and four sessions in SIGGRAPH Asia 2021
* While maintaining featured session like Women in CG and CG in Japan etc., continue to try out new sessions like ‘Stories of Resilience and Cultural Manifestation in Africa’ and ‘Creative Journey in and from East Europe’
* Streamlined the process of organization of sessions: Diagram and Templates for invitation emails and letter are created and shared
* Empowered team members lead and organize sessions.
* The most engaged year as a team.
* Instagram and LinkedIn accounts set up.

*Goals:*

* Continue to grow team spirit.
* Continue to improve and develop sessions.
* Increase year-round engagement with the global community.
* Develop a strategy to cope with both virtual and in-person conferences.

## Lifelong Learning Committee

Chair: Jonali Bhattacharyya

*Mission:* The mission of the Lifelong Learning Committee is to connect Computer Graphics professionals with applicable, relevant, and globally accessible learning resources through SIGGRAPH University.

*Accomplishments:* Our main goal for the first year was SIGGRAPH University. We accomplished that! We started with a solid vision, and today we are about to release the brand new SIGGRAPH University Website just in time for the 2022 Conference: <http://university.siggraph.org/>

The new SIGGRAPH University website will feature limited content for the time being, as we focus on developing fresh content in the future. At this time we are launching the website with brand new courses and webinars - developed just for SIGGRAPH University, and original Panel Discussions from the 2022 conference presented and hosted by the Lifelong Learning Committee. Our new website presents all content in a navigable and searchable format, clearly indexed and with a recommendation setup. Our courses are interactive, and are presented to the user in an easy to use format, and in an embedded way, where videos viewed will start from where the user left off.

The Lifelong Learning Committee has also grown in the past year. Currently there are few focus areas, with volunteers covering those areas as listed below:

* Learning Leads
* Career Leads
* Design Lead
* Marketing and Event Coordinator
* Project Manager

This team structure has proven very effective, and we have been a very efficient team, accomplishing a huge amount of work in a very short tim

*Goals:* One of the core areas within the Lifelong Learning Committee’s work is the SIGGRAPH University, which is currently in development with the vision of serving as the hub for all things learning related within the ACM SIGGRAPH community, and providing resources to students and professionals in Computer Graphics around the world. The Lifelong Learning Committee is also dedicated to mentoring professionals in their careers, providing free resources and events throughout the year.

In the upcoming year we strive to recruit additional volunteers for these roles:

* Social Media & Community Manager
* Graphic Designer
* Course Content Associate

Main goals for the next year:

* Develop fresh new content for SIGGRAPH University
* Get the name out there and generate more users for SIGGRAPH University
* Develop content for paid member-only subscription
* Get both SIGGRAPH North America and SIGGRAPH Asia Conferences and other learning related committees to share content with SIGGRAPH University, so we can make this University a learning hub under ACM.
* Continue our efforts in mentoring professionals in their careers, providing free resources and events throughout the year

## Membership Committee

Chair: Barbara Helfer

*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:*

* + Met with online committee and liaisons to discuss efforts in progress and plans for the upcoming year:
    - Brad Lawrence/David Spolestra – Budget Committee
    - Stephen Spencer- Publish
    - AJ Christensen – Chapters Committee/Online Communities
    - Mary Whitton- History
    - Corrine Price- past Membership
  + Areas Discussed:
    - Online webinar series
    - Digital Business Cards
    - SIGGRAPH Village
    - Membership Benefits
    - Low-cost tools that the community could use to enhance their careers
    - 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.)
  + Worked with AJ Christensen on The SIGGRAPH Village setup and onsite

*Goals:*

* + Complete a competitive analysis of other professional societies and their goals and benefits for their members.
    - Define 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:*

* + No clear direction of what has happened or where the EC would like membership to go in the future.
  + Inability to define or gain access to the ACM SIGGRAPH membership database and/or structure since it is closely managed by ACM and could ultimately affect all SIGs.

## Nominations Committee

Chair: Thierry Frey

*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 2022. The slate is as follows:

Director A

* Mona Kasra, University of Virginia
* Kevin McNulty, Middle Tennessee State University Director B
* Shi-Min Hu, Tsinghua University
* Victor Zordan, Roblox, Clemson University Director C
* Eakta Jain, University of Florida
* Victoria Rege, DataRobot The Nominations Committee managed advertisements/applications,

The Nominations Committee managed advertisements/applications, conducted interviews, assisted and made recommendations for the following for Chair positions:

* Chapters Committee - AJ Christensen
* Interactive and Immersive Committee - Mark Billinghurst
* International Relations Committee - Asiya Gizatulina
* Digital Arts Committee - on-going

## Committee Structure

This year, a combination of independent factors resulted in an unforeseen situation where \*all\* members of the Nominations Committee were to step off: Some members attained the maximum allowed number of terms while others members decided to step off because of other upcoming ACM SIGGRAPH responsibilities. To maintain some continuation among the constituency, it was asked of the Executive Committee to allow 2 members to serve for a 4th consecutive term. This was accepted.

The current Nominations Committee roster and term guidelines stands as following

* Thierry Frey, Chair (2021-2024)
* Scott Owen, 4th term (2019-2023)
* Arik Shamir, 4th term (2019-2023)
* Jenny Dana, 1st term (2022-2023)
* Dena DeBry, 1st term (2022-2023)
* Larry Bafia, 1st term (2022-2023)
* Rebecca Strzelec, past-Chair (2022-2023)

PAST members

* Rebecca Strzelec, Chair (2018-2021)
* Manolis Savva (2019-2021)
* Marc Barr (2020-2022)
* Kalina Borkiewicz (2020-2022)

*Goals:* SIGGRAPH 2022 will be the first in-person conference after 2 virtual conferences. The Nominations Committee is planning to conduct many in-person interviews in preparation for the 2023 elections and the replacement of Standing Committee Chairs.

As history has taught us, apart from the interviews, we will not hold any type of Nominations event to meet volunteers (panel, reception, mixer etc.) It has been determined that such events are not successful 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 as it is not deemed to be effective

## 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, 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 2021, SIGGRAPH Asia 2021, CSCS, CVMP, DigiPro, ETRA, I3D, MIG, SAP, SCF, SUI, VRST, and Web3D.

The second year of the PACM issue documenting the Art Papers presented at the annual SIGGRAPH conference went more smoothly than in 2021. Having the Art Papers Chair provide a volunteer to assist authors with their materials was a great help. A milestone was reached early in 2022, with the conclusion of physical deliverables for distribution of annual conference content to attendees.

*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, including recent and upcoming changes for authors’ responsibilities (ORCID identifiers are required for journal authors now and for ALL authors later in 2022).
  + 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, a growing number of ACM events are using TAPS, and ACM expects to have most events using it by the end of 2022.

## 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.

*Goals:* Continue “conference coffee” program connecting members of the research community for informal conversations and networking, and expand to in-person conferences.

* + Continue undergraduate mentorship program intended to guide prospective graphics graduate students through the process of applying to MS and PhD programs.
  + Continue 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.
  + Launch SIGGRAPH research blog, helping demystify the technical paper submission process.

## 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:* Many specialized conferences continue to run in virtual formats due to coved, or for a variety of other reasons. For instance, the purely virtual conference format permits a wider number of participants without travel, but likewise produces a collection of high-quality recorded presentations which help with further dissemination of ideas presented at the conference. Other conferences have moved to hybrid models. The thinking behind registration rates for online and in person as well as sponsorship levels for virtual, hybrid, and in-person conferences has been evolving. That said, most virtual conferences continue to have minimal costs, small budget, and set registration rates accordingly (often free). The SCC chair has taken on the responsibility of approving the PAF and TMRF requests, without consulting the larger committee. For 2022, we are expecting a total of 20 specialized events (10 sponsored, 5 co-sponsored, and 5 in-cooperation). The strategic efforts of encouraging award creation (at the conference level) and data collection have continued. Of the sponsored and co-sponsored events, there is still only one event (SCA) that is running a dissertation prize and early career researcher award, but discussions continue with the other sponsored and co-sponsored events. The data collection effort is complete to its first phase, specifically dates and venues of all conferences can be explored in an "observable" data visualization that is being added to the specialized conferences pages on the SIGGRAPH org website. A second phase of data collection will be to better monitor submission and acceptance rates across all conferences as well as participation rates. This data has traditionally been difficult to collect. Also, during the year, the SCC chair attended Eurographics and the workshops board working group meeting. The common interest of the workshops board and SCC are the 3 co-sponsored events (SCA, HPG, and Expressive which has yet to run a conference since the last edition in 2019). A challenge for many conferences sponsored by Eurographics is the revenue model to cover publishing costs that have been traditionally based on attendance. With HPG having massive attendance with its online format, the fees are seen as excessive. In contrast, there should be a better mechanism for recouping hidden costs of publishing that are balanced with the vast free volunteer labour that goes into running different events.

*Goals:* In the next year the chair will continue to explore the creation of a sub-committee, with the belief that steering committee chairs of different specialized conferences will be the best people to include in such a sub committee. There will be a first face to face meeting of these chairs at SIGGRAPH, with hope this meeting will plant the seeds for future discussions of improvements that can be implemented across all specialized events. Another goal is to update the specialized conferences chair handbook that has not been updated since 2017. Finally, there is still the goal of establishing regular virtual meetings throughout the year with groups of specialized conference chairs 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.

# Advisory Boards

## Computer Animation Festival Advisory Board (CAFAB):

Chair: Mark Elendt

*Mission:* The Computer Animation Festival Advisory Board was established with the goal to provide a long term vision to the CAF while promoting the SIGGRAPH Organization and Conferences through the international Traveling Show.

*Accomplishments:* In 2021, the CAFAB worked closely with the CAF chairs for both the SIGGRAPH North America and SIGGRAPH Asia conferences. They gave guidance on various issues including awards, the submission process, and show format. As the pandemic contiued, the CAFAB continued to evaluate various streaming options and how streaming affects the Traveling Show and the two conference screenings.

*Goals:*

* + The CAFAB will continue to provide a channel between the two SIGGRAPH conferences to help drive consistency, best practices and learning.
  + Partnerships and distribution remain priorities, increasing awareness and presence of ACM SIGGRAPH
  + Focus on the future of the Traveling Show and the impact of streaming.

## 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 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.

*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 2021 and 2022 hybrid 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 the Papers Chairs, and to provide continuity and communication among the 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 that arose this year during the SIGGRAPH paper selection process; one such issue (still under discussion) is the co-existence of arxiv preprint posts with the double-blind review process. The PAG had a significant role in coordinating the definition and implementation of the new Conference Papers Track, initiated this year at SIGGRAPH North America, and continued at SIGGRAPH Asia. The initial feedback from this new program is very positive, with a very significant increase overall in paper submissions to both venues.

*Goals:* Same activities as last year, with particular attention to the two issues that occupied the PAG this year, i.e., the conference papers track as well as the double-blind review process and arxiv preprints.

## 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. They have in the past served as an advisory board to the ACM SIGGRAPH Executive Committee (EC). This year the SIGGRAPH Pioneers were reclassified as a Community Group, which is a subset of the ACM SIGGRAPH community that has a specialized common interest or demographic. The Pioneers group is committed to preserving the personal and group legacies of computer graphics and interactive techniques. The group is now hosting a series of virtual panels focusing on pioneering moments in the field.

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:*

* + Maintained a Steering Committee of approximately 20 members with regular monthly meetings, active since 2019. Committee has representation from the EC and from ACM, and represents a diverse cross-section of research, education, development and production pioneers.
  + Introduced SIGGRAPH Pioneers branding, with a logo designed by the steering committee and accepted by ACM/SIGGRAPH
  + Maintained communication between the Pioneers and both the History and the 50th Anniversary teams, through group communication with the Pioneers membership.
  + Participated jointly with the SIGGRAPH History Committee, the Los Angeles SIGGRAPH History Project and the Charles Babbage Institute on a panel called “Preserving Your Legacy”

<https://www.youtube.com/watch?v=FhgBgeq0Mfw> <https://www.youtube.com/watch?v=erB2GDce28w>

* + Established the email address [legacy@siggraph.org](mailto:legacy@siggraph.org) as a repository for discussions about what to do with personal archives of computer graphics memorabilia
  + Organized two covid-safe Virtual Pioneers Receptions - for SIGGRAPHs 2020 and 2021. These real-time Zoom events included: - Opening remarks conducted live and attended from all participants’ homes
    - An “In Memoriam” tribute video presentation.
    - An address from an exceptionally accomplished Featured Speaker, pre-recorded and edited exclusively for the SIGGRAPH Pioneers
    - A live Q&A session with the Featured Speaker, exclusively for the Pioneers membership.
    - A large number of chat rooms for real-time meetups with old friends, co-workers, and alumni of various universities, research groups and production companies. (Thanks to Lou Harrison for his technical support for these events.)
  + In 2020 our Featured Speaker was the late Douglas Trumbull, the visual effects pioneer who created shots for 2001: A Space Odyssey and Blade Runner. He gave the SIGGRAPH Pioneers one of his last interviews, moderated by Chair Ed Kramer:

<https://www.youtube.com/watch?v=-dDY_X0jhmE&t=2386s>

* + In 2021 the Pioneers Featured Speaker was Donna J. Cox, universally recognized as the pioneer of scientific visualization using computer graphics. Once honored as one of 40 modern-day Leoardo da Vinci’s, Donna also gave a pre-recorded overview of her career, and also appeared live for the Pioneers for a Q&A session.

[https://www.youtube.com/watch?v=uviaNHNfdWQ&list=PLUPhVMQuDB\_ZAxYBYz4NUEjNhC1](https://www.youtube.com/watch?v=uviaNHNfdWQ&list=PLUPhVMQuDB_ZAxYBYz4NUEjNhC1ziNy2W) [ziNy2W](https://www.youtube.com/watch?v=uviaNHNfdWQ&list=PLUPhVMQuDB_ZAxYBYz4NUEjNhC1ziNy2W)

<https://www.youtube.com/watch?v=20FwUNMRFYY&t=220s>

* + In 2022, the Pioneers Featured Speaker will be Ken Perlin, Director of the Future Reality Lab at NYU. Ken will be looking at the advancements in computer graphics technology through the years, and speculating on where it is all leading. He will be appearing in person in Vancouver at the Pioneers Reception at 6:00pm on Tuesday August 9, in the McKenzie Ballroom of the Fairmont Waterfront Hotel
  + The Steering Committee decided during the quarantine that the Pioneers could host live panels as a year-round event, focusing on pioneering events and people throughout SIGGRAPH history. We have hosted two panels so far in 2022:

## January, 2022

The Analog Era of Computer Animation (circa 1969-1983) <https://www.youtube.com/watch?v=zbWMPG3BrgA&t=5s> *Moderator: Ed Kramer*

*Panelists: Susan Crouse, Fred Kessler, Roy Weinstock, David Seig*

## April, 2022

Chasing Pixels: The Pioneering Graphics Processors <https://www.youtube.com/watch?v=gvGq87XNXwU&t=22s> *Moderator: Jon Peddie*

*Panelists: Henry Fuchs, Steve Molnar, Marc Olano, Nick England, Mary Whitton, Curtis R. Priem, Pete Segal.*

*Goals:*

* + Host a successful in-person Pioneers Reception in Vancouver in 2022
  + Continue working with the History Committee, the SIGGRAPH 50th Anniversary Committee, the Los Angeles SIGGRAPH History Project, and the Charles Babbage Institute on legacy issues
  + Continue hosting quarterly panels live, on Zoom, on issues relevant to the pioneers of computer graphics and interactive techniques

# Key Issues facing ACM SIGGRAPH:

ACM SIGGRAPH continues to be concerned regarding the long-term financial health. SIGGRAPH must maintain a reserve fund balance, which is required to ensure our future viability. SIGGRAPH has lost revenue in FY21 and is budgeted to lose additional funds in FY22. It is possible that our costs will increase further, as the proportion of funds ACM SIGGRAPH contributes as part of ACM will increase substantially for the next fiscal year.

SIGGRAPH as an organization has been cutting costs, and has a reserve fund which meets ACM guidelines. The fund balance was reduced due to the pandemic.The uncertainty of our post-pandemic future weighs heavily on SIGGRAPH leadership. We have taken steps to protect SIGGRAPH, including the hybrid conference approach for SIGGRAPH 2022.

Our membership is down significantly from last year, even as we have identified it as a critical source of revenue moving forward. This is a main driver for the strategic membership pillar. Membership is the bedrock on which we build upon.

Volunteers deserve the best we can provide. In the past, SIGGRAPH’s method of finding volunteers was ad-hoc. The new approach of the Volunteer Development Committee will include a matchmaking approach, where critical needs are filled based on potential volunteer applications from the broader community.

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.While each initiative 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 worked to improve how information is obtained and disseminated, so that issues which arise can be worked through in a timely manner. This approach needs finesse and accountability to ensure success. The teams are working through the proper balance to optimize communication.

# Appendix:

Chair regroupings with EC reps:

*Career Development: Adam Bargteil and Masa Inkage* Early Career Development – Ginger Tontaveetong Research CD -- Justin Solomon

Practitioner CD -- Juan Miguel de Joya Lifelong Learning -- Jonali Bhattacharyya

*Online Communities: David Spoelstra and Brad Lawrence*

Communications – Adele Newton History – Mary Whitton

Information Technology Services – Aaron Hosier Publications – Stephen Spencer

*Focused Communities: Mona Kasra and Barbara Mones*

Digital Arts – Victoria Szabo D&I – Tony Baylis

Education – Glenn Goldmann

Interactive and Immersive Experiences – Mark Billinghurst International Resources – June Kim

Chapters – A.J. Christensen

*External: Hanspeter Pfister*

External Relations – Joaquim Jorge Specialized Conferences – Paul Kry

*Chair's Grouping: Elizabeth Baron and Jesse Barker*

Awards -- John (Spike) Hughes Governance – Scott Owen Nominations - Thierry Frey

**SIGHPC Annual Report**

**Submitted By: John West**

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 maintained a strong financial position during the COVID-19 pandemic while still managing and growing programs for our community with a focus on career building activities for members of groups historically underrepresented in computing and HPC.  
  
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 Computational & Data Science Fellowships awarded its seventh 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 73 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 $3M. Of the 12 students named as winners this year, 90% are women; and 45% are underrepresented minorities in their country of study. This year’s fellows will be provided travel support to SC22 and will be recognized in the conference’s awards ceremony. SIGHPC has also extended a travel offer to fellowship recipients that started in the 2020 and 2021 cohorts to attend SC22.

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. The SIG is completing efforts now to increase the frequency of this award to every year. The 2021 winner, Didem Unat from Turkey, deferred her travel to SC21 last year because of COVID concerns, but is traveling to SC22 for the formal presentation of her plaque.

Student travel grants help build the HPC workforce pipeline, and ensure that new voices can participate in our largest conferences. SIGHPC offers travel grants all four conferences. To further sustain the HPC workforce pipeline, SIGHPC has launched an Early Career travel grant program for all four conferences beginning in 2022.

The SIG’s Computing4Change program, has graduated from SIG support and now runs exclusively on grant funding from federal and other organizations. This is a good model for SIG impact: we pilot and refine a program that is then able to get its own funding for long-term sustainability. Through our support of Computing4Change, the program engaged over 120 students in computing and HPC, and this work now continues without SIG funding as we look to pilot and graduate new programs.

The SIG continued its effort to spark interest among undergraduates in computing and HPC through its HPC Immersion program, now in its third year. HPCI engages students in the SC conference and provides 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 20 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 piloted a CARES committee for its flagship event, SC21, held in St. Louis last November. SIGHPC CARES serves as a resource for those who experience discrimination and/or harassment in violation of ACM’s policies governing SIG activities: policy against discrimination and harassment,policy on plagiarism, misrepresentation, and falsification;policy on coercion and abuse in the ACM publications process; andpolicy on roles and responsibilities in ACM publishing. CARES supports individuals by allowing them to work with established members of the SIGHPC community, who are approachable and willing to listen and help navigate the SIGHPC and ACM reporting and accountability process. The pilot was successful, and CARES has now been adopted as a permanent feature of the SC conference. We are expanding CARES to our other sponsored conferences beginning in FY23.   
  
3. Provide a list of awards and recipients  
  
During this reporting period, the major SIG award conferred is the SIGHPC Outstanding Doctoral Dissertation Award (the Emerging Woman Leader in Technical Computing Award is, at the time covered by this reported, conferred only every other year). Besta Maciej is the winner, with an honorable mention going to Kazem Cheshmi. The presentation of the award at SC22 will be done by the SIGHPC Chair.

The SIGHPC Education chapter is conferring its first Award for Outstanding Contributions to Computational Science Education this year. The award is a biannual education award to recognize outstanding contributions to computational, data-enabled science, and HPC education and training in all disciplines. The winner was selected during FY22 and will be announced during the public presentation of the award at the SC22 conference in November.

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:

Closing the "Quantum Supremacy" Gap: Achieving Real-Time Simulation of a Random Quantum Circuit Using a New Sunway Supercomputer (<https://doi.org/10.1145/3458817.3487399>)

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:

Digital transformation of droplet/aerosol infection risk assessment realized on “Fugaku” for the fight against COVID-19 (<https://doi.org/10.48550/arXiv.2110.09769>)

The best professional paper at SC21 (St. Louis, USA) was: “Revealing Power, Energy and Thermal Dynamics of a 200PF Pre-Exascale Supercomputer” (<https://doi.org/10.1145/3458817.3476188>), and the best student paper at that event was " Efficient Large-Scale Language Model Training on GPU Clusters Using Megatron-LM” (<https://doi.org/10.1145/3458817.3476209)_>.

PPOPP 2022 awarded best paper distinctions in several categories. The winners are:

* [The Performance Power of Software Combining in Persistence](https://doi.org/10.1145/3503221.3508426)
* [Lock-free locks revisited](https://doi.org/10.1145/3503221.3508433)
* [Interference Relation-Guided SMT Solving for Multi-Threaded Program Verification](https://doi.org/10.1145/3503221.3508424)

The best paper at PASC 2022 (Basel, Switzerland) was “Porting Uintah to Heterogeneous Systems” (<https://doi.org/10.1145/3539781.3539794>).

Best papers were awarded in multiple categories at PEARC22 (Boston, USA). The winners are:

* [Performance Optimization of the Open XDMoD Datawarehouse](https://dl.acm.org/doi/10.1145/3491418.3530290)
* [Migrating towards Single Sign-On and Federated Identity](https://dl.acm.org/doi/10.1145/3491418.3530770)
* [High Performance MPI over the Slingshot Interconnect: Early Experiences](https://dl.acm.org/doi/10.1145/3491418.3530773)
* [Exchanging Best Practices for Supporting Computational and Data-Intensive Research, The Xpert Network](https://dl.acm.org/doi/10.1145/3491418.3530293)
* [Understanding Factors that Influence Research Computing and Data Careers](https://dl.acm.org/doi/10.1145/3491418.3530292)
* [ScriptManager: an interactive platform for reducing barriers to genomics analysis](https://dl.acm.org/doi/10.1145/3491418.3535161)
* [COSMO: a Research Data Service Platform and Experiences from the BlueTides Project](https://dl.acm.org/doi/10.1145/3491418.3535166)
* [The ERN Cryo-EM Federated Instrument Pilot Project](https://dl.acm.org/doi/10.1145/3491418.3535141)
* [Artificial Intelligence to Classify and Detect Masquerading Users on HPC Systems from Shell Histories](https://dl.acm.org/doi/10.1145/3491418.3535187)

5. Describe conference activity  
  
During ACM FY22 three of SIGHPC's four co-sponsored events were held in-person (most with opportunities for remote participation); the fourth was virtual. In-person or hybrid events include: SC22, the International Conference for High Performance Computing, Networking, Storage, and Analysis (Nov 2021 in St. Louis, MO); PEARC22 (July 2022 in Boston, MA); and PASC22 in Basel, Switzerland. PPOPP22 (Mar 2022 was held virtually.  
  
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 have organized chapters in China and in Tennessee (where ORNL and the university form a large hub for HPC practice and research).

* 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 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.

**SIGKDD Annual Report**

**July 1, 2021 - June 30, 2022**

**Submitted by: Wei Wang, SIGKDD Chair (**[**weiwang@cs.ucla.edu**](mailto:weiwang@cs.ucla.edu)**)**

**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. 2022 KDD conference is in person is Washington DC from August 14 to 18. Even though international travel is challenging from some country, e.g. China, the conference still expects to attract around 2000 attendees. We anticipate this number will continue to grow in coming years when international travel is no longer an issue.
* Healthy financial status. SIGKDD maintains its healthy financial status as usual. The 2020 and 2021 KDD conferences maintains a minor surplus. The 2022 KDD conference is likely to break even. 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 2021 and 2022 KDD conferences, special events related to EDI were held successfully. The theme for 2022 KDD is on “Towards Gender Equity in Tech.” The opening keynote of the 2022 KDD conference is delivered by a female speaker.
* Undergraduate student engagement. The Undergraduate Consortium at 2022 KDD (KDD-UC) is a new initiative that endeavors to expand and enhance the participation of undergraduate students of diverse backgrounds in research pertaining to knowledge discovery from data. 29 undergraduate students presented their research ideas and interacted with their mentors.

**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 continue to strengthen EDI in the 2022 KDD conference. 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. 1 out of 3 keynote speakers and 4 out of 9 ADS invited speakers were female. 1 ADS invited speakers is African American.
* New events were designed in 2022 KDD conference to strengthen EDI. For example, EDI topics are seriously addressed in the Undergraduate Consortium, the Trustworthy AI Day, and the Women in KDD Workshop.

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

* ACM SIGKDD Innovation Award: Dr. Huan Liu, Arizona State University, for his outstanding contributions to the foundation, principles and applications of social media mining and feature selection for data mining
* ACM SIGKDD Service Award: Dr. Charu Aggarwal, IBM, for his significant service contributions to conferences and journals in the field of data mining
* ACM SIGKDD Dissertation Award: Zhitao (Rex) Ying, Stanford University (USA), Dissertation title: Towards Expressive and Scalable Deep Representation Learning for Graphs
* ACM SIGKDD Rising Star Award: Dr. Yuxiao Dong, Tsinghua University, for his significant research in graph representation learning and pre-training
* SIGKDD Test of Time Award for Research: Thanawin Rakthanmanon, Bilson Campana, Abdullah Mueen, Gustavo Batista, Brandon Westover, Qiang Zhu, Jesin Zakaria, and Eamonn Keogh: Searching and Mining Trillions of Time Series Subsequences under Dynamic Time Warping. KDD 2012: 262–270.
* SIGKDD Test of Time Award for Applied Data Science: Jing Yuan, Yu Zheng, Xing Xie: Discovering Regions of Different Functions in a City Using Human Mobility and POIs. KDD 2012: 186–194.

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

* 2022 KDD Best Research Paper Award: Jing Ma, Mengting Wan, Longqi Yang, Jundong Li, Brent Hecht, Jaime Teevan, Learning Causal Effects on Hypergraphs
* 2022 KDD Best Student Paper Award: Shibal Ibrahim, Hussein Hazimeh, Rahul Mazumder, Flexible Modeling and Multitask Learning using Differentiable Tree Ensembles
* 2022 KDD Best Paper Award Runner-Up: Chengchang Liu, Shuxian Bi, Luo Luo, John C. S. Lui, Partial-Quasi-Newton Methods: Efficient Algorithms for Minimax Optimization Problems with Unbalanced Dimensionality
* 2022 KDD ADS Best Paper Award: Zhen Wang, Weirui Kuang, Yuexiang Xie, Liuyi Yao, Yaliang Li, Bolin Ding, Jingren Zhou, EasyFGL: Towards a Unified, Comprehensive and Efficient Platform for Federated Graph Learning
* 2022 KDD ADS Best Paper Award Runner-Up: Albert Chen, Reza Hosseini, Kaixu Yang, Sayan Patra, Yi Su, Saad Eddin Al Orjany, Sishi, Parvez Ahammad, Deploying Flexible Forecasting at Scale in LinkedIn

**5. Describe conference activity**

2022 KDD was held successfully. It attracted over 2000 attendees. SIGKDD also sponsored the 2022 WSDM 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.
* SIGKDD initiated a task force to evaluate and enhance the paper review process to better manage the growing number of submissions.
* 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.

**SIGMETRICS FY’22 Annual Report**

**July 2021 – June 2022**

**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. Balaji Prabhakar of Stanford University in recognition of his outstanding contributions to applied probability and the theory and design of Internet algorithms, data center networks and societal networks.

● The SIGMETRICS Rising Star Research Award was awarded to Dr. Giulia Fanti of Carnegie Mellon University for fundamental and interdisciplinary research on scalable systems for data sharing that ensures security and privacy.

● The SIGMETRICS Test of Time Award was presented to Berk Atikoglu, Yuehai Xu, Eitan Frachtenberg, Song Jiang, and Mike Paleczny, for their work "Workload Analysis of a Large-Scale Key-Value Store", published in the Proceedings of ACM SIGMETRICS/Performance 2012. This work provides a workload characterization of key-value stores using a large-scale dataset from Facebook's Memcached deployment consisting of over 284 billion requests. The study contributes to the scientific understanding of caching workloads in production, shedding light on request composition, sizes, rates, and temporal patterns, together with several other dimensions.

● The 2022 ACM SIGMETRICS/Performance Best Paper Award was awarded to the paper "WISEFUSE: Workload Characterization and DAG Transformation for Serverless Workflows" by Ashraf Mahgoub (Purdue University), Edgardo Barsallo Yi (Purdue University), Karthick Shankar (Carnegie Mellon University), Eshaan Minocha (Purdue University), Somali Chaterji (Purdue University), Sameh Elnikety (Microsoft Research), and Saurabh Bagchi (Purdue University).

● The Kenneth C. Sevcik Best Student Paper Award went to "Offline and Online Algorithms for SSD Management" by Tomer Lange (Technion - Israel Institute of Technology), Joseph (Seffi) Naor (Technion - Israel Institute of Technology), and Gala Yadgar (Technion - Israel Institute of Technology). The paper also won IFIP WG 7.3’s Stephen S. Lavenberg Best Student Paper Award.

**Conference and Workshops:**

This joint edition of SIGMETRICS/Performance, hosted at IIT Bombay, was the first one for our SIG to be held in hybrid format, allowing our community for the first time to return to in-person events after two years. The event saw in particular a very good on-site student participation from national institutions and overseas. The main conference papers were published as usual, accompanied by free videos released on the SIG’s youtube channel.

SIGMETRICS continued to offer this year 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 modelling, 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. Compared to 2021, where this model was first trialled, this edition saw a more balanced distribution across the thematic categories.

The conference also hosted several tutorials and four workshops: Learning-based Control of Queues and Networks; MAMA 2022 - International workshop on MAthematical performance Modeling and Analysis; Performance of host-based Network Applications (PerfNA), and Blockchains and Networking.

SIGMETRICS also partners with SIGSOFT and SPEC as technical sponsors of the ICPE conference, and together with IEEE in IWQoS, as well as with SIGCOMM and other SIGs in cosponsoring IMC and SenSys.

**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/Performance 2022 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 "WISEFUSE: Workload Characterization and DAG Transformation for Serverless Workflows" by Ashraf Mahgoub (Purdue University), Edgardo Barsallo Yi (Purdue University), Karthick Shankar (Carnegie Mellon University), Eshaan Minocha (Purdue University), Somali Chaterji (Purdue University), Sameh Elnikety (Microsoft Research), and Saurabh Bagchi (Purdue University). The paper proposes an automated approach to generate an optimized execution plan for serverless workflows for a user-specified latency objective or budget. WISEFUSE introduces three optimizations: (1) Fusion combines in-series functions together in a single virtual machine to reduce the communication overhead between cascaded functions. (2) Bundling executes a group of parallel invocations of a function in one virtual machine to improve resource sharing among the parallel workers to reduce skew. (3) Resource Allocation assigns the right virtual machine size to each function or function bundle to reduce latency and cost.

● In "Offline and Online Algorithms for SSD Management" by Tomer Lange (Technion – Israel Institute of Technology), Joseph (Seffi) Naor (Technion - Israel Institute of Technology), and Gala Yadgar (Technion - Israel Institute of Technology) The paper studies the SSD management problem from an algorithmic perspective, considering it in both offline and online settings. In the offline setting, the authors present a near-optimal algorithm that, given any input, performs a negligible number of rewrites (relative to the input length) and then they study its hardness. In the online setting, the authors consider algorithms without prior knowledge about the input and discuss the possible benefit of randomization. They also design and study a novel online algorithm for the problem.

**Diversity, Equity, and Inclusion:**

Several activities in the SIG has been taken to broaden participation to foster equality and be more inclusive in the categories of community members we recognize via awards or service roles:

● We have introduced for the first time the ACM SIGMETRICS Dissertation Award Call, which will recognize outstanding doctoral dissertations in the areas covered by the SIG.

● We have continued the new practice of issuing a Call for Hosting. SIG planning is now scheduled up to 2024. We have also confirmed in the process our continued participation to FCRC 2023.

● We have integrated in our processes the new ACM Violations Database to ensure alignment with ACM best practices in terms of professional behavior and ethics.

● SIGMETRICS has also recently modified the call for paper of its main conference to include DEI considerations, such as accessibility guidelines for the authors to be more inclusive in the language they use in the papers. Instructions were also provided to the session chairs to ensure good handling of the session presentations with respect to DEI.

**Key issues for the next 2-3 years:**

● Evolving our format in FCRC 2023 which will be the first time we run a hybrid event in the US timezone, therefore requiring a different way of organizing the event compared to running a separate mirror for the US timezone, which was the model adopted in 2022.

● We intend to expand recognition for frequent authors in SIGMETRICS and optimize the processes for the operation of award committees.

● 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**

**Submitted By: Onur Mutlu**

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 55th incarnation in 2022, 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. Accepted papers have also been growing to more than 80-90 in 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](https://twitter.com/comparchsa?lang=en)) in its activities. Other support we provide is described below under answers to the remaining questions.

In addition, we note the following activities:

* We publish online newsletters at least twice a year. Latest one can be found here: <https://www.sigmicro.org/newsletter/>
* We provide news and information on a much more frequent basis via our website (<https://www.sigmicro.org/>), Twitter channel (<https://twitter.com/acmsigmicro>) and new LinkedIn channel (<https://www.linkedin.com/company/74541644/>). We have revamped our website in 2021 to become much more streamlined and we will be adding much more content soon.
* We communicate information about MICRO and the MICRO Test of Time Award further via their respective websites (<https://www.microarch.org/> and <https://www.microarch.org/tot/>), managed by the SIGMICRO Information Director.
* We hold an annual SIGMICRO meeting to communicate with our membership in the Business Meeting associated with the MICRO conference. This meeting provides updates on SIGMICRO status and activities to the membership, gathers feedback, and enables in-person engagement and communication with our membership.

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

SIGMICRO has at least three major activities to support and foster diversity, equity and inclusion.

First, we strongly support the SIGARCH/SIGMICRO CARES (Committee to Aid REporting on discrimination and haraSsment policy violations; <https://www.sigarch.org/benefit/cares/>). From the CARES Annual Report: “Since its inception, CARES 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.” CARES Members are present and active at the MICRO conference and they deliver an annual report both in writing as well as in presentation form in the SIGMICRO Annual Meeting at the MICRO Conference.

Second, we strongly support the activities of the Computer Architecture Student Association ([https://twitter.com/comparchsa](https://twitter.com/comparchsa?lang=en)), providing them a platform at the SIGMICRO Annual Meeting at the MICRO Conference and otherwise helping with any requests they may have. CASA has started a Summer Reading Group in 2022, which is an ongoing series of readings and discussions on advancing diversity, equity, and inclusion (DEI) in the community (and anyone is welcome to participate). CASA organizes and supports various events at the MICRO conference and provides many useful mentoring and networking opportunities to students in our community.

Third, SIGMICRO sponsors and supports the Career Workshop for Inclusion and Diversity in Computer Architecture (<https://www.colorado.edu/conference/cwwmca/>), which will celebrate its 8th incarnation this year at the MICRO Conference. The MICRO Career Workshop (formerly CWWMCA) brings together diverse members of the computer architecture community 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.

3. Provide a list of awards and recipients

SIGMICRO Distinguished Service Award (<https://www.sigmicro.org/awards/dsa.php>) is presented to an individual who has contributed important service to the processor microarchitecture and microsystems community while also serving as an active member of SIGMICRO who has contributed (or is contributing) significantly to SIGMICRO organization and/or SIGMICRO-sponsored conference committees. The 2021 recipient of the award was Dr. Pradip Bose from IBM Research.

MICRO Test of Time Award (<https://www.microarch.org/tot/>) is a major award that SIGMICRO helps the MICRO Steering Committee in organizing. Many papers that revolutionized or greatly advanced computer design (published at the MICRO conference) received this award. The following two papers were awarded the eighth MICRO Test of Time Award in 2021. These papers were selected from among all the 153 eligible papers published in MICRO conferences that were held between 1999 and 2003 (inclusive).

|  |  |  |
| --- | --- | --- |
| **Conference** | **Paper Title** | **Authors** |
| MICRO 2003 | [Single-ISA Heterogeneous Multi-Core Architectures: The Potential for Processor Power Reduction](https://dl.acm.org/doi/10.5555/956417.956569) | Rakesh Kumar, Keith I. Farkas, Norman P. Jouppi, Parthasarathy Ranganathan, Dean M. Tullsen |
| MICRO 2003 | [Razor: A Low-Power Pipeline Based on Circuit-Level Timing Speculation](https://dl.acm.org/doi/10.5555/956417.956571) | Dan Ernst, Nam Sung Kim, Shidhartha Das, Sanjay Pant, Rajeev R. Rao, Toan Pham, Conrad H. Ziesler, David T. Blaauw, Todd M. Austin, Krisztián Flautner, Trevor N. Mudge |

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

Our sponsored conferences continue publishing cutting-edge papers on new areas as well as old areas. A list of their proceedings can be reached from under “Events” in the SIGMICRO page (<https://www.sigmicro.org/>).  In particular, the MICRO-54 program is readily available here and includes many significant works, including a Best Paper Session: <https://www.microarch.org/micro54/program/>

The following, copied from the MICRO 2021 Program Chairs’ Message published in the proceedings, describes the significant technical activity at MICRO: “The program showcases the continued growth and energy in our field with a record number of papers accepted. The program reflects the expanding interest of the community with roughly half the program covering important topics such as security and privacy, quantum computing and domain specific acceleration (e.g., machine learning, graph processing). The program also demonstrates the importance of synergy between architecture and software and also includes conventional paper topics that continue to enhance the state-of-the-art in CPUs, GPUs, and memory/storage hierarchy by improving any combination of performance, energy, and/or reliability.”

The following quotes are from the CGO 2022 Program Chairs’ message:

“This year the conference attracted 99 submissions, 12 of which were Tools and Practical Experience papers. Based on the critical reviews of the Program Committee and subsequent online discussions, 27 high-quality research papers were accepted, with an acceptance rate of 27%. Four of the accepted papers were Tools and Practical Experience papers.The accepted papers cover a diverse range of topics with several papers having both industry and university co-authors.

The final program includes papers that focus on traditional topics such as compiler infrastructures and intermediate representations, compiler correctness, program analysis and optimization, parallelism, DSLs, as well as new topics such as ML approaches to code optimization problems, optimizations for code originating from ML tasks, performance modeling, natural language based synthesis, and more!”

CGO 2022 final program, including the Best Paper Award, can be found here: <https://conf.researchr.org/program/cgo-2022/program-cgo-2022/>

The following quotes are from the CF 2022 Program Chairs’ message:

“Out of the 68 submissions, we accepted only 18 works as full papers and 6 works as short papers for publication and presentation to the conference, and 1 work as a poster. For all papers an artifact evaluation process was made available. Additional 10 posters were selected by the poster co-chairs on a dedicated call for paper.

The technical program this year contains a broad spectrum of topics: quantum computing, neuromorphic computing, computer and accelerator architecture, compilers, runtime-systems, application optimization, applications of machine learning and artificial intelligence on computing, distributed and edge computing, security, energy-efficiency and others.”

CF 2022 final program is accessible here: <https://www.computingfrontiers.org/2022/program.html>

5.   Describe conference activity

MICRO conference (<https://www.microarch.org/>) is the flagship event sponsored by SIGMICRO. MICRO celebrated its 54th year in 2021. It was held virtually. It is growing in terms of attendance, submissions and impact.  This 54th incarnation also introduced Artifact Evaluation (<https://www.microarch.org/micro54/submit/artifacts.php>) for the first time, to encourage open science. As stated by the Program Chairs, “Artifact Evaluation promotes reproducibility of experimental results and encourages code and data sharing to help the community quickly validate and compare alternative approaches.” Both the conference program and artifact evaluation process have been deemed very successful. A record of 94 papers were presented at MICRO-54, which were selected via a rigorous process among the 430 submissions.

MICRO-55 will be held in Chicago October 1-5, 2022, in person.

SIGMICRO also sponsors (at 45%) a younger conference, CGO, which is the top conference in code optimization. CGO is considered prestigious and has been awarding its own Test of Time Award. CGO also conducts an Artifact Evaluation process, which is quite healthy and respected.

We also sponsor (at 100%) a forward-looking conference, Computing Frontiers, which enables easier expression and publication of non-traditional ideas in computer architecture, which celebrated its 19th year in 2022. CF also conducts an Artifact Evaluation process.

We also sponsor ESWEEK at a much smaller percentage (5%).

All conferences we sponsor are quite healthy in terms of organization, papers, attendance, submissions and impact.

Most recent incarnations of these conferences for this annual report year can be found here:

MICRO 2021: <https://www.microarch.org/micro54/index.php>

CGO 2022: <https://conf.researchr.org/home/cgo-2022>

CF 2022: <https://www.computingfrontiers.org/2022/>

ESWEEK 2021: <https://esweek.org/>

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

Please see our DEI efforts under question #2.

We focus on extending membership to students via the MICRO conference. The students and the community in general are encouraged to serve as volunteers. We support our younger members by enabling them to develop and implement new ideas like new workshops or educational materials or new initiatives like the Computer Architecture Student Association.

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

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 and 2021 were both tough years due to the COVID-19 crisis in terms of our outreach efforts for membership. We hope the in-person MICRO conference in October 2022 will enable us to expand our membership through in-person interactions and presence.

We also aim to also extend and diversify our volunteer base by creating new volunteer positions in SIGMICRO in 2022. We already created Awards Chair and Information Director positions. We intend to create Diversity Chair and Education Chair positions as well as some others.

Finally, we have requested the creation of two new awards, SIGMICRO Rising Star Award and SIGMICRO Dissertation Award. These are submitted for approval.

SIGMIS Annual Report July 2021 - June 2022

Submitted by: Cindy Riemenschneider SIG Chair

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

We were able to have a hybrid conference in Atlanta, GA in June 2022. There were 17 face-to-face participants and 10 members participated virtually. We had 4 doctoral students participate in the day long doctoral consortium – 2 were face-to-face and 2 were virtual. We were pleased with the conference participation considering travel difficulties and the covid risks. We retain a core group of active and contributing members and a nucleus of strong and continuing programs. We have new members joining from Germany, the US, and South America.

In 2021, The DATA BASE for the Advances in Information Systems (our SIG publication) received **79** submissions from **24** different countries across the globe. A total of **25** manuscripts were accepted for publication, and **160** different reviewers assisted with the editorial process.

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

Doctoral student participants in the consortium were from the following countries: Germany, the United Kingdom, Peru, and Iran. We had a variety of virtual participants (both phd students and faculty) from different countries. The executive leadership team consists of individuals from Singapore, Guatemala, and the US.

Additionally, the 2022 conference leadership committee consisting of 9 people was very diverse with leaders from Mexico, Germany, Guatemala, Lebanon, and the US. Additionally, our gender diversity is strong as five of the nine committee positions for the conference are held by women.

1. **Awards Given**

## SIGMIS Lifetime Achievement Award:

This year the SIGMIS Lifetime Achievement award was presented to **Dr. Fred Niederman,** Shaughnessy Endowed Professor of Management at Saint Louis University, USA. This represents the fourth time the SIG has presented the award. The award was presented at our conference in June. The announcement has been posted to our website (see Appendix A).

## SIGMIS Early Career Award:

This award was not presented at the 2022 conference.

## SIGMIS CPR Conference Awards:

* **2022 Magid Igbaria Outstanding Conference Paper of the Year Award Recipients**

Digital Nudging: A Systematic Literature Review and Future Research Directions” by Maximilian Valta, Johannes Menzel, Christian Maier, Katharina Pflügner, Marco Meier and Tim Weitzel (all from the University of Bamberg).

**The DATABASE for Advances in Information Systems**

**Annual awards, Vol. 52.**

**Best Paper:**

Treiblmaier, H., Swan, M., De Filippi, P., Lacity, M., Hardjono, T., & Kim, H. (2021). What's Next in Blockchain Research? -An Identification of Key Topics Using a Multidisciplinary Perspective. The DATABASE for Advances in Information System https://www.melanieswan.com/bio.htmls, 52(1), 27-52. <https://doi.org/10.1145/3447934.3447938>

Horst Treiblmaier, Modul University Vienna, <https://www.modul.ac.at/study-programs/phd/doctorate-in-business-and-socioeconomic-sciences/academic-community/profiles/horst-treiblmaier>

Melanie Swan, Purdue University, <https://www.melanieswan.com/bio.html>

Primavera de Filippi, National Center of Scientific Research (CNRS) Harvard University, <https://cyber.harvard.edu/people/pdefilippi>

Mary Lacity, University of Arkansas, <https://walton.uark.edu/departments/information-systems/directory/uid/mclacity/name/Mary+Lacity/>

Thomas Hardjono, Massachusetts Institute of Technology, <https://hardjono.mit.edu/>

Henry Kim, York University, <https://schulich.yorku.ca/faculty/henry-m-kim/>

**Best Senior Editor:** Daniel Beimborn, University of Bamberg

The Senior Editor of the year is Dr. Daniel Beimborn. Daniel has been a stalwart supporter of the DATA BASE for Advances in Information Systems for years and is also a valued member of the SIGMIS Computers and People Research group in Europe, a tradition from which the journal evolved and is strategically linked to its special interests in inclusion and workforce research. Daniel has handled challenging assignments with the utmost discernment, providing a mentoring approach and going beyond the call of duty in procuring thoughtful and consultative reviews from key thought leaders in the field for the jurying of important manuscripts to successful consultative conclusions.

**Best Reviewer:** Yevgen Bogodistov, Management Center Innsbruck (MCI), Austria

The best Reviewer is Yevgeni Bogodistov. Yevgeni has been that rare reviewer who goes not just the extra mile, but the extra two miles in his work supporting objective jurying of challenging submissions – submissions that offer a substantial contribution, but require substantial crafting and revision. Yevgeni’s service in support of bringing papers critical to our disciplinary discourse to print demonstrates his dedication to the objective and developmental nature of our review process at The DATA BASE for Advances in Information Systems.

**Runner-up to best reviewer:** Marko Sarstadt, Ludwig-Maximilians-University Munich

Runner up for Best Reviewer is Marko Sarstadt. Long a friend to the journal and recently a focal Guest Editor on methodical topics related to structural equation modeling, Marko provides the sort of review expertise we prize when seeking developmental reviews. His reviewer advice always results in a vastly improved manuscript and this serves to advance the greater mission of the journal.

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**

*Artificial Intelligence in Mental Health: A Qualitative Expert Study on Sensible Application Scenarios and Future Directions,* (in person)

Authors: Lea Reis and Christian Maier

SIGMIS-CPR'22: Proceedings of the 2022 on Computers and People Research Conference June 2022

Note: Proceedings are forthcoming on ACM Digital Library.

*Employee Perception of Enforced Telework in the Context of the Covid-19 Pandemic*

*Authors:* Carolin Mattes, Florian J. Meier and Sven Laumer

SIGMIS-CPR'22: Proceedings of the 2022 on Computers and People Research Conference June 2022

Note: Proceedings are forthcoming on ACM Digital Library.

**5.   Describe conference activity**

The 2022 conference was held in Atlanta, GA. This was the first in person conference in 3 years. It was wonderful to be face-to-face with colleagues from across the globe. Twenty-five papers were submitted (19 full papers and 6 research-in-progress papers) and 19 were accepted for the conference, a 76% acceptance rate. The final totals for the conference include 17 papers presented, 53 reviews and 40 authors.

The doctoral consortium consisted of 4 research in progress papers being presented by students with seven faculty mentors participating. We also had sponsorship from Prospect Press and support from the publishers for the conference and new initiatives for increasing the revenue stream and exposure of the SIG.

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

**Research grant award: - was not awarded in 2021.**

**ICIS community involvement**

We co-sponsored the ICIS conference in December 2021, where we supported the best doctoral dissertation in information systems award and staffed a booth primarily to promote our publication, DATABASE. Cindy Riemenschneider attended and made a presentation at the doctoral consortium closing dinner. She focused on the benefits of participating in ACM SIGMIS-CPR in her presentation. Tom Stafford and Deb Armstrong staffed the booth for DATABASE and distributed hand sanitizers, answered questions about the publication, and enhanced visibility of DATABASE.

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

**Finances**

The funding model for SIGMIS-CPR may require additional resources through organizational sponsorships or possibly through other creative solutions. Considering the 2022 increase in the payment to the ACM offices for overhead, personnel, conference support, etc. and the modest revenue from the digital library, the current surplus of funds will not be sustainable. Over the last 6 years, the SIG implemented new initiatives and has wisely allocated funds to those initiatives increasing visibility, awards, and the impact factor for our newsletter. 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 currently have a good amount of funds available for continued investment, but in the long run this will need to be of concern to the SIG leadership. Creative solutions for conference venues may also need to be found.

**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 and published 5 issues in 2021. Deborah Armstrong, Co-Editor in Chief, completed her term at the end of 2021. Co-Editor in Chief Tom Stafford will remain for 6 months in 2022 to assist K. D. Joshi as she transitions to her role of Co-Editor in Chief. An ad-hoc committee will be formed in 2022 to determine if the newsletter could be published in an electronic format only. This could be a major cost savings for SIGMIS-CPR.

## Social Media and Communications:

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

We are forming a Communications Committee in 2022 to assist with increasing the visibility of the SIG.

## 2022 SIGMIS Conference:

We have begun the planning for the 2023 conference as a face-to-face conference in sunny Southern California, USA. Indira Guzman and Sam Zaza will serve as the conference co-chairs. The 2024 conference will be held in Waco, Texas at Baylor University. Using a university facility should decrease the expenses for the conference and allow the conference to bring in more revenue to the SIG. Cindy Riemenschneider will serve as one of the conference co-chairs for 2024.

## 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 ’21 International Conference on Computer-Human Interaction Research and Application
2. CLOSER ’21: International Conference on Cloud Computing and Service Science
3. CSEDU ’21: International Conference on Computer Supported Education
4. DATA ’21: International Conference on Data Science, Technology and Applications
5. ENASE ’21: International Conference on Evaluation of Novel Approaches to Software Engineering
6. FEMIB ’21: International Conference on Finance, Economics, Management, and IT Business
7. HEALFINF ’21: International Conference on Health Informatics
8. ICE-B ’21: International Conference on e-Business
9. ICEIS ’21: International Conference on Enterprise Information Systems
10. ICIKS '21: International Conference on Information and knowledge Systems
11. ICIS ’21: International Conference on Information Systems
12. 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:

We welcome for both the conference and publication a wide range of MIS topical areas including ethics, all aspects of work, and IS entrepreneurship. IS personnel issues continue to be a primary focus of our conference and newsletter, especially considering the prevalence of telework, the covid issues, and considerations of what IS work will be in the future.

Based on the direction of the executive committee, two new committees will be formed in 2022. These include a Research Portfolio Committee and a Communication Committee.

**Research Portfolio Committee** – This is a new committee. The purpose of this committee is to advocate, coordinate, and administer the various research and research awards of the SIG. Specifically, the objectives of this committee are:

1. To conduct an active advocacy program to promote and support MIS research.
2. To provide advice and support in the planning of ACM SIGMIS CPR
3. To administer the annual ACM SIGMIS Research Grant
4. To administer the annual awards sponsored by ACM SIGMIS.

Damien Joseph is chairing this committee.

**Communication Committee** - This is a new committee. This committee aims to raise awareness and visibility of the ACM SIGMIS activities among the information systems community internationally in a consistent way. Specifically, the objectives of this committee are:

1. To develop a strategic communication plan and structure
2. To promote ACM SIGMIS activities through frequent and regular communication via digital channels, including social media.

Indira Guzman is chairing this committee.

## ELECTIONS:

No elections were held as the following officers are continuing to serve through June 30, 2023:

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

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

Treasurer – Indira Guzman, Trident University, California, USA

# Appendix A – Lifetime Achievement Award

**2022 ACM SIGMIS CPR**

A person in a suit and tie

Description automatically generated with low confidence

**ACM SIGMIS**

Lifetime Achievement Award

We are pleased to announce that

**Dr. Fred Niederman**, Shaughnessy Endowed Professor of Management at Saint Louis University, is the recipient of the 2022 ACM SIGMIS CPR Lifetime Achievement Award.

We are pleased to announce that Dr. Fred Niederman, Shaughnessy Endowed Professor of Management at Saint Louis University, is the recipient of the 2022 ACM SIGMIS CPR Lifetime Achievement Award. He was recognized as a Fellow of the Association for Information Systems in 2020 for outstanding contributions to the information systems discipline in terms of research, teaching, and service. He is currently serving as Editor in Chief for *Communication of AIS Journal*. He has served as Chair for the ACM special interest group on MIS (SIGMIS), Co-Program Chair for the International Conference on IS, and Preeminent Editorial Board member for *The DATA BASE for Advances in Information Systems*. His areas of research interest include: Philosophy of Science Applied to Information Systems, IT Computer Personnel, Ethics, Computer Mediated Group Systems, and Project Management.

Throughout his research career, Dr. Niederman has had 86 papers accepted by refereed journals (14 in "basket of 8" journals), 13 refereed book chapters, and 74 articles at refereed conferences. His work has been published in top journals, including *MIS Quarterly* (2), *Communications* *of ACM* (3), *Journal of AIS* (4), *Journal of Strategic Information Systems* (2), *Journal of MIS*, *Journal of Information Technology*, and *European Journal of Information Systems*, among others. His work has been downloaded more than eight thousand times from the AIS digital library and more than thirty thousand times from the ACM digital library.

His work on the co-evolution of IT worker skills and generations of technology platforms has been recognized as a "publication of the year" by AIS in 2015 and inaugural *Communications of AIS*, Paul Gray thought-provoking paper of the year in 2014. More recently, his 2019 paper with Salvatore T. March, "Broadening the Conceptualization of Theory in the Information Systems Discipline: A Meta-Theory Approach," received the best paper award for *The Data Base for Advances in Information Systems*. He was the winning annual senior editor of the best JAIS paper of the year in 2016 and 2018.

Dr. Niederman has contributed to the IS field for more than 30 years. He has served as Senior Editor for *Journal of AIS*, Editorial Board Departmental Co-Editor for *Project Management Journal*, and Associate Editor for *Communications of AIS*, *Transactions on MIS*, *Journal of Global Information Systems*, *Journal of International Management*, and *Human Resource Management*. He has also served as the first official "facilitator" for the AIS College of Senior Scholars and was elected to the "circle of compadres" for the KPMG Ph.D. Project serving to bring more minority scholars into MIS academia. Dr. Niederman has taught more than 3000 students in more than 120 delivered courses. Additionally, he has served as organizer of the Magid Igbaria conference paper award, ACM SIGMIS lifetime and emerging scholar awards, and initiator of the annual research grants program with ACM SIGMIS.

**SIGMM Annual Report year 2022**

**July 1, 2021 to June 30, 2022**

**Prepared by SIGMM Chair (Alberto Del Bimbo)**

**August 15th, 2022**

**SIGMM MISSION**

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

**2021 SIGMM AWARDS**

Starting 2021 SIGMM gives out four awards per year. In 2021 these were as follows:

 **SIGMM *Technical Achievement Award for Outstanding Technical Contributions to Multimedia Computing, Communications and Applications***

The SIGMM Technical Achievement Award Committee was: Phoebe Chen (Chair), Yong Rui, John R. Smith, Mubarak Shah, Alberto Del Bimbo, Miriam Redi

The recipient was Prof. Jiebo Luo in recognition of *his outstanding, pioneering and continued research contributions in the areas of multimedia content analysis and social media analytics, and for outstanding and continued service to the multimedia community*.

 **SIGMM *Rising Star* Award**

The SIGMM Rising Star Award Committee was: Phoebe Chen (Chair), Yong Rui, John R. Smith, Mubarak Shah, Alberto Del Bimbo, Miriam Redi. The recipient was Jingkuan Song for *his significant contributions in Multimedia Compact*

*Representation and Analysis.*

 **SIGMM Award for *Outstanding PhD Thesis in Multimedia Computing, Communications and Applications***

The SIGMM Award for Outstanding PhD Thesis Committee was**:** Phoebe Chen (Chair)**,** Alberto Del Bimbo, Miriam Redi, Tat-Seng Chua, John R. Smith, Mubarak Shah.

The recipient was Kevin Spiteri for a thesis entitled *Video Adaptation for High-Quality Content Delivery* at the University of Massachusetts Amherst, USA.

 **SIGMM *Test of Time Paper* Award**

The SIGMM Test of Time Paper Award Committee was: Klara Nahrstedt, Mohan Kankanhalli, Shih-Fu Chang, John R. Smith,Yang Yang.

The recipient was Thomas Stockhammer, for the paper *Dynamic Adaptive Streaming over HTTP - Standards and Design Principles*, in Proceedings of the 2nd ACM Conference on MultimediaSystems, MMSys, pp. 133-144, 2011.

https://dl.acm.org/doi/10.1145/1943552.1943572 (*Area MM Systems & Networking*)

Honorable mentions were given to:

o Florian Eyben, Martin Wöllmer, and Björn Schuller, for the paper *Opensmile: The Munich versatile and fast open-source audio feature extractor.* in Proceedings of the 18th ACMInternational Conference on Multimedia, pp. 1459-1462, 2010.

https://dl.acm.org/doi/10.1145/1873951.1874246 (*Area MM Interfaces & Applications*)

o Nikhil Rasiwasia, Jose Costa Pereira, Emanuele Coviello, Gabriel Doyle, Gert R.G. Lanckriet, Roger Levy, and Nuno Vasconcelos for the paper *A new approach to cross-modal multimedia retrieval.* in Proceedings of the 18th ACM International Conference on Multimedia, MM &#39;10, pp. 251-260, 2010.

https://dl.acm.org/doi/10.1145/1873951.1873987 (*Area MM Content Analysis, Retrieval, Query*)

o Jan Kodovsky̒ and Jessica Fridrich, for the paper *Calibration revisited,* in Proceedings of the 11th ACM Workshop on Multimedia and Security, MM&Sec &#39;09, pp. 63-74, 2009.

https://dl.acm.org/doi/10.1145/1597817.1597830 (*Area MM Security and Privacy*)

**2021 ACM TOMM NICHOLAS GEORGANAS BEST PAPER AWARD**

At ACMMM’21, SIGMM presented the 2021 ACM Transactions on Multimedia Computing, Communications and Applications (TOMM) Nicolas D. Georganas Best Paper Award to the paper:

*"Do Users Behave Similarly in VR? Investigation of the User Influence on the System Design"*, authored by: Silvia Rossi, Cagri Ozcinar, Aljosa Smolic and Laura Toni

**SIGMM SPONSORED CONFERENCES**

In 2021-22 SIGMM sponsored 6 conferences fully and 6 conferences partially. Fully sponsored conferences were held as hybrid events. Globally, they received satisfactory attendance, some of them with record number attendees. There was high attention to maintain high scientific quality and fairness in the review process. Fully sponsored summaries:

 **ACMMM ACM Multimedia**

o ACMMM’21 Oct 20-24, 2021, Chengdu, China. Run as hybrid event.

General Chairs: Heng Tao Shen, Yueting Zhuang, John R. Smith. Program chairs:

Yang Yang, Pablo Cesar, Florian Metze, Balakrishnan Prabhakaran.

Participants: 1088 on-site (record number)

Acceptance rate: 27.9% (global); 9.2 % (orals); 18.7% (posters).

 **ACMMM Asia ACM Multimedia Asia**

o ACMMM ‘21 Asia Gold Coast, Australia, Dec 1-3, 2021. Run as hybrid event

General Chairs: Chang-wen Chen, Helen Huang, Jun Zhou; Program Chairs: Tatsuya Harada, Jianfei Cai, Wu Liu, Dong Xu.

1st time to hold a joint Twin-City (Gold Coast/Shenzhen) PhD school.

Participants: not available

Acceptance rates: 49% (global); 32,7% (full papers); 16,3%(short papers).

 **MMSys ACM Multimedia Systems Conference**

o MMSys’21, Sept 28-Oct 1 2021, Istanbul, Turkey. Run as hybrid event.

General Chairs: Ozgu Alay, Cheng Hsin Hsu, Ali C. Begen. Program Chairs: Lucile

Sassatelli, Feng Qian.

Participants: 50 (on-site), 330 (max concurrently watching the live stream).

SIGMM Awards: 7 student travel grants, 7 diversity travel grants, 2 Carer awards

Acceptance rate: 32% (18/55) research track

o MMSys’22, June 14-17, Athlone, Ireland. Run as hybrid event.

General Chairs: Nial Murray, Mylene Farias, Gwendal Simon. Program Chairs: Mario

Montagud, Irene Viola.

Participants: 200 (on-site)

Acceptance rate: 34% (global).

 **ICMR ACM International Conference on Multimedia Retrieval**

o ICMR’21, Nov 16-19, 2021, Taipei, Taiwan. Run as virtual event.

General Chairs: We-Huang Cheng, Mohan Kankanhalli, Meng Wang. Program Chairs: Wei-Ta Chu, Jiaying Liu, Marcel Worring.

Participants: not available

Acceptance rates: 35,6% (global); 35,8% (full papers); 34,9% (short papers)

 **IMX ACM International Conference on Interactive Media Experiences**

o IMX'21 June 21-23, 2021. New York City, USA. Run as virtual event.

General Chairs: D. Yvette Wohn, Vinoba Vinayagamoorthy. Program Chairs: Louise Barkhuus, Guo Freeman, Niall Murray.

Participants: not available

Acceptance rates: not available

o IMX’22, June 22-24, 2022, Aveiro, Portugual. Run as hybrid event.

General Chairs: Debora Saade, Jesus Gutierrez. Program Chairs: Asreen Rostami, Katrien De Moor, George Ghinea.

Participants: 190

Acceptance rate: 40% (global)

 **MHV ACM Mile High Video**

o MHV’22, Mar 1-3, 2022 Denver, USA. The inaugural ACM Mile High Video

conference. Run as hybrid event.

Program Chairs: Christian Timmerer; Dan Grois.

Participants: 275, 1000 (max concurrently watching the live stream).

Acceptance rate: 50% (global)

**SIGNIFICANT PAPERS AT ACMMM’21**

The SIGMM flagship conference, ACM Multimedia 2021 presented the following awards for papers presented at the conference:

 ***Best Paper Award* :** "Video Background Music Generation with Controllable Music Transformer"

Shangzhe Di, Zeren Jiang, Si Liu\*, Zhaokai Wang, Leyan Zhu, Zexin He, Hongming Liu, Shuicheng Yan

 ***Best Student Paper Award*:** "aBio: Active Bi-Olfactory Display Using Subwoofers for Virtual Reality", You-Yang Hu\*, Yao-Fu Jan, Kuan-Wei Tseng, You-Shin Tsai, Hung-Ming Sung, Jin-Yao Lin, Yi-Ping Hung

 ***Best Demo Award*:** "ViDA-MAN: Visual Dialog with Digital Humans",

Tong Shen\*, Jiawei Zuo, Fan Shi, Jin Zhang, Liqin Jiang, Meng Chen, Zhengchen Zhang, Wei Zhang, Xiaodong He, Tao Mei

 ***Best Open Source Award*:** "X-modaler: A Versatile and High-performance Codebase for Crossmodal Analytics", Yehao Li, Yingwei Pan\*, Jingwen Chen, Ting Yao, Tao Mei

**SIGNIFICANT INITIATIVES TO IMPROVE SIGMM ROLE AND BROADEN PARTICIPATION**

In 2021-22 SIGMM continued its effort in supporting attendance for students with particular attention to underrepresented and marginalized countries. At the same time, we supported initiatives for projects and events of interest for our community. For year 2023 SIGMM increased budget allocation for travel support and special projects respectively to 100.000 and 40.000 US$.

 **Support for student travel**

SIGMM provided support for student travel through grants, at all of our SIGMM-sponsored conferences. In 2021 SIGMM rearranged the way student travel grants are awarded by centralizing the process. In order to have full control of the total amount given for travel grants, in 2022 we recommended the committee to allocate budgets to conferences proportionally to the historical conference attendance.

 **Funding of special initiatives**

As in previous years, in 2022 SIGMM had a call for proposals for funding of special initiatives of interest for our community.

SIGMM funded the following special projects and events:

o financial support for 1-year feasibility study for streaming media extensible reusable open streaming evaluation and benchmarking platform (proposed by Ali Begen)

o financial support for MediaEval’22 workshop (proposed by Martha Larsson)

o financial support for CBMI’22 in cooperation conference (proposed by Werner Bailer)

SIGMM funded the following initiatives to improve inclusion and equality and diversity:

o financial support for MMSys’22 funding travel support of marginalized and

underrepresented country non-student participants and panel on “*Equality and Diversity*”.

o financial support for IMX’22 funding travel support of marginalized and underrepresented country non-student participants and panel on “*Diversity in Metaverse*”.

o financial support for *Multi-City PhD-School* at ACMMM Asia ’22 to involve more students and minority attendees with satellite events bringing students from multiple cities for idea exchange and research training.

 **Openess**

SIGMM started Open Review first initiative on ACM MM 2022 as an experiment to improve the overall quality and reputation of our conferences.

 **Workshops and meetings**

SIGMM continued the effort to physically co-locate conferences and other events, namely workshops co-located with conferences and TPC meetings for conferences at other conference, thus saving travel costs for the community.

 **Social media**

SIGMM continued the effort in social media activity encouraging social media interaction at our events where we invite conference attendees to post on social media about papers, demos, talks, etc. that they think are most thought provoking and forward looking at the event.

**ACM SIG BYLAWS**

To improve diversity, SIGMM approved a Bylaws revision proposing that “*chair and vice-chair run for the offices in pair*”, a way to encourage diversity without necessarily having to put quota.

**FINANCIALS**

For the first time SIGMM experimented a financial loss at its flagship conference ACMMM’21. This was due to unplanned changes in the organization due to the covid pandemic, moving the conference from on-line to hybrid, and also to a not careful management of financial aspects. This could impact negatively on sponsoring future SIGMM initiatives. SIGMM also noticed that it often occurs that conference chairs are not fully aware of the procedures to run an ACM sponsored conference. A guide letter has been prepared for the appointed chairs of future conferences.

**ISSUES FOR SIGMM IN THE NEXT 2-3 YEARS**

While hoping that critical times of pandemic are going to an end, we believe that SIGMM activity will go back to full normality with effective dissemination of scientific results, training and development of early career researchers, recognition of career progression and achievements at all levels. In terms of organization, we expect that the hybrid mode will be the established mode for all the future events. This would require SIGMM to coordinate the acquisition of standard tools for all SIGMM conferences for more effective management of on-line connectivity.

SIGMM will continue its commitment to improve the diversity of the community, looking at it as an essential aspect to maintaining our importance and relevance, including diversity in gender, in geographical location, and in many other facets. Particularly we are committed to facilitate the inclusion of underrepresented people and researchers from disadvantage countries.

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 realworld datasets otherwise unavailable to us, as well as being a threat to the balance between corporate influence and independence. We aim at strengthening relationships between industry and SIGMM research community fostering new initiatives and events that will bring the two communities closer. The adoption of the Mile High Video Conference as SIGMM-sponsored conference is an important step in this direction.

SIGMOBILE FY'22 Annual Report

**Submitted By: Lili Qiu**

# July 2021 – June 2022

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. Lili Qiu (Microsoft Research Asia/University of Texas at Austin, USA)
* Vice Chair: Prof. Falko Dressler ([Technische Universität Berlin](https://www.tu.berlin/), Germany)
* Treasurer: Prof. Yingying Chen (Rutgers University, New Brunswick, USA)
* Secretary: Prof. Mo Li (Nanyang Technological University, Singapore)
* Past Chair: Prof. Marco Gruteser (Google / Rutgers University, New Brunswick, 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. 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. 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 also sponsored 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**: Andrea Goldsmith (Princeton), in recognition of her outstanding contributions to multi-antenna wireless communications through fundamental research, successful entrepreneurship, and inspired leadership.

**Distinguished Service Award**: Not given.

**Rockstar Award**: Prof. Fadel Adib (MIT), in recognition of his significant contributions For his significant innovations in using wireless networks for physical sensing, developing underwater backscatter networks, and batteryless microchips for biomedical monitoring.

**Dissertation Award**: Dr. Vikram Iyer for his dissertation, titled "Creating the Internet of Biological and Bioinspired Things" at the University of Washington. Runner up: Dr. Mingmin Zhao for his dissertation, titled "Wireless Sensing with Machine Learning: Through-Wall Vision & Contactless Health Monitoring" at MIT.

The **SIGMOBILE Test of Time award** was selected by a committee chaired by Prof. Prof. Romit Roy Choudhury (UIUC). The committee comprising Prof. Andrew Campbell (Dartmouth), Prof. Gil Zussman (Columbia), Prof. Joerg Widmer (IMDEA), Dr. Bozidar Radunovic (Microsoft Research), Yasamin Mostofi (University of Santa Barbara) selected the following articles:

["Argos: Practical Many-Antenna Base Stations](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Fsigmobiletot22.hotcrp.com%2Fpaper%2F1&data=05%7C01%7C%7Cba7312c64f194930741008da4757ec5d%7C31d7e2a5bdd8414e9e97bea998ebdfe1%7C0%7C0%7C637900740201295630%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=rm3zgvABCnhGg6rJWZbaD%2Bpp4YXis%2BWc7EQcKst5cMo%3D&reserved=0).” Clayton Shepard (Rice), Hang Yu (Rice), Narendra Anand (Rice), Li Erran Li (Bell Labs),, Thomas Marzetta (Bell Labs),, Richard Yang (Yale),, and Lin Zhong (Rice).

“The case for VM-Based Cloudlets in Mobile Computing”. Mahadev Satyanarayana (Carnegie Mellon University), Paramvir Bahl (Microsoft Research), Ramón Cáceres (AT&T Research) and Nigel Davies (Lancaster University).

# Significant Papers (Research Highlight Papers)

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

Low-latency Speculative Inference On Distributed Multi-modal Data Streams (MobiSys 2021)

Tianxing Li (Michigan State), Jin Huang (UMass), Erik Risinger (UMass), and Deepak Ganesan (UMass) <https://dl.acm.org/doi/10.1145/3458864.3467884>

mSAIL: Milligram-Scale Multi-Modal Sensor Platform for Monarch Butterfly Migration Tracking (MobiCom 2021)

Inhee Lee, Roger Hsiao, Gordy Carichner, Chin-Wei Hsu, Mingyu Yang, Sara Shoouri, Katherine Ernst, Tess Carichner, Yuyang Li, Jaechan Lim, Cole R. Julick, Eunseong Moon, Yi Sun, Jamie Phillips, Krisi L. Montooth, Delbert A. Green, Hun-Seok Kim, David Blaauw.

<https://dl.acm.org/doi/10.1145/3447993.3483263>

HeadFi: Bringing Intelligence to All Headphones (MobiCom 2021)

Xiaoran Fan, Longfei Shangguang, Siddharth Rupavatharam, Yanyang Zhang, Jie Xiong, Yunfei Ma, Richard Howard.

<https://dl.acm.org/doi/10.1145/3447993.3448624>

BioFace-3D: Continuous 3D Facial Reconstruction Through Lightweight Single-ear Biosensors (MobiCom 2021)

Yi Wu, Vimal Kakaraparthi, Zhuohang Li, Tien Pham, JIan Liu, Phuc Nguyen. <https://dl.acm.org/doi/10.1145/3447993.3483252>

# Conference Activity

After 2 years of mostly virtual conferences, In 2021 some of SIGMOBILE conferences returned to in-person or offered an in-person option. MobiCom and SEC were in-person and MobiHoc and Sensys were hybrid, while MobiSys, UbiComp, HotMobile remained virtual. We would like to express our sincere appreciation for the conference organizers for their dedication and great efforts especially during this challenging time.

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 23nd The International Joint Conference on Pervasive and Ubiquitous Computing (Ubicomp 2021) was held during September 21-26, 2021 was organized by general chairs Afsaneh Doryab (University of Virginia, USA), Qin Lv (University of Colorado Boulder, USA), Michael Beig (Karlsruhe Institute of Technology, Germany), as well as technical program chairs Christos Efstratiou (University of Kent, UK) and Uichin Lee (KAIST, South Korea).

The 27th Annual International Conference on Mobile Computing and Networking (MobiCom 2021) was held during March 28 - April 1, 2022 organized by general chair David B. Johnson (Rice University, USA) as well as well as technical program chairs Sung-Ju Lee (KAIST, Korea) and Chunyi Peng (Purdue University, USA).

The International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (MobiHoc 2021) was held July 26 - 29, 2021 organized by general chairs Huadong Ma (Beijing University of Posts and Telecommunications, China), Xinbing Wang (Shanghai Jiaotong University, China), and Yunxin Liu (Tsinghua University, China), as well as technical program chairs Edmund Yeh (Northeastern University, USA) and Xin Liu (University of California, Davis, USA).

The Sixth ACM/IEEE Symposium on Edge Computing (SEC) was held Dec 14-17, 2021 organized by general chairs Ming Zhao (Arizona State University) and Haris Volos (DENSO), as well as technical program chairs Eyal de Lara (University of Toronto) and Fred Douglis (Perspecta Labs).

The 19th ACM Conference on Embedded Networked Sensor Systems (SenSys 2021) was held Nov 15-17 organized by general chairs Jorge Sá Silva (University of Coimbra, Portugal), Fernando Boavida (University of Coimbra, Portugal) and General Vice-Chair André Rodrigues (University of Coimbra, Portugal), as well as technical program chairs Rong Zheng (McMaster University, Canada) and Andrew Markham (University of Oxford, UK).

The 23nd International Workshop on Mobile Computing Systems and Applications (ACM HotMobile 2022) was held March 9-10 organized by general chair Robert LiKamWa (Arizona State University, AZ) as well as technical program chair Urs Hengartner (University of Waterloo, Canada).

Pandemic has posed significant challenges to conference organizers. As the pandemic situation started to improve, we have seen more conferences have offered an in-person option. Meanwhile, we also recognize that in-person attendance is still challenging for many people, especially those residing in regions with travel restrictions as well as those with limited financial resources. We will continue the dialog with the conference organizers and attendees to identify ways to best support our community for the next decade.

# Special Projects and Programs

1. **Distinguished Lecture Series**

SIGMOBILE launched a distinguished lecture series to offer more learning and research sharing opportunities during pandemic. Prof. Dina Katabi presented an inaugural lecture: “ Monitoring People and their Vital Signs using Radio Signals and Machine Learning” in Feb. 2022, and Daniel Ramage presented “Cross-Device Federated Learning Analytics at Google” in Apr. 2022. Prof. Shyam Gollakota will present “Creating intelligent acoustic systems for healthcare, earables, and voice assistants” in Sept. 2022.

# CEP Invited Talk

Dr. Mallesham Dasari has led the development of the SIGMOBILE community engagement program <https://www.sigmobile.org/cep/index.html> to provide a platform for the community members to engage in various educational materials, programs such as broadening the community, developing social gatherings channels, and general discussions with successful researchers. The Program Committee includes Mallesham Dasari, Andra Lutu, Elahe Soltanaghaei, Jiasi Chen, Ling Zhong, Lili Qiu, Rajesh K. Balan, Suman Banerjee, Tingjun Chen. Over the past one year, they have initiated several activities ranging from game nights at conferences, hosting invited technical talks over Zoom on a bi-weekly basis, created and maintained CEP webpage as well as a slack channel that helped in connecting many SIGMOBILE members online. The talk videos have been released online on the CEP webpage. Below are some of the activities that have taken place over the past year:

* + Game night at MobiSys 2021: <http://www.people.vcu.edu/~barahoueipash/SMS/program.html>
  + CEP Invited talk series Feb 2022 - June 2022: <https://www.sigmobile.org/cep/events.html>
  + Slack:

<https://join.slack.com/t/acmsigmobile/shared_invite/zt-17fhhhn8k-I176UuQevt0VzWaYxlOiYQ>

# Community grants

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. For details, please consult the [solicitation](https://www.sigmobile.org/grav/get-involved/community-grant). Through rigorous review process, we have funded the following projects. The last project has been renewed for year 2.

"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.

# GetMobile

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.

# Youtube

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. There are 1.82K subscribers and 286,827 views. 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.

# Summary

SIGMOBILE is a well-supported organization. It remains both financially and technically strong. It has continued to support the Mobile computing and wireless networking community to produce high-impact research, organize valuable conferences and workshops, provide enrichment activities, connect members across the world, and offer financial support. This would not be possible without the strong support of many volunteers. We’d like to take this opportunity to thank all of them for their great effort,

ACM SIGMOD Annual Report

Submitted By: Divyakant Agrawal

**July 1, 2021 and June 30, 2022**

# Mission Statement

ACM SIGMOD is organized and is operated exclusively for educational, scientific, and technical purposes in its specialty, which is data management. We live in a data-driven society where decisions and science are increasingly driven by the insights gathered from analysis of relevant data, this societal transformation places us squarely in the center of technology disruptions.

# State of ACM SIGMOD

ACM SIGMOD remains a vibrant special interest group that brings together academics, professionals, researchers, and students who are all interested in different aspects of data. For its members, ACM SIGMOD publishes a quarterly newsletter viz. ACM SIGMOD Record and organizes an annual conference ACM SIGMOD International Conference on Management of Data which is typically held in the month of June. The conference is jointly held with another conference on Principles of Database Systems as well as several pre-conference and post-conference workshops. ACM SIGMOD 2020 and ACM SIGMOD 2021 conferences were held in a virtual format due to the travel restrictions and the COVID-19 pandemic. ACM SIGMOD 2022 this year was held in Philadelphia in a hybrid format. The overall conference participation was about 900 registrations with approximately 550 attendees participating in the conference in the in-person mode. Overall ACM SIGMOD remains healthy and vibrant and in spite of the challenges due to the pandemic, we are making slow and steady progress towards normalization.

# Diversity, Equity, and Inclusion

ACM SIGMOD in collaboration with VLDB has chosen to establish independent organizations to oversee the issues of diversity, equity, and inclusion. These organizations are:

* [DBcares](https://sigmod.org/sigmod-policies/dbcares-policy/): The mission of DBCares is to create an inclusive and diverse Database community with zero tolerance for abuse, discrimination, or harassment.

## [Diversity and Inclusion in Database Conferences](https://dbdni.github.io/): Make diversity and inclusion a first class citizen in database conferences.

DBCares was co-started by VLDB Endowment and Sigmod Executive Committees in October 2018. Both these organizations operate autonomously and advise on DEI issues to the SIGMOD Executive Committee. Furthermore, Diversity and Inclusion in Database Conferences group actively engages with SIGMOD conference organizers and plans D&I activities during the conferences such as Conference Keynotes on D&I, D&I panels, and travel sponsorship to students from disadvantaged groups.

# Awards and Award Recipients

### 2022 ACM SIGMOD Jim Gray Doctoral Dissertation Award.

* Chenggang Wu, University of California at Berkeley: The Design of Any-scale Serverless Infrastructure with Rich Consistency Guarantees (Winner)
* Kexin Rong, Stanford University: Improving Computational and Human Efficiency in Large-scale Data Analytics (Honorable Mention)
* Pingcheng Ruan, National University of Singapore*:* Blockchains: Novel Data Systems and Beyond (Honorable Mention)

### 2022 ACM SIGMOD Systems Award:

To recognize the development of a software or hardware system whose technical contributions have had significant impact on the theory or practice of large-scale data management systems.

* Apache Spark is an innovative, widely-used, open-source, unified data processing system encompassing relational, streaming, and machine-learning workloads.
  + The award recognizes the contributions of Michael Armbrust, Tathagata Das, Ankur Dave, Wenchen Fan, Michael J. Franklin, Huaxin Gao, Maxim Gekke, Ali Ghodsi, Joseph Gonzalez, Liang-Chi Hsieh, Dongjoon Hyun, Hyukjin Kwon, Xiao Li, Cheng Lian, Yanbo Liang, Xiangrui Meng, Sean Owen, Josh Rosen, Kousuke Saruta, Scott Shenker, Ion Stoica, Takuya Ueshin, Shivaram Venkataraman, Gengliang Wang, Yuming Wang, Patrick Wendell, Reynold Xin, Takeshi Yamamuro, Kent Yao, Matei Zaharia, Ruifeng Zheng, and Shixiong Zhu

### 2022 ACM SIGMOD Contributions Award

For outstanding and sustained services to and promotion of the database field through activities such as education, conference organization, journals, standards, and research funding.

* Christian S. Jensen, Professor of Computer Science, Aalborg University, Denmark
  + For extensive, high-quality service to the database research community, including as Editor-in-Chief of ACM TODS and The VLDB Journal for 12+ years.

### 2022 ACM SIGMOD Edgar F Codd Innovations Award

For innovative and highly significant contributions of enduring value to the development, understanding, or use of database systems and databases.

* Dan Suciu, Professor of Computer Science at the University of Washington
  + For lasting contributions to the foundations of novel data management trends.

### 2022 ACM SIGMOD Test-of-Time Award

For the paper from the SIGMOD proceedings 10 years prior that has had the most impact over the intervening decade.

* NoDB: Efficient Query Execution on Raw Data Files, Ioannis Alagiannis, Renata Borovica, Miguel Branco, Stratos Idreos, and Anastasia Ailamaki

# New areas at SIGMOD Conference

Effective SIGMOD’2022, we have created a new track on Data Science targeting the entire data life cycle of real applications. This data life cycle encompasses databases/data management/data systems/data engineering often leveraging statistical, Machine Learning and Artificial Intelligence methods and using massive and heterogeneous collections of potentially messy datasets. Data science papers study phenomena at scales and granularities never before possible. Such papers are expected to focus on data-intensive components of data science pipelines; and solve problems in areas of interest to the community (e.g., data curation, optimization, performance, storage, systems). We solicit submissions that describe deployed solutions to data science pipelines as well as submissions that describe fundamental experiences and insights from evaluating real-world data science problems.

# SIGMOD Conference Activity

Our annual conference ACM SIGMOD’2022 was held in hybrid mode at Philadelphia in June 2022. We are happy to report that the number of in-person attendees exceeded our budgeted target of 500 attendees. As the impact of the pandemic diminishes, our expectations are that the SIGMOD conference next year will have normal participation.

We are also glad to report that the fiscal health of ACM SIGMOD remains robust primarily because of very strong corporate sponsorship over the past few years. We are increasingly finding ways to bring value of ACM SIGMOD to its members (both regular and student members) as well as our corporate sponsors.

# Special Projects and Non-conference Programs

ACM SIGMOD has approved funding an annual budget to the Diversity and Inclusion in Database Conferences group for diversity and inclusion initiatives.

# Key Challenges

* We recognize that the pandemic has permanently altered the model of social and professional interaction. For example, students now expect that classroom teaching will always be in a hybrid mode enabling them the opportunity to choose synchronous vs asynchronous mode of learning. In the same vein, our anticipation is that at least for a foreseeable future, we will need to run conferences using the hybrid mode. Our experience is that running a conference in a hybrid mode introduces its own set of challenges and the current platforms are not able to seamlessly integrate in-person and virtual participation. This remains our foremost concern and we will continue to work on it.
* The membership data indicates that there has been sharp declines in the number of SIGMOD members. Although some of this decline can be attributed to the pandemic, we feel that this is an area that needs to be addressed. We will work with the ACM and other SIGs to discuss ways to increase our membership.
* As an organization we have to address the Diversity, Equity, and Inclusion issues at different levels. We would like to initiate special projects in this context but the challenges are first to ensure we have a fiscal variability and second the projects have to be contextualized ina local setting.

1. Describe your efforts related to Diversity, Equity, and Inclusion.
2. Provide a list of awards and recipients
3. List significant papers on new areas that were published in proceedings

5. Describe conference activity

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.

SIGOPS Annual Report July 2021 – June 2022

**Submitted By: Shan Lu**

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 third 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.

SIGOPS has three active chapters, EuroSys, SIGOPS de France (ASF), and ChinaSys, that are continuing very 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 “Observability” (Volume 56, Number 1, July 2022).

Tianyin Xu (UIUC), Akshitha Sriraman (CMU), Zhaoguo Wang (Shanghai Jiaotong University) currently serve as the Chief Editors of SIGOPS Blog (<https://www.sigops.org/blog/>). There has been roughly one blog every month, discussing both technical topics and non-technical topics like how to conduct job search.

SIGOPS encourages participation in conferences and career building activities for young members of the community. For example, SIGOPS has continued to offer travel grant support to many of its sponsored or co-sponsored conferences, and has supported low or free registration fees for ACM/SIGOPS student members at several of its sponsored or co-sponsored conferences.

# Awards

The SIGOPS Dennis M. Ritchie Doctoral Dissertation Award 2021 committee was run by [Arvind Krishnamurthy](https://www.cs.washington.edu/people/faculty/arvind) (Chair, University of Washington), Emery Berger (UMass), and Angela Demke Brown (University of Toronto). The award went to Marios Kogias’s "[Operating System and Network Co-design for Latency-Critical Datacenter](https://infoscience.epfl.ch/record/279547?ln=en) [Applications](https://infoscience.epfl.ch/record/279547?ln=en)" (EPFL), advised by Edouard Bugnion. Oana Balmau (Univ. of Sydney) and Xingda Wei (Shanghai Jiaotong Univ.) are the runner ups.

The Mark Weiser Award 2021 was awarded to Michael Freedman, Princeton University. The committee consisted of Eddie Kohler (Harvard University), Yuanyuan Zhou (UCSD), Andrea Arpaci-Dusseau (Chair, 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 “[Onix: A Distributed Control Platform for Large-scale Production Networks](https://dl.acm.org/doi/10.5555/1924943.1924968)*”,* which was published at OSDI 2010 by Teemu Koponen, Martin Casado, Natasha Gude, Jeremy Stribling, Leon Poutievski, Min Zhu, Rajiv Ramanathan, Yuichiro Iwata, Hiroaki Inoue, Takayuki Hama, and Scott Shenker.

At the EuroSys branch, Rüdiger Birkner (ETH) was the recipient of the EuroSys Roger Needham Ph.D. Award 2022, and Ant Rowstron (Microsoft Research Cambridge) was the recipient of the EuroSys Lifetime Achievement Award 2021.

At the ASF branch, [Agathe Blaise](https://www.lip6.fr/actualite/personnes-fiche.php?ident=D2172) and [Redha Gouicem](https://redha.gouicem.fr/) won the ASF/GDR RSD best thesis award; Razvan Stanica and Alain Tchana are co-winners of the GDR RSD Best Researcher 2021 award in the junior category; Gilles Muller is the winner of the 2021 prize for the best researcher of the GDR RSD in the senior category.

At the ChinaSys branch, Xingda Wei, Ting Yao, and Youmin Chen won the ChinaSys Distinguished Dissertation Award 2021, Cheng Li and Zhaoguo Wang won the ChinaSys Rising Star Award 2021.

# Conferences

* SOSP 2021 was held virtually in October 2021, with close to 900 participants. Nickolai Zeldovich (MIT) and Robbert van Renesse (Cornell) served as Program Chairs; Anthony Joseph (U.C. Berkeley) and Vijay Chidambaram (UTexas) served as the General Chairs; Jialin Li (National Univ. of Singapore) and Tianyin Xu (UIUC) serving as the virtual platform chairs.
* SIGOPS continued the tradition to sponsor a Diversity workshop at SOSP 2021. This year’s Diversity workshop was co-chaired by Amy Tai (VMware) and Natacha Crooks (U.C. Berkeley).
* The SIGOPS Asia-Pacific Workshop on Systems (APSys) was held in August 2022 virtually, chaired by Guoqing (Harry) Xu (UCLA) and Marco Serafini (UMass Amherst). Bingsheng He from National University of Singapore served as the General Chair. APSys is 100% sponsored by SIGOPS.
* HotStorage was previously sponsored by the USENIX organization. Starting from 2021, it has been sponsored by ACM SIGOPS. HotStorage 2021 and HotStorage 2022 have both been held successfully virtually, with a healthy number of online participants, number of papers, and amount of industrial sponsorship.
* A few other SIGOPS-sponsored or -co-sponsored conferences have successfully been held in person or in a hybrid mode in the past 12 months: SoCC (co-sponsored with SIGMOD) 2021 in Seattle; SYSTOR 2022 in Haifa, Israel (fully sponsored by SIGOPS); ASPLOS 2022 in Lausanne, Switzerland (co-sponsored with SIGARCH and SIGPLAN); PODC (co-sponsored with SIGACT) 2022 in Salerno, Italy; etc.
* In-cooperation events included USENIX venues FAST 2022, NSDI 2022, and OSDI 2022.
* The EuroSys chapter continues to organize the highly successful annual EuroSys conference. Most recently, EuroSys 2022 was held in-person in Rennes, France.
* ChinaSys chapter and ASF chapter have both continued to organize successful local workshops and schools, including two ChinaSys workshops in December 2021 (in-person) and in June 2022 (virtual), a ASF/Gdr RSD winter school in January 2022, etc.

# Some of the Recent Initiatives

* A number of initiatives that were started in recent SOSPs were successfully continued at SOSP 2021. o Artifact evaluation was 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 was co-chaired by Baris Kasikci (University of Michigan) and Aurojit Panda (New York University), with great participation from not only graduate students but also undergraduate students.

* + A student mentoring program was successfully run at SOSP for the first time, organized by Andrew Quinn (UCSC), Junwen Yang (Facebook), and Yongle Zhang (Purdue). More than 100 students participated and got connected with more than 50 mentors.
* A climate survey was conducted at SOSP 2021, led by the chair Dilma da Silva (Texas A&M) and SIGOPS vice-chair Phillip Stanley-Marbell (Cambridge). We are exploring how to get a standard climate survey implemented at all future system conferences.
* Some of the SIGOPS sponsored or co-sponsored conferences (e.g., EuroSys and ASPLOS) changed to have multiple paper-submission deadlines every year in the past 12 months.

# Key topics to address in the coming year:

* How to broaden participation and promote inclusion remains a key issue. SIGOPS has worked on this through various Diversity Workshops, travel grant programs, and other initiatives. However, sustained effort will be needed. Particularly, we are working with industry collaborators to establish diversity & inclusion surveys at our conferences, and to establish a regular “diversity chair” role at our conferences.
* The pandemic has not ended yet, while our conferences are moving back to in-person mode. Under this circumstance, some conference organizers are concerned with the budget of their in-person conferences and request to roll over their conferences’ profit from 2020 and 2021 into 2023 and beyond. Currently, SIGOPS has approved all these requests. However, at some point, we need to discuss with conference organizers and potentially stop such roll over.
* Some in the community have voiced concern with the frequency and acceptance rate of SIGOPS’s flagship conference, SOSP. There is an ongoing discussion about whether we should change the frequency of this conference, currently every other year, and how frequency (and aggregate program size) interact with community reviewing load and the need to maintain the conference’s high peer-review and program quality. We expect to make a decision on this topic by the end of this calendar year.

**SIGPLAN FY 2022 Annual Report**

**July 2021 – June 2022**

**Submitted by: Jeff Foster, SIGPLAN Chair**

SIGPLAN has four annual 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 around 500 people until the pandemic. In FY 2022, SIGPLAN transitioned back to in-person conferences, starting with SPLASH 2021 in October in Chicago (ICFP 2021, in August, was virtual). Attendance at conferences has been mixed but is heading back to normal levels—SPLASH 2021 had noticeably lower than usual attendance, POPL 2022 had good but not great attendance, and PLDI 2022 had great attendance.

1. Awards

SIGPLAN announced the following awards:

- SIGPLAN Robin Milner Young Researcher Award: Viktor Vafeiadis (MPI-SWS)

- SIGPLAN Programming Languages Achievement Award: Xavier Leroy (Collège de France and Inria)

- SIGPLAN Software Award: CompCert, by Xavier Leroy and six others

- SIGPLAN Distinguished Service Award: Mike Hicks (U. Maryland)

- SIGPLAN John C. Reynolds Doctoral Dissertation Award: two awards were given, to Uri Alon (Technion), “Machine Learning for Programming Language Processing” and to Jay P. Lim (Rutgers), “Novel Polynomial Approximation Methods for Generating Correctly Rounded Elementary Functions”

- SIGPLAN Most Influential Paper awards to papers presented 10 years earlier:

- ICFP 2011: Nate Foster, Rob Harrison, Michael Freedman, Christopher Monsanto, Jennifer Rexford, Alex Story, and David Walker, “Frenetic: A Network Programming Language”

- OOPSLA 2011: Sebastian Erdweg, Tillmann Rendel, Christian Kästner, Klaus Ostermann, “SugarJ: library-based syntactic language extensibility”

- POPL 2012: Thomas H. Austin and Cormac Flanagan, “Multiple facets for dynamic information flow”

- PLDI 2012: John Regehr, Yang Chen, Pascal Cuoq, Eric Eide, Chucky Ellison, Xuejun Yang, “Test-Case Reduction for C Compiler Bugs”

2. Significant Papers

The following paper, first presented at a SIGPLAN conference, appeared as a CACM research highlight in FY 2022:

- Emma Tosch, Eytan Bakshy, Emery Berger, David D. Jensen, and J. Eliot B. Moss, "PlanAlyzer: assessing threats to the validity of online experiments." CACM Research Highlight in Sep 2021; first presented at OOPSLA 2019.

3. Significant Programs

SIGPLAN is committed to gold open access for papers in conferences that have joined Proceedings of the ACM on Programming Languages (PACM PL). SIGPLAN has an agreement with Scott Delman that SIGPLAN pays the per-paper fee of $400 for gold open access, unless authors pay themselves or are covered by ACM Open. This program will continue over the next two years but may be phased out as ACM transitions to ACM Open.

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 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. As we have transitioned back to in-person events, we have begun providing these grants again, though we are not yet at the level of sponsorship we were previously. We do anticipate grant totals will rise to the previous levels in the coming fiscal year.

The SIGPLAN Information 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 current editors are Todd Millstein and Adrian Sampson. Postings include summaries of distinguished papers from SIGPLAN conferences and topics of broad interest to the community, such as improving gender balance in academia.

In FY 2022, SIGPLAN hired Neringa Young as Conference Manager. I met Neringa weekly in FY 2022, and she meets regularly with our flagship conference and PLMW chairs. Neringa has already been a significant help to SIGPLAN conference organization, even while she was getting up to speed during FY 2022.

4. Innovative Programs

SPLASH 2021 and PLDI 2022 both had a “SIGPLAN Track,” which invited authors of papers at recent, virtual, flagship SIGPLAN conferences to present their papers in person. The tracks were a strong success.

In 2022, we continued 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.

Because SIGPLAN has several flagship conferences, each with their own Steering Committee, sometimes lessons learned by one conference are not shared with other conferences. To address this issue, I started holding semi-regular SIGPLAN SC Summit Meetings, with representatives from the four flagship conferences. At these meetings, we share information and discuss SIGPLAN policies relevant to conferences.

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 increase 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. We renewed the CERP survey contract in FY 2022 for three years.

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

SPLASH 2021 lost a noticeable amount of money. The cost was due to greater than anticipated expenses for a hybrid event, and lower than hoped for turn out. It was worth it to gain experience with hybrid conferences, but we are using lessons learned to make sure that it does not happen again in the near term.

At the end of FY 2022, the PLDI SC voted to join PACMPL. Since PACMPL is Gold Open Access, SIGPLAN will have increased costs for Open Access going forward. This is easily accommodated in the short term. For the long term we will need to ensure conference incoming is adjusted appropriately, depending on the uptake of ACM Open.

**SIGSAC Annual Report**

**Submitted By: XiaoFeng Wang**

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

SIGSAC continues to move forward during the pandemic era.  In the past year, SIGSAC successfully organized 5 major security conferences (see below), made several awards to celebrate excellence and supported diversity in the community.  According to the SIG report, SIGSAC has 1,170 members and fiscally sound, even under the impacts of COVID in the past 2 years and a half.

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

SIGSAC executive committee passed new code of conduct against harassment, discrimination and other prohibited behavior (<https://www.sigsac.org/codeofconduct.html>) and requires all SIGSAC conferences to refer to it. The SIGSAC flagship conference ACM CCS selected a female program co-chair to the lead the conference in 2022. Also last year’s SIGSAC outstanding contribution award is won by a woman security researcher - Dr. Elena Ferrar.

1. Provide a list of awards and recipients

SIGSAC Outstanding Innovation Award: Patrick McDaniel and Srinivas Devadas

SIGSAC Outstanding Contributions Award: Elena Ferrar

SIGSAC Doctoral Dissertation Award Winner: Jo Van Bulck

SIGSAC Doctoral Dissertation Award Runners-Up:

Ioannis Demertzis

Güliz Seray Tuncay

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

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.

As reported last year, still we have concern about the conference model after the pandemic.  This coming October, we will organize the first on-site venue for ACM CCS, the flagship SIGSAC conference. There is still uncertainty about the attendance.  Also, in the past years, SIGSAC has been striving to move major conferences around the world.  This effort could also be hindered by the pandemic that seems never ending.

Another issue SIGSAC is trying to address is the concern for review ethics, as mentioned at the SIG board meeting.  The issue seems inevitable with the expansion of the community.  We are trying different avenues to uphold the fair and transparent review standards of conferences and journal to ensure their high quality.

**ACM Special Interest Group on Symbolic and Algebraic Computation SIGSAM July 2021 – June 2022  
Veronika Pillwein, SIGSAM 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 Zafeirakis Zafeirakopolous (Turkey).  Last 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, which is clearly an improvement. 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).  
  
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 2021, was held 18-23 July, will run in hybrid mode, with some participants on-site in St. Petersburg, Russia, but the majority attending online.  It was sponsored by ACM / SIGSAM. ISSAC 2022, which will be held 4-7 July, was initially planned as a full in-persion edition in Lille, France. Because of the ongoing and new crises, it will run in hybrid mode with a large in-person portioin. 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 2021 ACM SIGSAM Richard Dimick Jenks Memorial Prize (Chaired by Michael Monagan, Simon Frasier University) selected Henri Cohen, Karim Belabas, and Bill Allombert as the winner for the Pari/GP computer algebra system for the Macaulay and Macaulay2 computer algebra systems. The award will be presented at ISSAC 2022.  
  
2021 ISSAC Distinguished Paper Award: awarded to Shaoshi Chen, Ruyong Feng, Pingchuan Ma, and Michael F. Singer for their paper "Separability problems in creative telescoping".  
  
2021 ISSAC Distinguished Student Author Award: awarded to Elie Eid for the paper "Fast computation of hyperelliptic curve isogenies in odd characteristic".  
  
Some Impacts of SIGSAM Activities: The primary goal of SIGSAM in 2021-2022 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.  Two other main conferences in computer algebra and symbolic computation, Applications of Computer Algebra (ACA) and Computer Algebra for Scientific Computing (CASC) will be organized in August 2022 as part of a larger event embracing three summer schools. This event, SCALE (Symbolic Computation: Algorithms, Learning, and Engineering) was intended as a full in-person event with major support for young researchers. Given the current situation, it had to move to a hybrid event still aiming at large in person attendance. One of our last acts of the year, was to commit to sponsor this event.  
  
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 2021 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.  In ISSAC 2022, also online attendance was not free and reduced fees were offered. Also SCALE advertised SIGSAM membership.

**SIGSIM Annual Report**

**July 2021 – June 2022**

**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, which have been increased in frequency from once-a-year to twice-a-year, are continuing to enhance member engagement. Web presence has been renovated with a new SIGSIM website under a modern WordPress theme conforming to official ACM templates. The SIGSIM Webmaster role has been filled. 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. A rising early career researcher has been nominated and elected to the steering committee of SIGSIM (Dr. Philipp Andelfinger). On the ACM Digital Library, SIGSIM is continuing to register a notable number of article downloads. A new committee has been set up to capitalize on the new opportunities for simulation for space (including lunar and Mars mission simulations). Overall, SIGSIM remains fairly viable, financially stable, and active.

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

SIGSIM is proud to have served as a supporter of Women in Computing – SIGSIM has taken a lead role in financially supporting the 1st ACM Celebration of Women in Computing (AfricaCWIC 2022) by being a Platinum Sponsor, which is the highest level of sponsorships to the event (<https://africacwic.acm.org/2022/>).

1. Provide a list of awards and recipients
   1. The SIGSIM Distinguished Contributions Award was announced at the 2021 Winter Simulation Conference to Dr. Margaret Loper of the Georgia Tech Research Institute (USA) and laudatio delivered at the SIGSIM Meet-and-Greet at the Winter Simulation Conference (Hybrid) meeting in December 2021 as well as at the SIGSIM Members (Virtual) Meeting in January 2022.
   2. WSC PhD Colloquium Award was given to Johannes Ponge for the paper “Estimating the Effectiveness of Non-pharmaceutical Interventions in Heterogeneous Populations during an Emerging Infectious Disease Epidemic”.
   3. PADS PhD Colloquium Award was given to Till Koester for “Towards an Open Repository for Reproducible Performance Comparison of Parallel and Distributed Discrete-Event Simulators” co-authored by Adelinde Uhrmacher and Philipp Andelfinger.
   4. PADS Best Paper Award was given to Vignesh Babu and David Nicol for their paper “Temporally Synchronized Emulation of Devices with Simulation of Networks.”
   5. Due to Covid-19, the ACM SIGSIM-PADS Conference scheduled to be held in Atlanta, GA, USA June 2022 was held online. Therefore, complimentary registrations were provided but no travel awards were made to PhD students.
2. List significant papers on new areas that were published in proceedings
   1. 2021 MSWiM Best Paper “No Reservations Required: Achieving Fairness between Wi-Fi and NR-U with Self-Deferral Only,” by Ilenia Tinnirello, Alice Lo Valvo, Szymon Szott, Katarzyna Kosek-Szott
3. Describe conference activity
   1. PADS’22: Fully sponsored by SIGSIM, held virtually (originally planned to be held in Atlanta, GA, USA)
   2. MSWiM’21: Fully sponsored by SIGSIM, held in Alicante, Spain
   3. WSC’21: Partially sponsored by SIGSIM, successfully held as a hybrid conference in Phoenix, AZ, USA
   4. DS-RT’21: Partially sponsored by SIGSIM, held virtually (originally planned to be held in Valencia, Spain)
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. Special committee on Space Simulations has been formed for bringing new researchers and activities in federated simulation technologies for space models such as lunar and Mars missions
   3. 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 in PADS’22 with multiple authors choosing their manuscripts to be evaluated under this initiative to be awarded their relevant ACM badges.
   4. SIGSIM holds two members/business meetings every year, open to all its members. Information about the all recent meetings and associated slides are available here: [ACM SIGSIM Meetings (https://sigsim.acm.org/meetings)](https://sigsim.acm.org/meetings)
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 are making renewed efforts for increasing the student membership. One of the ways this has been accomplished is by providing complimentary membership for one year to those students who present at PhD colloquium segments of SIGSIM-related conferences (primarily PADS and WSC).
   2. The challenges and opportunities continue to arise with respect to emerging technologies (such as AI/ML and Digital Twins) that needs to be carefully tracked.
   3. We are continuing to solicit nominations for 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 an increasing amount of communication between SIGSIM other professional bodies, such as INFORMS Simulation Society, in the spirit of synergetic collaboration. The ongoing Simulation Archive initiative of SIGSIM is one of the evident manifestation of such coordinated activity.

**SIGSOFT FY’22 Annual Report  
July 2021 – June 2022  
Submitted by: Thomas Zimmermann, Chair**

*The ACM Special Interest Group on Software Engineering (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. The software engineering community had a strong technical year with many significant contributions. 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 in special projects, non-conference programs, as well as diversity, equity, and inclusion efforts.

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 introduced the role of Liaisons for Diversity, Equity, and Inclusion (DEI). This is a graduation of the previous DEI initiative to a permanent role on the executive committee (EC). The liaisons lead the DEI efforts for SIGSOFT and its conferences, but also connect and lead in the broader ACM community around Diversity, Equity, and Inclusion. The inaugural liaisons are Jo Atlee, Kelly Blincoe and Alexander Serebrenik. They also serve as the founding chairs and members of the SIGSOFT CARES committee that will be established by the end of 2022.
* SIGSOFT supported a virtual software engineering school at the CBSOFT conference in Brazil, an outreach program promoting coding and IT to High School (mostly) girls living in poverty in Belize, the ACM Celebration of Women in Computing (AfricaCWIC), as well as the CRA-WP Grad Cohort Workshops.

These efforts are in addition to ongoing exiting efforts related to diversity, equity, and inclusion.

* 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 a 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.
* SIGSOFT has a dedicated travel support and conference attendance program called CAPS 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 member on the SIGSOFT EC.

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 Lionel Briand (University of Ottawa and University of Luxembourg) *“for contributions in software testing, software quality assurance, and context-driven software engineering research, notably in exemplary collaborations with industry”.*
* The ACM SIGSOFT **Distinguished Service Award** was presented to **Joanne M. Atlee** (University of Waterloo) *“for sustained, outstanding service to the software engineering community and enabling a research environment in software engineering world-wide that is equitable, diverse and inclusive.”*
* The ACM SIGSOFT **Influential Educator Award** was presented to **Miryung Kim** (University of California, Los Angeles) *”for outstanding achievements in undergraduate and graduate mentoring with emphasis on research excellence in software engineering, diversity and inclusion.”*
* The ACM SIGSOFT **Early Career Researcher Award** was presented to **Xin Xia (Huawei)** *“for contributions to AI and SE, mining software repositories, and empirical software engineering.”*
* The ACM SIGSOFT **Outstanding Dissertation Award** was presented to **Wing Lam** (now George Mason University)for his Dissertation “*Detecting, Characterizing, and Taming Flaky Tests”* (University of Illinois at Urbana-Champaign, advised by Darko Marinov and Tao Xie).
* 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 **Using task context to improve programmer productivity** by **Mik Kirsten** and **Gail Murphy** (published at FSE 2006) *“for pioneering the concept of a task context, which has improved software practice and inspired new research.”*

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 “On the Naturalness of Software”, by **Abram Hindle, Earl T. Barr, Zhendong Su, Mark Gabel,** and **Premkumar Devanbu**. The ESEC/FSE conference recognized the ESEC/FSE 2011 paper “Don’t touch my code! Examining the effects of ownership on software quality”, by **Christian Bird, Nachiappan Nagappan, Brendan Murphy, Harald Gall,** and **Premkumar Devanbu**.

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 big data, human-computer interaction, mobile computing, artificial intelligence and machine learning, distributed systems, and security. Everything depends on software today and will continue in the future. As examples for the breadth of the software engineering field, we highlight below distinguished papers from the ESEC/FSE 2021 and ICSE 2022, 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 for another year. 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).

* Collaboration Challenges in Building ML-Enabled Systems: Communication, Documentation, Engineering, and Process. Nadia Nahar, Shurui Zhou, Grace Lewis, Christian Kästner (ICSE 2022)
* Bias in Machine Learning Software: Why? How? What to Do? Joymallya Chakraborty, Suvodeep Majumder, and Tim Menzies (ESEC/FSE 2011)
* Efficient Online Testing for DNN-Enabled Systems using Surrogate-Assisted and Many-Objective Optimization. Fitash Ul Haq, Donghwan Shin, Lionel Briand (ICSE 2022)
* TOGA: A Neural Method for Test Oracle Generation. Elizabeth Dinella, Gabriel Ryan, Todd Mytkowicz, Shuvendu K. Lahiri (ICSE 2022)

Several papers focused on the **community aspect** of software development, i.e., how software developers communicate in discussions and through Tweets and commit messages.

* Did You Miss My Comment or What?" Understanding Toxicity in Open Source Discussions. Courtney Miller, Sophie Cohen, Daniel Klug, Bogdan Vasilescu, Christian Kästner (ICSE 2022)
* "This Is Damn Slick!" Estimating the Impact of Tweets on Open Source Project Popularity and New Contributors. Hongbo Fang, Hemank Lamba, Jim Herbsleb, Bogdan Vasilescu (ICSE 2022)
* What Makes a Good Commit Message? Tian Yingchen, Yuxia Zhang, Klaas-Jan Stol, Lin Jiang, Hui Liu (ICSE 2022)
* SmartCommit: A Graph-Based Interactive Assistant for Activity-Oriented Commits. Bo Shen, Wei Zhang, Christian Kästner, Haiyan Zhao, Zhao Wei, Guangtai Liang, and Zhi Jin (ESEC/FSE 2011)

**Automated analysis techniques** around testing, verification, debugging, and security continue to remain popular topics in the SE research community.

* A Longitudinal Analysis of Bloated Java Dependencies. César Soto-Valero, Thomas Durieux, and Benoit Baudry (ESEC/FSE 2011)
* AlloyMax: Bringing Maximum Satisfaction to Relational Specifications. Changjian Zhang, Ryan Wagner, Pedro Orvalho, David Garlan, Vasco Manquinho, Ruben Martins, and Eunsuk Kang (ESEC/FSE 2011)
* Diversity-Driven Automated Formal Verification. Emily First, Yuriy Brun (ICSE 2022)
* Efficient Module-Level Dynamic Analysis for Dynamic Languages with Module Recontextualization. Nikos Vasilakis, Grigoris Ntousakis, Veit Heller, and Martin C. Rinard (ESEC/FSE 2011)
* Probabilistic Delta Debugging. Guancheng Wang, Ruobing Shen, Junjie Chen, Yingfei Xiong, and Lu Zhang (ESEC/FSE 2011)
* PUS: A Fast and Highly Efficient Solver for Inclusion-based Pointer Analysis. Peiming Liu, Yanze Li, Bradley Swain, Jeff Huang (ICSE 2022)
* Semantic Bug Seeding: A Learning-Based Approach for Creating Realistic Bugs. Jibesh Patra and Michael Pradel (ESEC/FSE 2011)
* SymTuner: Maximizing the Power of Symbolic Execution by Adaptively Tuning External Parameters. Sooyoung Cha, Myungho Lee, Seokhyun Lee, Hakjoo Oh (ICSE 2022)
* Vet: Identifying and Avoiding UI Exploration Tarpits. Wenyu Wang, Wei Yang, Tianyin Xu, and Tao Xie (ESEC/FSE 2011)

We would also like to highlight the **SIGSOFT Research Highlights**. 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. The committee selected the following paper as a research highlight.

* **Boosting fuzzer efficiency: an information theoretic perspective**

M. Böhme, V.J.M. Manès, S.K. Cha (ESEC/FSE 2020)

Nomination Statement: Fuzzing is one of the most successful software testing approaches for finding security vulnerabilities and is widely used in practice. Since many security faults are the result of malicious inputs, fuzzing probes an application with a large number of malformed inputs over a long period, continuously exercising the system in unintended ways. An important research direction for fuzzing is to find more efficient and effective ways to select inputs so that faults can be found quickly and that the inputs exercise (or cover) a large part of the softwares codebase. This paper reaches outside of software engineering for a solution, and leverages a novel use of information theory to improve a fuzzers efficiency. It uses Shannons entropy as a metric of the quality of input seeds, and drives the fuzzing towards those inputs by maximizing this metric. This idea was implemented in an existing fuzzer and as a result the extension is now turned on by default. While this paper makes contributions to fuzzing, it also advances the use of information theory for testing. The authors have made all of their artifacts available for the general research community and were awarded the reusable and functional artifacts badges from ACM.

Conference Activity

Over the past year SIGSOFT sponsored/co-sponsored 10+ conferences related to software engineering. Most conferences were held in virtual format due to the COVID-19 pandemic, with ICSE 2022 being the first hybrid conference. We expect that most conferences will move to a physical/hybrid format next year.

The following is a list of some of the SIGSOFT sponsored 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). The support is 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 significant administrative overhead.

Special Projects and Non-Conference Programs

In the past year, SIGSOFT launched the **SIGSOFT Blog** (https://sigsoft.medium.com/) as an additional way to enhance the communication between the SIGSOFT Executive Committee and the software engineering community, and to create a sense of community within SIGSOFT, and publicize software engineering and SIGSOFT activities to the outside world. The blog featured several important updates to the community such as “What’s New with ICSE 2022” and “Why Publish in ACM TOSEM in the Twenties?”

In addition, SIGSOFT has several existing programs to aid and expand our membership. A signature program is the Webinars series. 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** (<https://sigsoft.org/SEN/>) is distributed exclusively in electronic form. The newsletter is published quarterly and provides an update to the community about ongoing efforts as well as other reports. The current Editor-in-Chief is Jacopo Soldani.

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.

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 that SIGSOFT and the broader software engineering community will continue to face.

* Many conferences are in the process of switching to a hybrid format. This makes planning more complicated and adds extra work and anxiety to the conference organizers. SIGSOFT will do its best to support all conference formats going forward.
* Despite a large growth in the number 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 and regions beyond the United States.

**SIGSPATIAL FY22 Annual Report**

**(July 2021-June 2022)**

**Submitted by: Shawn Newsam, SIGSPATIAL Chair**

# **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 13 workshops collocated with the SIGSPATIAL 2021 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 2021 was an online conference so the fees were structured differently. Author registration fees in 2021 were: $200 for ACM or SIGSPATIAL members; $220 for non-members; 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.

Our SIG membership remains strong. Below is a chart showing our total membership and breakdown into membership categories for 2008 to 2022.

Chart, bar chart

Description automatically generated

We see a drop from FY 2021 to FY 2022, which is largely accounted for by decreased professional members. One possible explanation for the decrease in overall members is that our 2019 and 2020 conferences were virtual, lessening the chance for face-to-face engagement and reducing the sense of belonging in our SIG. This year we are working to increase student involvement with a significant increase in student travel grants for our conference. This may have a positive effect on membership.

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. We have two special issues of the ACM Transactions on Spatial Algorithms and Systems that are focused on the pandemic: 1) a special issue on Contact Tracing which was published in June 2022; and 2) a special issue on Understanding the Spread of COVID-19 which is in-progress. Finally, a number of papers at our ACM SIGSPATIAL 2021 conference and associated workshops focused on the pandemic.

# **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 we had a woman as Co-Chair of our conference Program Committee in 2021. We have actively recruited women and other members of underrepresented groups to serve in other 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 in several ways. First, we are going to use a large portion of our conference sponsor funds to provide travel support to junior researchers, with a particular focus on broadening our community along several dimensions including gender, ethnicity, and geography. We are also working on having DEI events at our conference such as mentorship for underrepresented groups such as early career women. We are in the process of establishing a DEI Chair/Committee for our conference to plan and manage these events.

# **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 2021, the award was given to the following paper from the 2011 conference:

“Transportation Mode Detection using Mobile Phones and GIS Information” by

Leon Stenneth, Ouri Wolfson, Philip S. Yu, Bo Xu, all from the University of Illinois, Chicago

*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 2021 was:

“Robust Routing Using Electrical Flows” by Ali Kemal Sinop, Lisa Fawcett, Sreenivas Gollapudi, Kostas Kollias, all from Google Research

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

As artificial intelligence technology becomes increasingly pervasive in everyday life, so does the debate over its responsibility. At the SIGSPATIAL 2021 conference, we saw a number of research efforts into investigating the privacy risks and fairness of intelligent location-based services.

The paper "Efficiency or Fairness? Carpooling Design for Online Ride-hailing Platform in Transport Hubs at Midnight" by Chenbei Lu (Tsinghua University), Jiaman Wu (Tsinghua University), Chenye Wu (The Chinese University of Hong Kong, Shenzhen), Yongli Qin (Didi Chuxing), Qun Li (Didi Chuxing), and Nan Ma (Didi Chuxing) was presented in the Transportation session. This paper explored the balance between efficiency and fairness for online ride-hailing platforms, and presented experimental results based on large scale data from Didi Chuxing.

The paper "A Closer Look: Evaluating Location Privacy Empirically" by Liyue Fan (UNC Charlotte) and Ishan Gote (UNC Charlotte) compared several different location privacy protection approaches through real world datasets, pointing out that it is possible to strike a balance between utility and privacy when sharing location data with untrusted servers.

The paper "HTF: Homogeneous Tree Framework for Differentially-Private Release of Location Data" by Sina Shaham (University of Southern California), Gabriel Ghinita (University of Massachusetts, Boston), Ritesh Ahuja (University of Southern California), John Krumm (Microsoft Research), and Cyrus Shahabi (University of Southern California) proposed a differential privacy method which can take advantage of the characteristics of location data. Experiments on real data show that this approach can maintain accuracy while preserving privacy.

Three new co-located workshops (in their first or second years) were held at the ACM SIGSPATIAL 2021 conference including:

* The 1st ACM SIGSPATIAL International Workshop on Animal Movement Ecology and Human Mobility (HANIMOB 2021) which focuses on the interplay between animal and human mobility at methodological and application level. Three keynotes: Christian Rutz, University of St. Andrews, UK illustrated the new-born COVID-19 Bio-logging Initiative, aiming to investigate the response of wildlife to the human lockdowns; Jed Long, Western University Ontario, focused on the use of big mobile phone datasets collected during the COVID-19 pandemic for understanding patterns in human mobility; Ran Nathan, The Hebrew University of Jerusalem, illustrated novel tracking systems providing accurate data on the simultaneous movement of multiple individuals (groups of animals). The workshop program includes 8 paper presentations.
* The 1st ACM SIGSPATIAL International Workshop on Searching and Mining Large Collections of Geospatial Data (GeoSearch 2021) focused on searching large scale earth observation data generated at a rate of many trillion pixels per day. The workshop program featured a keynote by Manil Maskey, Senior Research Scientist at the National Aeronautics and Space Administration (NASA) and four paper presentations.
* The 2nd ACM SIGSPATIAL International Workshop on Spatial Computing for Epidemiology (SpatialEpi’21). This workshop was first held at SIGSPATIAL 2020 under the name 1st ACM SIGSPATIAL International Workshop on Modeling and Understanding the Spread of COVID-19. 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. A keynote titled “The practicalities of multiple disciplinary research: lessons from COVID-19” by Epidemiologist Dr. Amira Roess explored potential directions between epidemiologists and the spatial computing community.

# **Describe conference activity**

ACM SIGSPATIAL 2021 was the 29th 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. 2021 was the 14th year that the conference was held under the auspices of the ACM Special Interest Group on Spatial Information – SIGSPATIAL. In 2021, the flagship conference was held online from November 2 through November 5.

During the one-day workshops and the two-and-a-half-day single track conference, ACM SIGSPATIAL 2021 attracted a record 1,022 attendees. The online format along with free registration for non-authors allowed significantly more people to attend. 314 attendees were from industry and 708 were from academia. We were very glad about the continued significant participation by industry.

Papers were submitted and accepted in different categories. We received a total of 152 research submissions out of which 34 were accepted as full 10-page papers, resulting in an acceptance rate of 22.4%. Further, six industrial experience and systems papers were accepted. The remaining papers in the proceedings correspond to demos and posters, which had 4 pages

Continuing tradition, ACM SIGSPATIAL 2021 had a GISCup programming contest. In 2021, this focused on the estimated time of arrival (ETA), also known as travel time prediction of a trip on a road network. ETA plays an important role in various applications, for instance, in ride-hailing scenes like order dispatch, price estimation, arrival time prediction, route decision, etc. The competition attracted 1,217 teams with 1,341 members. 128 formal entries were submitted finally and 7 entries were selected as winners. In addition to award prizes, they were qualified for an invited paper and an oral presentation in the main conference. DiDi 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, eight papers 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 2021, 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 103 invited members from academia and industry, plus an additional 22 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 2021 conference had two distinguished speakers: Vincent Tao, Founder and CEO of Wayz.ai, who gave the first keynote presentation titled “Spatio-Temporal AI Powering the Phy-gital City” and Dawn Woodard, Senior Director of Data Science for platform technologies at Uber, who gave the second keynote presentation titled “Geospatial Technologies for Ride-Sharing and Delivery Platforms”.

The 2021 conference was preceded by the following 13 co-located workshops:

* 7th ACM SIGSPATIAL International Workshop Emergency Management using GIS (EM-GIS 2021)
* 5th ACM SIGSPATIAL International Workshop on Location-Based Recommendations, Geosocial Networks, and Geoadvertising (LocalRec 2021)
* 4th ACM SIGSPATIAL International Workshop on GeoSpatial Simulation (GeoSim 2021)
* 5th ACM SIGSPATIAL International Workshop on Geospatial Humanities (GeoHumanities 2021)
* 3rd ACM SIGSPATIAL International Workshop on Geospatial Data Access and Processing APIs (SpatialAPI 2021)
* 4th ACM SIGSPATIAL International Workshop on Advances in Resilient and Intelligent Cities (ARIC 2021)
* 14th ACM SIGSPATIALInternational Workshop on Computational Transportation Science (IWCTS 2021)
* 3rd ACM SIGSPATIAL International Workshop on Spatial Gems (SpatialGems 2021)
* 2nd ACM SIGSPATIAL International Workshop on Spatial Computing for Epidemiology (SpatialEpi 2021)
* 4th ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery (GEOAI 2021)
* 1st ACM SIGSPATIAL International Workshop on Animal Movement Ecology and Human Mobility (HANIMOB 2021)
* 1st ACM SIGSPATIAL International Workshop on Searching and Mining Large Collections of Geospatial Data (GeoSearch 2021)
* 10th ACM SIGSPATIAL International Workshop on Urban Computing (UrbComp 2021)

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 2021 included: Apple, Didi and Huawei (Platinum Sponsors); and Oracle and Esri (Bronze Sponsors). Many of these sponsors have supported the conference for multiple years.

# **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 8th 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 27 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. We also have two special issues related to the COVID-19 pandemic. The first 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 was published in June 2022. 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).

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 7-8 papers per issue in 2021 and 2022 due to the increase in the number of quality papers being submitted.

We continued to maintain the SIGSPATIAL Special Newsletter. This newsletter is supposed to have three issues per year (March, July, and November) typically publishing communications around the ACM SIGSPATIAL like papers from the student research competition, project and meeting reports as well as conference and workshop reports. In the year 2022, the SIGSPATIAL Special Newsletter, however, has not received the required attention from our community partly due to less meetings and due to many special issues from the aforementioned novel publications. We aim at recovering the SIGSPATIAL Special Newsletter to publish conference reports and additional communications. With increasing post-pandemic activities, we are convinced that the concept of this newsletter as an additional publication venue is valid.

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

We would like to get back to an in-person ACM SIGSPATIAL conference. We are currently planning for our November 2022 conference to be completely in person (with some exceptions for author presenters who have documented excuses). Getting back to an in-person conference has a number of challenges though. Attendees might still be reluctant to travel and travel costs have risen significantly. This will likely reduce our attendance numbers. Another, perhaps less obvious challenge, is that after several years of on-line conferences, we have lost institutional knowledge of how to run an in-person conference. Since conference organizers typically serve for two years, the set of organizers for our 2022 conference need more training than usual.

In the next 2-3 years, we would like to continue focusing on increasing student participation at the conference. Having vibrant student participation is key to the future of ACM SIGSPATIAL particularly in staffing our leadership roles. 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.

We also plan to continue to increase the diversity of our community. We are currently seeking to establish a DEI chair/committee at our ACM SIGSPATIAL conference.

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. This was postponed to 2021 which unfortunately had to also be in person. 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**

**Submitted By: Lisa Brown**

**SIG Health and Viability**

Currently we do not believe that the SIG is completely healthy and worry about its viability. We do have an active core community that is heavily involved in our Slack channel and email listserv. This same group is actively assisting in efforts to revitalize the SIG.

Recent response to our call for proposals for our 2023 conference was very promising. This was the first in-person conference in years where we did not have to extend our call for proposals.

**Efforts in Diversity, Equity, and Inclusion**

We have had a number of conference presentations that focus on diversity, equity, and inclusion in our field and one of our members did a virtual presentation between conferences about inclusive language in the IT field.

We strive to have volunteers and members in leadership positions that represent diverse populations.

We recently updated our website to have a more inclusive language. Virtual platforms have been enhanced to include accessible tools.

Our virtual poster session in both 2021 and 2022 was held at a time that was accessible to our Japanese contingency who presented in these sessions.

The 2021 conference included keynote speakers from the ACM distinguished speaker list who focused on Inclusive Software (Margaret Burnett) and stereotypes on learners based on age (Susan Zvacek).

Our members have indicated that they have learned from these activities and shared what they have learned with their campus communities.

**SIGUCCS Awards**

There were only communication awards granted in 2021-2022.

* We received 74 entries from 17 nominators representing 12 different institutions.
* We awarded 11 Best of Category awards + 1 Awards of Excellence (12 awards is 16% of 74 entries).
* Best of Category winners represent 5 different institutions.

Winners are represented on this site: <https://siguccs.org/wp/participate/siguccs-awards/communication-awards/communication-award-recipients-2021/>

Other awards that we give out include attendance at our conference and we did not want to stress future conference budgets by making awards that would require future travel.

**Significant Published Papers**

**Our members published the following papers for the 2022 conference:**

Hiromi Yamaoka, Keisuke Tamai, Tetsuji Okada, Tsuyoshi Akiyama, and Hideo Masuda. 2022. The Lecture in Our University During COVID-19 Pandemic. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 81–85. <https://doi.org/10.1145/3501292.3511570>

Shadi Beidas and Louis McHugh. 2022. The COVID-19 Pandemic and Retooling Application Delivery: The Transformation from Physical to Cloud-Based Infrastructure. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 73–80. <https://doi.org/10.1145/3501292.3511580>

Nick Pistentis, Truong Nguyen, and Viann Ha. 2022. It's Better to Be Lucky Than Good: Reflections on Technical Decisions in the Wake of a Pandemic. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 68–72. <https://doi.org/10.1145/3501292.3511566>

Yoshiaki Kasahara and Takao Shimayoshi. 2022. Our Design and Implementation of Multi-Factor Authentication Deployment for Microsoft 365 in Kyushu University. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 56–61. <https://doi.org/10.1145/3501292.3511569>

Lisa Brown. 2022. Lessons Learned from Pandemic Teaching. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 51–53. <https://doi.org/10.1145/3501292.3511582>

Crague Cook. 2022. A Journey into Hybrid Meetings: A story of a team's journey into hybridizing their meeting rooms, the outcomes, and lessons learned along the way. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 39–42. <https://doi.org/10.1145/3501292.3511577>

Laurie Fox. 2022. Team Building for Employee Morale and Productivity. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 34–37. <https://doi.org/10.1145/3501292.3511563>

Dan R. Herrick and Jeremy B. Diaz. 2022. Technical Design of Computer Hoteling Stations for a Hybrid Work Modality. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 30–33. <https://doi.org/10.1145/3501292.3511588>

Takashi Yamanoue. 2022. Yet Another Wearable LED Matrix Sign System for Campus Guiding. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 25–29. <https://doi.org/10.1145/3501292.3511579>

Takahiro Nemoto, Kazuhiro Mishima, and Shigeyoshi Aoyama. 2022. 5-year Efforts and Operational Results of Virtual Computer Classroom in TUAT. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 21–24. <https://doi.org/10.1145/3501292.3511572>

Tsuyoshi Akiyama, Ayumu Haruta, Keisuke Tamai, Tetsuji Okada, Hiromi Yamaoka, and Hideo Masuda. 2022. Building a Secure Network during the COVID-19. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 16–20. <https://doi.org/10.1145/3501292.3511571>

Kazuhiro Mishima, Takahiro Nemoto, and Shigeyoshi Aoyama. 2022. Actual Practice of Short Time Period Implementation of Multiple Web Conferencing Systems for Online Classes. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 11–15. <https://doi.org/10.1145/3501292.3511568>

ViAnn Ha, Truong Nguyen, and Nick Pistentis. 2022. Refurbished Computer Giveaway: Creatively Supporting Student Success Through Technology. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 7–10. <https://doi.org/10.1145/3501292.3511567>

ViAnn Ha, Truong Nguyen, and Nick Pistentis. 2022. Refurbished Computer Giveaway: Creatively Supporting Student Success Through Technology. In Proceedings of the 2022 ACM SIGUCCS Annual Conference (SIGUCCS '22). Association for Computing Machinery, New York, NY, USA, 7–10. <https://doi.org/10.1145/3501292.3511567>

**Conference Activity**

The 2022 conference was held virtually from March 28 - April 7, 2022 with 1 keynote speaker, 13 presentations, 6 reviewed posters (additional SIG activity posters included items like mentoring), and 7 lightning talks. There were 80 registered participants.

**Non-conference Activities in Service to SIG Members**

The SIG continues to engage the community through the bi-monthly book club and monthly Zoom “meet-ups”.

Book club meetings are held every other month and are attended by anywhere from 8-15 persons. Books for the 2021-2022 year include:

* The No Asshole Rule: Building a Civilized Workplace and Surviving One That Isn’t - Robert I. Sutton (September 2021)
* First, Break All the Rules - Marcus Buckingham & Curt Coffman (November 2021)
* Four Thousand Weeks: Time Management for Mortals - Oliver Burkeman (January 2022)
* REMOTE: Office not Required - Fried & Hansson (March 2022)
* My Own Words - Ruth Bader Ginsberg (May 2022)
* Drive: the Surprising Truth about what Motivates Us - Dan Pink (July 2022)

Additional books for September and November 2022 are already selected.

“Hangouts” are offered monthly with various themes. Attendance at these meetings range from 15-25 persons.

* June 2022 - Looking forward to the 2023 Conference
* May 2022 - Retain and Recruit Staff
* April 2022 - Follow-up from 2022 conference
* March 2022 - Virtual Team Building Event for Conference
* January 2022 - Career Goals for the New Year
* December 2021 - Making a Difference with Inclusive Words
* November 2021 - The Flexible Office
* October 2021 - Scary Support Stories
* September 2021 - Back to Class
* August 2021 - Time to De-stress
* July 2021 - Return to Campus

**Key Issues for the next 2-3 Years**

* Membership has declined. The greatest benefit to being a member is reduced conference registration. Due to not having a physical conference for the past 3 years, there has been little need to be a member.
* Volunteers for board positions and conference positions are recruited from those that attend. Navigating the situation with COVID made engaging with new people more difficult. Additionally, our members are IT support staff who have been severely affected by the pandemic with increased demands on technology for remote and virtual work and instruction and changing campus technology needs.
* Higher education salaries have not been keeping up with the external companies and IT staff have left our industry to higher paying jobs outside of higher education - thus our membership pool is smaller.
* Travel budget/restrictions may still be in place in coming years. Since so many conferences were offered virtually, institutions may cut back on the ability for staff to travel for conferences.
* Finding conference locations based on the political climate is more difficult with the bans to travel to states with discriminatory practices (for example, California state schools have currenlty banned travel to 22 states). Additionally, making sure that our attendees feel safe traveling to the selected conference location is of concern.
* Inflation has increased costs for hosting making it more difficult to find locations that are affordable for a small SIG.
* We do not have an ACM program manager that attends our monthly meetings because of retirement. While we have access to ACM via email, this has been prohibitive since we don’t always know what topics to ask about. The previous program manager would listen for conversations where ACM should be involved and guide us to follow existing policies.

SIGWEB Annual Report

July 1, 2021 - June 30, 2022

Submitted by: Peter Brusilovsky, Chair

Peter Brusilovsky, Chair

Eelco Herder, Vice Chair

**What ACM wants:**

1. Comment on the ways in which the SIG is a healthy and viable organization
2. Describe your efforts related to Diversity, Equity, and Inclusion.
3. Provide a list of awards and recipients
4. List significant papers on new areas that were published in proceedings
5. Describe conference activity
6. 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.

What we need to add to the last year report

* COVID hybrid conference challenges and responses – successes like Barcelona and issues (like WSDM loss and lower attendance) (Peter)
* Further Development of Fair Access (Web Science 20221, UMAP 2022, DocEng 2022, Hypertext 2022) – (Peter and Eelco)
* Access to conferences by SIGIWEB members (Eelco)??
* Addition of the Web Conference (Peter)
* Updates on awards (Eelco)
* Important papers from main conferences (Eelco, Peter)
* Social media updates (Peter)

# **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 2022, SIGWEB organized a sequence of three co-located SIGWEB conferences in Barcelona, Spain from June 26 to July 7, 2022, in a successful and enjoyable hybrid setting.
* The Web Conference (formerly WWW), the most important event for researchers in the area of the Web, is now added to the list of SIGWEB-sponsored conferences. The first Web conference under ACM SIGWEB was held in Lyon in 2022
* An increasing number SIGWEB conferences (Hypertext, DocEng, UMAP, Web Science) piloted different versions of the Fair Access initiative to bring attendees from underrepresented regions to SIGWEB events
* Social media coverage of SIGWEB activities has been expanded.

# **SIGWEB Conferences and SIG Vitality**

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 will celebrate its 15th anniversary in 2023. The Web Conference (formerly WWW), which became a SIGWEB conference this year, celebrated its 30th birthday in 2021. In addition, SIGWEB co-sponsors the CIKM, JCDL, WSDM, and UMAP series and works with several other conference series “in cooperation”.

For most of the year 2021, as covered by this report, all our core conferences were running online: Hypertext and DocEng were virtually co-located and running virtually in August-September from Ireland (Dublin and Limerick), WebScience was running online from Southampton, UK in June 2021. The same was true for our co-sponsored events. The CIKM Conference, co-sponsored with SIGIR, hosted its 30th event in November 2021 online from Australia and UMAP hosted its 30th conference in June 2021 online from Utrecht, the Netherlands. JCDL, co-sponsored by SIGIR and IEEE, was running online from Illinois, US in September 2021.

For the year 2022 everyone hoped to return to in-person events, but the year started in the same online way as 2021. The WSDM conference originally planned as in-person in Arizona had to switch to online mode. The Web Conference, now a SIGWEB conference, was running virtually from Lyon, France, in April. However, Summer 2022 finally delivered long-anticipated changes. The series of three co-located SIGWEB events - Web Science, Hypertext, and UMAP run successfully in Barcelona from June 26 to July 7, 2022, as a hybrid event with both in-person and online attendees. We hope that CIKM in Atlanta will be a success as well.

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 to introduce 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. We hold virtual Town Hall events in 2021 at both ACM DocEng and ACM Hypertext and in June 2022 we hosted a joint Town Hall for WebSci and Hypertext in person. This was also the first Town Hall at WebSci series and we hope to organize a Town Hall at the WebConf next year as well.

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**

Despite all struggles of conferences at COVID time, the switch to virtual conferences brought an important opportunity: the online attendance mode made it much easier - and more affordable - to bring researchers from underrepresented communities to our conferences. SIGWEB started this work in 2020 by announcing the Hypertext Fair Access Initiative (<https://www.sigweb.org/conferences/upcoming/32-hypertext-2020-fair-access-initiative>). It was followed by a similar initiative at UMAP 2020 and the DocEng 2020 also sponsored by SIGWEB (<https://um.org/umap2020/2020/sigweb-support-for-low-income-or-lower-middle-income-countries/>). These opportunities were used by a number of researchers from underrepresented regions.

In 2021 and 2022, we expanded these activities to several other conferences, discussing the most appropriate approaches to support Fair Access with conference organizers during the budget discussion stage. For the WebScience conference, SIGWEB supported a Fair Access Fund in 2021 (<https://websci21.webscience.org/988-2/>) and 2022 (<https://websci22.webscience.org/registration/fair-access/> ) .

These activities also 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/>). Further, CIKM 2021 introduced a Diversity and Inclusion Scholarship chair (<https://www.cikm2021.org/committee>).

In 2022, several conferences made their inclusion efforts even more visible. Both WebConf 2022 and WSDM 2022 actively promoted inclusion and diversity through the Diversity, Equity, and Inclusion (DEI) initiative (<https://www2022.thewebconf.org/diversity-equity-inclusion/>). Hypertext 2022 and UMAP 2022 provided a hassle-free way to apply (<https://ht.acm.org/ht2022/grants-support/>, <https://www.um.org/umap2022/grants-and-support/> ). We extensively discussed our Fair Access experience with a number of other SIGs and conference series and we are happy to see that different approaches to support underrepresented regions became standard at ACM events.

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 2021, the following two named awards were presented:

* ***Douglas Engelbart Best Paper Award*:** Alisa Rieger, Tim Draws, Mariët Theune and Nava Tintarev. “This Item Might Reinforce Your Opinion: Obfuscation and Labeling of Search Results to Mitigate Confirmation Bias”
* ***Ted Nelson Newcomer Best Paper Award*:** Mithun Das, Punyajoy Saha, Ritam Dutt, Pawan Goyal, Animesh, Mukherjee, and Binny Mathew. “You too Brutus! Trapping Hateful Users in Social Media: Challenges, Solutions & Insights“

At ACM Hypertext 2022, the following two named awards were presented:

* Douglas Engelbart Best Paper Award: Mark Bernstein and Stee McMorris “Links Of Darkness: Hypertext And Horror”
* Ted Nelson Newcomer Best Paper Award: Fedor Vitiugin and Carlos Castillo “Cross-Lingual Query-Based Summarization of Crisis-Related Social Media: An Abstractive Approach Using Transformers”

At ACM CIKM 2021, the following two awards were presented:

* *V****annevar Bush Best Paper Award:*** *Mari Sato, Adam Jatowt, Yijun Duan, Ricardo Campos, and Masatoshi Yoshikawa “Estimating Contemporary Relevance of Past News”*
* *Best Student Paper: Joel Pepper, Jane Greenberg, Yasin Bakiş, Xiaojun Wang, Henry Bart and David Breen“Automatic Metadata Generation for Fish Specimen Image Collections”*

At ACM UMAP 2022, the following two awards were presented:

* *Best Paper Award*: Madhurima Vardhan, Narayan Hegde, Srujana Merugu, Shantanu Prabhat, Deepak Nathani, Martin Seneviratne, Nur Muhammad, Pranay Reddy, Sriram Lakshminarasimhan, Rahul Singh, Karina Lorenzana, Eshan Motwani, Partha Talukdar and Aravindan Raghuveer. Walking with PACE – Personalized and Automated Coaching Engine
* *James Chen Best Student Paper Award*: Nhat Tran, Malihe Alikhani and Diane Litman. How to Ask for Donations? Learning User-Specific Persuasive Dialogue Policies through Online Interactions

At ACM UMAP 2021, the following two awards were presented:

* *Best Paper Award*: Kamil Akhuseyinoglu and Peter Brusilovsky (University of Pittsburgh, USA) "Data-Driven Modeling of Learners' Individual Differences for Predicting Engagement and Success in Online Learning"
* *James Chen Best Student Paper Award*: Giovanni Gabbolini and Derek Bridge (Insight Centre for Data Analytics, University College Cork, Ireland) "Generating Interesting Song-to-Song Segues With Dave"

# **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 members to take leadership roles is both an opportunity and a challenge.

SIGWEB regularly provides 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 the UMAP conference, which is co-sponsored with SIGCHI. In 2022 we also contributed to student travel for CIKM 2022 co-sponsored with SIGIR.

To keep stronger ties with our conference series, SIGWEB instituted the mechanism of conference liaisons. 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 the SIGWEB Executive committee. Within the reporting period, SIGWEB considerably updated its Executive committee, ensuring the participation of active and well-informed members. The last EC meeting (hold virtually) was important to coordinate and plan conference organization in the COVID-19 context.

The elected volunteer leaders of the SIG at the end of FY 2022 were:

* Chair: Peter Brusilovsky
* Vice-Chair: Eelco Herder
* Secretary/Treasurer: Milena Dobreva
* [Dick Bulterman](https://www.sigweb.org/about-sigweb/executive-committee/23-dick-bulterman)Past Chair (2015-2019)

The appointed SIGWEB Executive Committee has the following members:

* [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 Nicholas](https://www.sigweb.org/about-sigweb/executive-committee/26-charles-nicholas)CIKM Liaison
* [Maria Bielikova](https://www.sigweb.org/about-sigweb/executive-committee/29-maria-bielikova)UMAP Liaison
* [David Millard](https://www.sigweb.org/about-sigweb/executive-committee/30-david-millard)Web Science Liaison
* [Mounia 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 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 has a loyal following and is 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.

Our main challenge for the previous and the coming years is the organization of hybrid conferences. The issue of running hybrid conferences has been discussed at our EC meetings and the majority of members spoke in favor of maintaining hybrid events with both in-person and online attendance. The main arguments in favor (in addition to the necessity to provide access to COVID-concerned attendees) were reducing environmental impact and facilitating access from underrepresented regions. The SIGWEB leadership also believes that online attendance could help cross-promoting our conferences within membership sub-communities.

As the experience of WSDM 2022 shows, planning the conference as a hybrid could be also a safer option in the volatile covid situation. WSDM was planned as in-person only and was not investing in hybrid access. Given the rise of Omicron, the fully in-person option became problematic, but the conference was not prepared to switch to hybrid and had to cancel all hotel reservations. It resulted in a large loss.

However, planning for a hybrid is a challenge by itself. It is much harder and more expensive to design proper virtual attendance in parallel with in-person conferences (in comparison with the fully-online events) and we need to learn how to do it. In particular, larger registration fees for online attendance might be necessary due to the complex technology required. Both the technology design opinions and registration fee options should be explored and best practices promoted. Budgeting the right balance between in-person and virtual attendance is a new skill and we need to learn it as well.

So far, the experience of recent hybrid events shows that ⅓ to ½ of attendees attend in-person. This trend has to be followed longer to make reliable estimations, however, it is already clear that in-person attendance could decrease for hybrid events. This could lead to an additional challenge for smaller events that could become too small to provide a good experience. One approach to address it is to plan more co-located events that could bring more attendees by offering one travel investment to attend more than one event. We started to explore this option in 2021 by planning the co-location of a relatively small UMAP with a related conference AIED. We also worked on co-locating Hypertext and DocEng in Ireland. It didn’t work in 2021 as expected since all conferences moved to fully online options, but our next attempt in 2022 to co-locate WebScience, Hypertext, and UMAP in Barcelona was an important success. We planned joint sessions, joint keynotes, and joint workshops to promote community mixing and a number of attendees used a discounted opportunity to attend more than one event. We hope to continue this practice in 2023 with the planned co-location of WebConf and WebSci in Austin, TX. However, we might anticipate a new trend when smaller conferences will simply continue to run online. Our smallest event, DocEnd is currently discussing this opportunity and DocEng 2022 decided to stay online only.

One of the constant challenges for SIGWEB (and ACM) is to design a total benefits package that makes a compelling personal offer for new members. 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 during 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 in 2019, 2020, and 2021 and will continue for 2022 and 2023. We hope that access to the 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 deeply discounted access to 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 own pocket. At both DocEng and Hypertext series, 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**

Over the last two years, SIGWEB officers invested a considerable amount of time to revive and improve SIGWEB’s reach to its members and the broader community through publicity channels and Social Media. Most importantly, as the organizers of the ACM conference on Hypertext and Social Media, we decided to “walk out talk” and invest in establishing an exemplary presence in 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 increased, among others by following the conferences’ social media accounts and sharing relevant announcements. Our social media coordinator, Behnam Rahnadri, maintains our presence on all these social media channels. Every year we approach publicity chairs of our sponsored conferences asking them to share key mailing list announcements with us to be distributed to the SIGWEB mailing list and to tag us on Twitter and other social media posts to ensure re-tweeting from SIGWEB. It made our social media accounts very active.

In the reported period, we extended our social media coverage by adding the SIGWEB YouTube account, which move has over 100 subscribers, and extending the coverage of our conferences on Wikipedia. At the moment, with exception of WSDM for which we are only 25% sponsors, all SIGWEB conferences have a solid Wikipedia presence.

ACM SIGCOMM Annual Report

Period covered: July 1, 2021 to June 30, 2022

Prepared by Ellen Zegura, Chair of SIGCOMM

**SIG ORGANIZATION HEALTH AND VIABILITY**

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. In this past year, we saw a gradual return to in person conferences, a welcome chance to reconnect with colleagues and engage in conversations that are difficult to replicate by video conference. As one measure of vitality, the recent SIGCOMM conference in August 2022 (beyond the reporting period) had 544 registrants.

There are several highlights to report from the past year.

**DIVERSITY, EQUITY, AND INCLUSION (DEI) –**

A major effort of the SIG in this past year was to create, disseminate, and analyze a survey on DEI issues. We surveyed our membership about their perception of the state of diversity and inclusion in our community. We received 115 responses, which correspond to about 10% of the official membership. The responses reflected the make-up of the community both gender-wise and ethnicity-wise. The majority of the respondents believe that the community is inclusive, but they were split on how diverse the community is. Controlling for gender and ethnicity reveals differences in perception. For example, non-male participants believe that the community is less inclusive and less diverse as opposed to male participants. The same holds for non-Caucasians and Caucasians. Interestingly the majority of the respondents believe that online conferences have had a positive impact on diversity and inclusion. We also received a number of excellent suggestions for tackling the question of inclusion and diversity, which we are currently working on incorporating into our plans going forward.

The SIG continued to support geo-diversity travel awards, though few travel grant applications that fall into this category. Looking ahead, and considering the results of the DEI survey, we may reconsider how we encourage geo diverse attendance. The existence of travel grants alone is not enough.

The SIG has continued to support the efforts of N2Women. An N2Women workshop was held virtually at SIGCOMM 2021 and featured a keynote by Jennifer Rexford, a panel including Anja Feldmann, Head of Max Planck Institute for Informatics, Gabriele Kotsis, Professor at JKU Linz and President of the ACM, Robin Hillary Kravets, Professor at University of Illinois at Urbana-Champaign, and Xia Zhou, Associate Professor at Dartmouth College and ACM SIGMOBILE 2019 Rockstar, and structured mentoring.

The CARES Committee to aid discrimination and harassment policy violations underwent membership changes and an increase in scope (per ACM request). The current committee is co-chaired by Jennifer Rexford (Princeton) and Marinho Barcellos (University of Waikato). Additional members are Justine Sherry (CMU), Sujata Banerjee (VMWare), Ethan Katz-Bassett (Columbia University) and Shir Landau Feibish (Open University of Israel). The committee aims for in person representation at each SIG sponsored conference and workshop; committee members are also reachable by email at any time.

**AWARDS AND RECIPIENTS**

SIGCOMM makes five awards each year.

The Dissertation Award winner was Praveen Kumar (Ph.D. from Cornell), with two runners up, Brandon Schlinker (PhD from USC) and Rachee Singh (PhD from University of Massachusetts).

The Rising Star Award winner was Laurent Vanbever (EPFL), *“in recognition of outstanding research contributions, early in his career, toward improving the flexibility, correctness, and security of Internet routing.”*

There were two Lifetime Achievement Award Winners, Deborah Estrin (Cornell Tech), “*for visionary contributions from protocols to applications in participatory sensing, and mobile health*”, and Henning Schulzrinne (Columbia), “*for impactful and sustained contributions to the design of protocols, applications, and algorithms for Internet multimedia*.” Both gave keynotes at the SIGCOMM conference in August.

Two Test of Time Awards were given. The winning papers and authors are: “Network traffic characteristics of data centers in the wild”, Theophilus Benson, Aditya Akella, and David A. Maltz, ACM IMC 2010. *For insightful characterization of the traffic patterns and network topologies in modern data centers, and the curation of public datasets that enabled academic research on data-center networks.*

“Understanding the impact of video quality on user engagement”, Florin Dobrian, Vyas Sekar, Asad Awan, Ion Stoica, Dilip Joseph, Aditya Ganjam, Jibin Zhan, and Hui Zhang, ACM SIGCOMM 2011. *For pioneering large-scale measurements and in-depth study of how video quality affects user engagement, which shed light on metrics to infer video quality of experience and has had a long-lasting impact on the optimization of adaptive streaming.*

Finally, the ACM SIGCOMM Networked Systems Award winner was Conviva, *For sustained impact, from the earliest days of translating published research to a successful real-world production system, making a significant impact on real-world streaming systems and CDNs, and then continuing to give back to the research community via data sharing and publications.* The Conviva awards was accepted by Hui Zhang.

**CONFERENCE ACTIVITY**

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, ISOC, IRTF Applied Networking Research Workshop. In addition to conferences we sponsor or co-sponsor, we are in-cooperation with a number of events.

This past year saw a gradual shift from all-virtual to hybrid meetings, except for program committee meetings, where we are strongly encouraging that virtual meetings be retained to reduce carbon footprint and make it easier for some participants to take part. We recognize that virtual PC meetings may also have disadvantages over in person meetings.

**SPECIAL PROJECTS AND NON-CONFERENCE PROGRAMS**

The SIG continued its aggressive efforts to focus on special projects and other activities in support of our community across the globe.

The SIG kept up its 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 continued to co-operate **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 every other 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) to how to improve diversity and inclusion in the systems and networking community. The series will continue into the fall, where we expect to have talks on "virtualization at the edge", the future of 5G wireless, as well as our first student-run session, allowing students from Brazil, China, and others across the world to meet and discuss issues of common interest.

The SIG also released a beta launch **LUDI**, its online platform for discovering and sharing resources for teaching, researching, and learning about computer networking. The platform allows a user to search for a variety of materials, ranging from simulators and emulation platforms, to homework and lab assignments, to professional societies and chat services. The platform then displays information about the resource along with some simple guidance on how the resource could be used. Users may post comments about the resource as well as "upvote" (not downvote) resources they like. Along with some simple curation, we hope the site can become a useful and reliable repository of information for the community. It is our hope this site can make it easier for those in our community who have developed useful resources to share them with others, for students to more easily figure out which resources are the best to use and the differences between them. If the platform is successful, we hope to make it available to other SIGs and post resources from other communities.

While many are returning to in-person activities it is also clear the pandemic continues to place a damper on interactions in our community. The SIG continues to operate 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 3,400 members (approximately 400 of which actively post or read a message during any particular week), 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 offer emotional and wellness support to students during these challenging times.

We believe the community will need guidance and support as we return to in-person activities. To address this, the SIG was heavily involved in the planning and operations of SIGCOMM'22. The SIG assisted in the creation of a database of industry contacts for sponsorship of the conference, as well as assisted in reaching out to sponsors for funding. This year, the conference received over $200,000 in funding, and a Diamond sponsor, milestones never achieved in the history of the conference (to the best of our knowledge).

**KEY ISSUES IN THE NEXT FEW YEARS**

As outlined above, the future of conferences as we come out of the COVID era needs consideration. This future includes issues such as what mix of in person and online to support but goes beyond the format question to potential reconsideration of the number and activities of in person meetings. At SIGCOMM 2023, multiple papers required virtual presentations because none of the authors could attend, due to COVID concerns or visa issues. We should expect challenges with travel to persist.

Our DEI survey indicates that we have some work to do in ensuring underrepresented groups feel included in SIGCOMM. We are also planning renewed efforts to build community in regions of the world that have not historically participated in SIGCOMM.

**SIGecom FY’22 Annual Report**

**July 2021 – June 2022**

**Submitted by: Nicole Immorlica, Scott Kominers, and Katrina Ligett**

The ACM Special Interest Group on Economics and Computation (SIGecom) is the leading professional organization in the field of economics and computation. Our interdisciplinary work is united by the common goal of using economic ideas and computational reasoning to understand and improve social and economic interactions. SIGecom seeks to encourage research and applications at the interface between computer science and economics, and promote the sharing of new ideas across those and related disciplines.

SIGecom's three primary activities include: convening technical events; adjudicating awards; and managing community announcements.  Our main technical events are the annual *Conference on Economics and Computation* (EC), the *SIGecom Winter Meetings*, and (new this year) the *SIGecom Seminar Series*. Our awards include EC best paper awards, the dissertation award and the test-of-time award.  This year we also introduced two career awards: the Mid-Career Award and the Lifetime Achievement Award.  Our community announcements are disseminated through a combination of the electronic newsletter *SIGecom Exchanges*, our moderated mailing list, and our Twitter account.

The *22nd ACM Conference on Economics and Computation* (EC'22) was held in hybrid format with the main physical activities from July 11-15, 2022, and with accompanying virtual events in the surrounding weeks. The hybrid format made it possible to access content and interact as a physical or virtual speaker/attendee.  We ran fully virtual pre-conference events including tutorials, a mentoring workshop, contributed posters, and preview posters and lightning talks of accepted papers. During the main conference, we ran a fully hybrid event with an AV system that allowed physical speakers/attendees in Boulder and virtual speakers/attendees on Gather.town to interact during talk sessions.  The EC’22 program chairs were Sven Seuken (University of Zurich and ETH AI Center) and Ilya Segal (Stanford University); the general chair was David Pennock (Rutgers University); the local chairs were Rafael M. Frongillo (University of Colorado Boulder) and Bo Waggoner (University of Colorado Boulder). We received 549 technical paper submissions (approximately 10% more than last year), of which 150 were accepted for presentation.  We had 579 registrants of which 270 were physical.

The *2nd ACM SIGecom Winter Meeting* took place virtually on February 23, 2022. The workshop lasted six hours, combining a technical workshop program with ample opportunity for socialization and networking. The goals of the meeting were: a) to bring the SIGecom community together in a broadly accessible and free virtual environment; and b) to expose the SIGecom community to emerging research topics that are adjacent to SIGecom.  The 2022 meetings were organized by Mallesh Pai (Rice University) and Aaron Roth (UPenn) and brought together researchers from economics and computation and adjacent communities to focus on the topic of fairness (broadly construed). The format included tutorials by Aislinn Bohren (UPenn) and Juba Ziani (GeorgiaTech), a fireside chat with Cynthia Dwork (Harvard) and Sendhil Mullainathan (UChicago), and invited talks on current related research. The meeting emphasized being inclusive to young researchers and those outside the core field, while also encouraging active participation and networking.

The *SIGecom Seminar Series* takes place virtually on Fridays from 11am-12pm ET (new this year).  The series is fully student-led.  This year’s organizers are Keegan Harris (CMU) and Clayton Thomas (Princeton).  The faculty advisor is Chara Podimata (MIT).  The seminar series plays recordings of EC talks in a Gather.town venue.  Speakers are present to answer questions and students are encouraged to attend and interact with speakers.  The series is intended to provide young researchers a chance to meet EC authors, and offers the community a chance to view talks in a communal setting that they missed during the EC conference.  The series regularly attracts around 20 attendees per session.

The SIG gave four awards in 2022. First, we awarded the Test of Time Award to:

* “The complexity of computing a Nash equilibrium” by Constantinos Daskalakis, Paul W. Goldberg, and Christos H. Papadimitriou
  + Proceedings of the 38th Annual ACM Symposium on Theory of Computing (STOC), 2006, pp. 71–78.
  + SIAM Journal on Computing 39(3), 2009, pp. 129–259.
* “Settling the complexity of computing two-player Nash equilibria” by Xi Chen, Xiaotie Deng, and Shang-Hua Teng
  + Proceedings of the 47th Annual Symposium on Foundations of Computer Science (FOCS), 2006, pp. 261–272.
  + Journal of the ACM 56(3), 2009, pp. 14–57.

for settling the complexity of computing a Nash equilibrium.  Second, we awarded the Doctoral Dissertation Award to:

Ellen Vitercik (Carnegie Mellon), “Automated Algorithm and Mechanism Configuration”

for “extensive contributions toward establishing the rigorous foundations of automated algorithm configuration, where data-driven machine learning and optimization are used to fine tune an algorithm's parameters for application-specific performance guarantees.” Honorable mentions were Manish Raghavan (Cornell) and Mahsa Derakhshan (Maryland). Third, we issued two best paper awards for papers published in EC’22. The Best Paper was:

“The Science of the Deal: Optimal Bargaining on eBay Using Deep Reinforcement Learning” by Etan Green and Barry Plunkett

The Best Paper with a Student Lead Author was:

“Computationally Tractable Choice” by Modibo Camara, which also received the Exemplary Theory Track recognition.  The EC’22 conference also recognized “exemplary” papers in each of the conference’s other tracks (although these are not official SIG awards):

* Exemplary Applied Modeling Track Paper: The Challenge of Understanding What Users Want: Inconsistent Preferences and Engagement Optimization by Jon Kleinberg, Sendhil Mullainathan, and Manish Raghavan
* Exemplary AI Track Paper: Artificial Intelligence and Auction Design by Martino Banchio and Andrzej Skrzypacz
* Exemplary Empirics Track Paper: Algorithmic Pricing Facilitates Tacit Collusion: Evidence from E-Commerce by Leon Musolff

This year, SIGecom introduced two new career awards.  The SIGecom Lifetime Achievement Award recognizes outstanding individuals who have made significant and long-lasting contributions to the field of economics and computation, influencing and setting direction for decades of research. The SIGecom MidCareer Award recognizes outstanding individuals whose contributions have had great impact in the field of economics and computation and whose employment as a faculty member or full-time industrial researcher started within the past 15 years (or equivalent duration in case of career interruption). These two new awards honor overall bodies and follow a precedent common in other SIGs. We hope they will enable prominent SIGecom members to gain significant visibility in the economics and computation community, in computer science, in academia, and in the public eye.

Our *Exchanges* newsletter continues to publish two issues annually. The current editors are Irene Lo (Stanford) and Inbal Talgam Cohen (Technion). In a long-standing effort to improve the EC academic job market, *Exchanges* again collected and published bios of all job market candidates. New this year, *Exchanges* published a set of student-led interviews of speakers from the SIGecom Winter Meetings.  SIGecom also maintains a website, a Twitter account, a YouTube channel, and a mailing list.  The information director, who manages these resources, is Yannai Gonczarowski (Harvard).

SIGecom’s volunteer development is extremely strong. Many dozens of people serve across a wide range of roles: in the conference organization committee; organizing committees for workshops and tutorials; award committees; SIGecom Exchanges editors; SIG executive; and a wide variety of ad hoc committees and special-topic volunteer roles. We are extremely conscious of diversity—particularly, but not limited to, diversity across research areas, gender, and countries of origin—and have been very successful in ensuring that our volunteer leaders are diverse, reflective of the community at large, and top-caliber researchers without exception.

1. 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-1)