**SIGACCESS FY’18 Annual Report**

**July 2017 - June 2018  
Submitted by: Shari Trewin, SIGACCESS Chair**

*SIGACCESS promotes the professional interests of computing personnel with disabilities and the application of computing and information technology in solving relevant disability problems. The SIG also strives to educate the public to support careers for people with disabilities.*

## Research and Innovation in Accessibility

Accessibility research seeks to understand and overcome access barriers, and many accessibility researchers are exploring the potential of recent advances in artificial intelligence (AI). With recent significant breakthroughs in the quality of automatic speech recognition (ASR), a prominent theme at this year’s ASSETS conference was the usability of ASR technology for people who are Deaf or hard of hearing, as both a means to generate video captions, and also to augment face to face communication with hearing people. This year’s ASSETS Best Paper was **Evaluating the Usability of Automatically Generated Captions for People who are Deaf or Hard of Hearing**, by Sushant Kafle and Matt Huenerfauth of Rochester Institute of Technology, which presented a new metric for evaluation of video captions generated through speech recognition.

Another prominent research theme is technology to support safe navigation for people with visual impairment, where machine vision and sensor data analysis can also play a significant role. This theme was represented by several papers at the conference, including the Best Student Paper, **Technology-Mediated Sight: A Case Study of Early Adopters of a Low Vision Assistive Technology** by Annuska Zolyomi, Anushree Shukla, and Jaime Snyder of the University of Washington, Seattle, WA. In this paper, the authors investigate the social and emotional impacts associated with adoption of a head-mounted low-vision assistive technology.

Other prominent research themes include novel tactile, haptic and augmented reality interaction techniques; and methods for working with specific populations, such as children with little verbal communication. Other glimpses of the future of assistive technology included a first person ‘cyborg pride’ report on the experience of using and developing a prosthetic arm, and its impact on sense of self.

Looking back over the development of the field, in 2017 the **SIGACCESS ASSETS Paper Impact Award** recognised W. Keith Edwards, Elizabeth Mynatt and Kathryn Stockton from Georgia Institute of Technology for their paper “**Providing access to graphical user interfaces—not graphical screens”** published at the first ASSETS conference in 1994. The paper describes the Mercator project, which had a significant and lasting impact on accessibility to graphical user interfaces. It was foundational in enabling and setting the direction of screen reader technology for X Windows, and opening up opportunities for new assistive technologies.

## SIGACCESS Programs

Our flagship conference, ASSETS 2017 was held in Baltimore, MD, USA, chaired by Amy Hurst of the University of Maryland Baltimore County, with Leah Findlater of the University of Maryland and Meredith Ringel Morris of Microsoft Research as Program Chairs.

This year, we helped to grow and diversify the field of accessibility through the ACM Student Research Competition, the ASSETS Doctoral Consortium (sponsored by NSF), a mentoring program for new authors, and 4 travel scholarship awards.

SIGACCESS travel award recipients, two of whom are people with disabilities, were:

* Dr Sayan Sarcar, Kolchi University of Technology, Japan, presented a poster on adaptive smartphone interfaces for older adults
* Lucas Smirek, Stuttgart Media University, Germany attended the doctoral consortium to present his work on adaptive user interfaces
* Yamini Karanam, Indiana University, USA presented a poster on technology-mediated visualizations of quality of life for people with acquired brain injury
* Roxana Ramirez Herrera, University College London, UK presented a poster on a sensor-based system to improve the acquisition of powered mobility skills in children.

SIGACCESS also hosted Jazette Johnson, an ACM-W scholarship awardee who chose to attend ASSETS, and welcomed the formation of a new Chapter in Saudi Arabia.

SIGACCESS serves both the accessibility research community and the broader ACM community by maintaining a set of resources to support improved accessibility in academic publications and events. This year, we added a tool for conference organizers, which prompts for information about the conference and generates HTML for an accessibility FAQ web page for the conference. SIGACCESS and SIGCHI are adopting a policy of having this page located at /access on the websites of all their conferences.

## Key Issues

One of the key issues facing the accessibility research community over the next 2-3 years is to encourage research work on machine learning techniques for accessibility challenges, and the two award-winning papers at this year’s ASSETS’17 conference are evidence of this trend. From a growth perspective, a concern for the SIG will be in promoting increased participation in the computing accessibility research community among researchers with expertise in machine learning, who may be unaware of the opportunities for their technologies in the accessibility domain – or may be unaware of conventions and best-practices in the field of accessibility when conducting research with users with disabilities. Over the next few years, it may be increasingly important for the SIG to cross-advertise the ASSETS conference among AI and machine-learning researchers, and to ensure that researchers who are new to submitting their research to the ASSETS conference are aware of the valuable mentoring program for first-time authors, which can help them frame their work in this field.

Another barrier to increased involvement of artificial intelligence researchers in addressing key problems in the field of computing accessibility is a lack of agreed benchmarks or standard datasets for objective comparison of solutions. To encourage progress, SIGACCESS is planning to launch a call for data contributions, with a view to building such datasets. Examples could be sign language video with translations, scientific images with text descriptions, or a corpus of conversations held through AAC (augmentative & alternative communication) devices. Many of these resources may already exist among researchers in the field, but some efforts at the SIG- or conference-level may shed light on the availability of such data.

Of course, as AI has great promise for the field of accessibility, there are also potential risks: Across the field of computing, researchers are increasingly concerned about the potential for bias to be introduced into artificial intelligence systems through the use of training datasets that are unrepresentative or which may contain bias implicitly in human-provided judgments or labels in the data. The issue of exclusion is a major concern, when considering users with disabilities, who some researchers may not include in data-collection efforts due to logistical concerns. A machine learning system trained only on data from people without disabilities, or without older adults, could discriminate against these groups, or simply fail to work. Again, a push to gather appropriate training data for such systems, or to develop ways of testing for bias could be responses from the accessibility research community that would have a positive impact.

At the application-level, there is also potential risk for AI-based technologies to inadvertently introduce new barriers for users with disabilities. For instance, over the past few years, some researchers in our community have begun to investigate the accessibility of voice-based personal assistant technologies, especially among users who have difficulty in using speech. Intelligent systems for wearable fitness/activity tracking or biometric authentication are additional emerging technologies whose accessibility for diverse users may require attention from our community.

On a more celebratory note, a priority for our SIG in the next two years will be to commemorate the 25th anniversary of the ASSETS conference, which will occur in 2019. Plans have already begun for how to enhance the program at the ASSETS’19 conference to acknowledge this milestone, and to take advantage of this opportunity to reflect and consider how our field has developed over the past quarter century. SIGACCESS hopes this broader perspective may enable our membership to reflect how the foundation of prior work by pioneering members of our community may shed light on future challenges and opportunities in our discipline.

**SIGACT FY’18 Annual Report**

**July 2017 - June 2018  
Submitted by: Michael Mitzenmacher, SIGACT Chair**

**SIGACT Mission Statement:**

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

**1. Awards**

* 2018 Gödel Prize: This was awarded to **Oded Regev** for his paper “On lattices, learning with errors, random linear codes, and cryptography,” Journal of the ACM, volume 56, issue 6, 2009 (preliminary version in the 37th annual Symposium on Theory of Computing, STOC 2005). Regev’s paper introduced the Learning With Errors (LWE) problem, and proved its average-case hardness assuming the worst-case (quantum) hardness of various well-studied problems on point lattices in Rn. It also gave an LWE-based public-key encryption scheme that is much simpler and more efficient than prior ones having similar worst-case hardness guarantees; this system has served as the foundation for countless subsequent works. Lastly, the paper introduced elegant and powerful techniques, including a beautiful quantum algorithm, for the study of lattice problems in cryptography and computational complexity. Regev’s work has ushered in a revolution in cryptography, in both theory and practice. On the theoretical side, LWE has served as a simple and yet amazingly versatile foundation for nearly every kind of cryptographic object imaginable—along with many that were unimaginable until recently, and which still have no known constructions without LWE. Toward the practical end, LWE and its direct descendants are at the heart of several efficient real-world cryptosystems.
* 2018 Knuth Prize: currently under review.
* 2016 Paris Kanellakis Theory and Practice Award: **Scott Shenker** was honored for pioneering contributions to fair queueing in packet-switching networks, which had a major impact on modern practice in computer communication. Shenker’s work was fundamental to helping the Internet grow from a tool used by a small community of researchers, to a staple of daily life that is used by billions of people. Since the internet was introduced, demand has grown for the ability of computer networks to transmit voice and data simultaneously. Traditionally, this was a challenge, as early networks were not designed to offer integrated services. Shenker was the first to develop the first practical fair queueing algorithm for packet-switching networks, which provided equitable access to transmission bandwidth for different grades of service quality. Many of the commercial routers that make up the internet today use Shenker’s algorithms..
* 2018 Edsger W. Dijkstra Prize in Distributed Computing: **B. Alpern and F.B. Schneider:** Defining liveness, published in Information Processing Letters 21(4), October 1985, pages 181-185.
* STOC 2018 Best Paper Award: “A Constant-Factor Approximation Algorithm for the Asymmetric Traveling Salesman Problem,” by **Ola Svensson, Jakub Tarnawski, László Végh**.
* Danny Lewin Best Student Paper Awards (STOC 2018): “An almost-linear time algorithm for uniform random spanning tree generation” by **Aaron Schild**.
* SIGACT made approximately 50 student travel awards to allow students to attend the 2018 STOC conference.

**2. Significant papers on new areas published in proceedings**

Below we highlight some of the “Best Paper” award winners from various SIGACT conferences. (We limit ourselves to a subset of these papers for space.)

**STOC 2018**

The ACM Symposium on Theory of Computing (STOC 2018) covers much of computer science theory.

Ola Svensson, Jakub Tarnawski, and László Végh, in their paper “A Constant-Factor Approximation Algorithm for the Asymmetric Traveling Salesman Problem,” which won a Best Paper Award, provided the first constant-factor approximation algorithm for this version of the traveling saleman problem.

Aaron Schild, in his paper “An almost-linear time algorithm for uniform random spanning tree generation”, provided a new algorithm for uniform spanning tree generation that makes use of fast Laplacian linear system solvers to provide shortcuts to speed up the well-known random walk approach to generate spanning trees uniformly.

**SODA 2018**

SODA is a major conference that focuses on algorithms and combinatorics.

Bingkai Lin’s paper “The Parameterized Complexity of k-Biclique” at SODA 2018 received both a Best Student Paper and Best Paper Award. The paper considers the parametrized complexity of the problem, showing via reductions that there can be no algorithm for finding if a graph contains a complete k-biclique that runs in time f(k)no(k) unless the Exponential Time Hypothesis fails.

**SPAA 2018**

SPAA is a major conference that focuses on the theory of parallel algorithms and architecture for parallel computation

Laxman Dhulipala, Guy E. Blelloch, and Julian Shun’s Best Paper at SPAA 2018, ”Theoretically Efficient Parallel Graph Algorithms Can be Fast and Scalable”, shows that theoretically-efficient parallel graph algorithms can scale to the largest publicly-available graphs using a single machine with a terabyte of RAM, processing them in minutes. The authors give implementations of theoretically-efficient parallel algorithms for 13 important graph problems, and present the optimizations and techniques that we used in the implementation that allow the running times of their implementations to outperform existing state-of-the-art implementations on the largest real-world graphs. The authors have also created a problem-based benchmark suite containing these problems that is publicly-available.

**PODC 2018**

PODC is a major conference that focuses on the theory of distributed computing.

The best paper award at PODC 2018 went to Leonid Barenboim, Michael Elkin, and Uri Goldenberg for the paper “Locally-Iterative Distributed (Delta + 1)-Coloring below Szegedy-Vishwanathan Barrier, and Applications to Self-Stabilization and to Restricted-Bandwidth Models.” The authors break a conjectures lower bound for certain coloring problems, allowing them to achieve significant improvements for dynamic, self-stabilizing and bandwidth-restricted settings.

**3. Significant programs that provided a springboard for further technical efforts**

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

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

SIGACT helped support the creation of SIGLOG the within ACM, which is now the home of LICS, a conference SIGACT previously co-sponsored.

**4. Innovative programs which provide service to our technical community**

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

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

SIGACT has co-sponsored the SIGACT CRA-W Grad Cohort Workshop and the Women in Theory Workshop.

**5. Significant changes from the previous year**

The major conference run through SIGACT is the Symposium on Theory of Computation (STOC). For the second year, we attempted a major expansion of STOC, under the label “TheoryFest”. The change lengthened the program to 5 days. While it remained 3 days of paper presentations, we increased to three parallel sessions to allow a modest increase in accepted papers. There was a day of tutorials and workshops; a panel session on directions in theory; poster sessions in some evenings; and a large number of invited speakers across a number of areas. Again the event seemed successful, in that there was strong feedback that the event was well enjoyed by the participants. We did see an increase in the number of attendees, but it was less than we had desired. We are planning to keep this format in future years, and will have to evaluate as we continue how the new format is working. In particular, we may have to raise conference rates in order to balance the budget for the conference under the new framework. As the current conference fees are very low, this should not be problematic.

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

A notable major change is we have just had our elections, with a new SIGACT EC board in place. They seem very energetic and I believe they will do an outstanding job.

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

Funding and articulating the importance of theoretical computer science are perennial

issues that are being addressed by the Committee for the Advancement of Theoretical

Computer Science (CATCS) in conjunction with SIGACT.

Membership in SIGACT has been declining. Since generally there are minimal specific benefits for SIGACT membership after joining the ACM, this is perhaps not surprising. The new EC may wish to adopt a different approach, such as raising conference fees slightly for allowing any attendee of a SIGACT-sponsored conference to join SIGACT.

Another key issue relates to open access. By and large, the community is deeply supportive of open access and is encouraged by recent efforts by the ACM to make conference papers more readily and freely accessible. A natural consequence of this may be decreased funding for SIGACT through the ACM Digital Library program, which provides the bulk of our discretionary budget. We are actively monitoring this budget issue and are ready to engage our members in discussions regarding possible outcomes should significant changes occur.

**6. Volunteer Development Process**

SIGACT does not have a consistent, suitable volunteer development process. This is another issue the SIGACT community will have to deal with in the coming years, but it has been a significant issue for some time. SIGACT would appreciate help or advice in this area.

**SIGAda FY’18 Annual Report**

**July 2017 - June 2018  
Submitted by: Drew Hamilton, SIGAda Chair**

**AWARDS**

Started in 1994, the ACM SIGAda Awards recognize individuals and organizations that have made outstanding contributions to the Ada community and to SIGAda. This year one of the awards was renamed in honor of Robert Dewar, a key contributor to the Ada community and a co-founder of Ada Core Technologies, who died in 2015. The “Robert Dewar Award for Outstanding Ada Community Contributions” is given for broad, lasting contributions to Ada technology and usage. The SIGAda Distinguished Service Award is given for exceptional contributions to SIGAda activities and products.

This year the **Robert Dewar Award for Outstanding Ada Community Contributions** was awarded to Dr. Peter Chapin from the Vermont Technical College. Here are some highlights of Peter's contributions to the Ada community:

* Peter developed the tool chain, wrote some of the software and supervised the students writing the rest of the software for the Vermont Lunar CubeSat ([cubesatlab.org](http://cubesatlab.org/)). The software was written in SPARK/Ada, converted to C with AdaMagic (as there was no Ada compiler for the TI MSP430 processor in the CubeSat) and compiled with a Rowley Associates CrossWorks for MSP430 C compiler. This CubeSat is still the only spacecraft programmed in SPARK/Ada and the only successful university satellite on the East coast. It was launched with 11 other university CubeSats on November 19, 2013, and was the only one that fully worked. We believe this is due to the high integrity of the SPARK/Ada technology.
* Peter is now coordinating work on CubedOS, a SPARK/Ada implementation of a software framework for small spacecraft. This is intended to be released as an open source project to allow other groups to have a high integrity software base for their CubeSats, which currently have a very high failure rate.
* Peter is the coauthor, with John McCormick of Building High Integrity Applications with SPARK, the only book on SPARK 2014.

No nominations were received in 2017 for the **ACM SIGAda Distinguished Service Award**.

**CONFERENCES/WORKSHOPS**

* **HILT (High Integrity Language Technology) 2018**

The SIGAda Executive Committee has decided to continue a two-year cycle for High-Integrity Language Technology (HILT) events.  
  
The HILT series of conferences and workshops focuses on the use of High Integrity Language Technology to address challenging issues in the engineering of software-intensive critical systems. The fifth event will be held 5-6 Nov 2018 in Boston, MA.

The High Integrity Language Technology [(HILT) 2018 Workshop](http://sigada.org/conf/hilt2018) is focused on the cyber-resilience needs of critical software systems, where such a system must be trusted to maintain a continual delivery of services, as well as ensuring safety in its operations. Such needs have common goals and shared strategies, tools, and techniques, recognizing the multiple interactions between security and safety.

We encourage papers and extended abstracts relating to:

* Language features that can be used to build security and/or safety into software-intensive systems; Approaches to apply effectively the emerging technologies of AI and Machine Learning in critical software systems;
* Mechanisms that can be used to understand, certify, and manage systems that are “data driven,” relying on “soft code,” where control flow and algorithms are expressed using data rather than “hard code” expressed directly in programming languages;
* Extending contract-based programming to specifying security resistance and resilience properties as well as safety and/or correctness properties;
* Strategies to minimize risk when applying complex software requirements to cyber-physical systems;
* Modeling and/or programming language features and analysis techniques that aid in code analysis and verification and that increase the level of abstraction and expressiveness;
* Language features that support continuous requirements maturation to support evolving needs, particularly in cyber-physical systems, while ensuring that security and safety properties are preserved.

This workshop is designed as a forum for communities of researchers and practitioners from academic, industrial, and governmental settings, to come together, share experiences, and forge partnerships focused on integrating and deploying tool and language combinations to address the challenges of building cyber-resilient software-intensive systems. The workshop will be a combination of presentations and panel discussions, with one or more invited speakers.

Workshop Co-Chairs

* Bill Bail, MITRE
* Tucker Taft, AdaCore, Inc

Organizing Committee

* Dirk Craeynest, ACM SIGAda International Representative, KU Leuven
* Drew Hamilton, Chair, ACM SIGAda, Mississippi State University, CCI
* Clyde Roby, Secretary-Treasurer, ACM SIGAda, Institute for Defense Analyses
* Alok Srivastava, Editor, ACM Ada Letters, Engility Corp.
* Ricky E. Sward, Past Chair, ACM SIGAda, MITRE

URLs:

* SPLASH 2018: [http://www.splashcon.org](http://www.splashcon.org/)
* HILT 2018 Information: <http://sigada.org/conf/hilt2018>
* HILT 2018 Submissions: <https://hilt18.hotcrp.com/>
* ACM SIGAda: [http://sigada.org](http://sigada.org/)

**PROGRAMS**

* **Significant Programs that provided a springboard for further technical efforts**

A formal liaison exists between SIGAda and ISO WG9. ISO/IEC JTC1/SC22 WG9 is that body of international representatives responsible for the maintenance and evolution of the Ada International Standard. The National Bodies represented on WG9 have included Belgium, Canada, France, Germany, Italy, Japan, Switzerland, the United Kingdom, and the United States.

In March 2007 the ISO (the International Organization for Standardization) in Geneva, Switzerland announced the formal completion of the process to revise the Ada 95 language, with the publication of the Ada 2005 standard — officially named ISO/IEC 8652:1995/Amd 1:2007. This announcement culminates a collaborative international effort under ISO's Ada Working Group (WG9) to enhance the 1995 version of the Ada language.

In November 2012, ISO (the International Organization for Standardization) in Geneva, Switzerland, announced the successful 14-0 ballot on the final draft of the Ada 2012 Standard, the document arising from the collaborative international process under ISO's Ada Working Group (WG9) to revise the Ada 2005 standard.  The official publication of Ada 2012 occurred in December 2012 -- officially named ISO/IEC 8652:2012.

The ISO WG9 working group has semi-annual meetings of WG 9 scheduled to coincide with the major conferences organized by ACM SIGAda and Ada-Europe. Officials of both organizations are active participants in the work of WG 9. Both groups have the status of Category C liaison with WG 9.

In January 2019, Technical Report 24772-2 (Guidance to avoiding vulnerabilities in programming languages – Vulnerability descriptions for the programming language Ada) was successfully balloted and forwarded to WG23 for publication.

At least one SIGAda Officer participates and represents the membership at the WG9 meetings held twice each year. This year the meetings were in Pittsburgh, PA (at the SIGAda HILT 2016 workshop) and at the 2018 Ada Europe conference in Lisbon, Portugal. Tucker Taft (Vice Chair) represented SIGAda for these meetings and in the balloting.

* **Innovative Programs which provide service to some part of our technical community**

Since 1994 SIGAda has conducted an “Ada Awareness Initiative.” It includes our SIGAda professional booth display unit in exhibition halls at important software engineering conferences, as well as encouraging other Ada awareness activities, such as the “Make with Ada” contest sponsored by AdaCore, and an Ada “room” at the annual FOSDEM open source conference in Belgium. These activities let folks know that Ada is very much alive and a sound part of any software engineering effort having real-time, high integrity, high-assurance, and highly distributed requirements.

At the SIGAda booth, SIGAda provides various Ada-advocacy materials and makes available Ada experts (our booth staff volunteers) who can intelligently answer questions, provide pointers and help, and debunk the misinformation about Ada that many attendees at these events have. These programs continue to be successful and are viewed as an important thrust by the SIGAda membership.

A primary motivation the fiscal health of SIGAda is to be able to continue these outreach efforts.

**FUTURE ISSUES**

* **Summary of key issues to deal with in the next 2-3 years**

As security issues become more and more urgent in the software industry, there has been increased attention on formal methods as a way to reduce security vulnerabilities within system software. The contract-based programming features of Ada 2012 have emerged as a very successful addition to the safety- and security-oriented features of Ada, allowing Ada to remain on the vanguard of technologies to address the growing security challenge. Over the next 2 years, SIGAda will continue to work with Ada tool vendors and other Ada-oriented organizations such as the Ada Resource Association, Ada-Europe, and the International Ada Real-Time Workshop (IRTAW) to increase the awareness of Ada and its value to the industrial community, which is facing growing security threats.

SIGAda and Ada-Europe in particular have been discussing additional ways to coordinate our activities and share content across our user publications, to ensure efficient and effective connections to the industrial and academic computer science and information technology communities. We have just completed our first iteration of including selected Ada-Europe content into Ada Letters.

We will continue to publish two to three issues of the Ada Letters newsletter each year, seek participation in the form of contributing articles and papers, and publish special issues providing archived proceedings for both the HILT and IRTAW workshops. To summarize, SIGAda is focused on providing the greatest return on investment to our members by continuing our efforts to expand and improve our value to our membership.

* **SIGAda conference and workshop activity**

As mentioned above, the SIGAda executive committee has decided to continue a bi-annual workshop schedule, with the next SIGAda/HILT workshop planned for fall of 2018, focused on secure software development. In conjunction with annual Ada-Europe conferences and bi-annual IRTAW workshops, we believe this schedule best fits the scale of the Ada community, and the monetary and organizational resources of ACM SIGAda.

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**SIGAI FY’18 Annual Report**

**July 2017 - June 2018  
Submitted by: Sven Koenig, SIGAI Chair**

We are happy to present the annual activity report of ACM SIGAI, covering the period from July 2017 to June 2018.

The scope of ACM SIGAI consists of the study of intelligence and its realization in computer systems (see also our website at sigai.acm.org. This includes areas such as autonomous agents, cognitive modeling, computer vision, constraint programming, human language technologies, intelligent user interfaces, knowledge discovery, knowledge representation and reasoning, machine learning, planning and search, problem solving, and robotics.

Our members come from academia, industry, and government agencies worldwide. We are thrilled to be able to report that our membership numbers increased by about 10 percent over the past year!

The terms of three of our officers (one of the two education activities officers, one of the two newsletter co-editors in chief, and the information officer) came to an end. We thank them for their valuable service and have now started to provide certificates of appreciation for outgoing officers. We appointed a new information officer and are currently looking for a new newsletter co-editor in chief and additional column editors. We also created and filled two new officer positions to be able to serve our members even better, namely an AI and society officer and a labor market officer.

**Conferences**

We helped to found the AAAI/ACM AI, Ethics, and Society (AIES) conference, a high-profile, multi-disciplinary meeting that addresses the impact of AI on society (including aspects such as value alignment, data handling and bias, regulations, and workforce impact) in a scientific context. We have a 50 percent financial stake in AIES, which we expect to become the prime international conference in the field. The inaugural AIES, held on February 1–3, 2018 in New Orleans directly before the AAAI conference, was a great success, attracting 162 submissions and selling out (see a recent summary in our newsletter AI Matters). The AI and society officer organized the AIES doctoral consortium, which received over 60 submissions but could only accept 20 students. AIES 2019 is now in the planning phase.

We sponsored the following conferences in addition to AIES 2018:

\* The IEEE/WIC/ACM International Conference on Web Intelligence (WI 2017),

Leipzig, Germany, August 23-26, 2017

\* The 32nd International Conference on Automated Software Engineering,

Urbana-Champaign, USA, October 30-November 3, 2017

\* The 9th International Conference on Knowledge Capture (K-CAP 2017), Austin, TX, USA,

December 4-6, 2017

\* The CRA Summit on Technology and Jobs, Washington D.C., USA, December 12, 2017

\* The 23rd International Conference on Intelligent User Interfaces (IUI

2018), Tokyo, Japan, March 7-11, 2018

\* The 13th Annual ACM/IEEE International Conference on Human Robot

Interaction (HRI 2018), Chicago, USA, March 5-8, 2018

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

\* The 20th International Conference on Enterprise Information Systems

(ICEIS 2018), Funchal, Portugal, March 21-24, 2018

\* The 17th International Conference on Autonomous Agents and Multiagent

Systems (AAMAS 2018), Stockholm, Sweden, July 10-15, 2018

\* The 33rd IEEE/ACM International Conference on Automated Software

Engineering (ASE 2018), Montpellier, France, September 3-7, 2018

\* The 18th International Conference on Intelligent Virtual Agents (IVA

2018), Sydney, November 5-8, 2018

\* The 2nd ACM Computer Science in Cars Symposium (CSCS 2018), Munich,

Germany, September 13-14, 2018

\* The 10th International Joint Conference on Knowledge Discovery,

Knowledge Engineering and Knowledge Management (IC3K 2018), Seville, Spain,

September 18-20, 2018

\* International Conference on the Foundations of Digital Games (FDG

2018), Malmö, Sweden, August 7-10, 2018

\* The 10th International Joint Conference on Computational Intelligence,

Seville, Spain, September 18-20, 2018

\* The 15th International Conference on Informatics in Control, Automation,

and Robotics (ICINCO 2018), Porto, Portugal, July 29-31, 2018

\* The First IEEE International Conference on Artificial Intelligence and

Virtual Reality (IEEE-AIVR 2018), Taichung, Taiwan, December 10-12, 2018

ACM SIGAI membership benefits include reduced registration fees for many of the in-cooperation and sponsored conferences and access to many proceedings in the ACM Digital Library.

We also have an agreement with the Association for the Advancement of AI (AAAI) to jointly organize the annual joint job fair at the AAAI conference, where attendees can find out about job and internship opportunities from representatives from industry, universities, and other organizations. The job fair in 2018 was run by two of our officers and attracted over 30 organizations offering jobs and hundreds of job seekers (see the recent summary in AI Matters). Similarly, we have an agreement with AAAI to jointly sponsor the annual joint doctoral consortium at the AAAI conference, which provides an opportunity for Ph.D. students to discuss their research interests and career objectives with the other participants and a group of established AI researchers that act as their mentors.

**Awards**

We started a new award, the ACM SIGAI Industry Award for Excellence in AI, which will be given annually to an individual or team in industry who created a fielded AI application in recent years that demonstrates the power of AI techniques via a combination of the following features: novelty of application area, novelty, and technical excellence of the approach, importance of AI techniques for the approach, and actual and predicted societal impact of the application. The award will be accompanied by a prize of US $5,000 and be presented at the International Joint Conference on AI (IJCAI), starting in

2019 - thanks to a collaboration with the IJCAI Board of Trustees.

The ACM SIGAI Autonomous Agents Research Award was presented at the International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2018 - thanks to a collaboration with the International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS) - to Craig Boutilier, Principal Research Scientist at Google, for his seminal contributions to research on decision-making under uncertainty, game theory, and computational social choice.

**Member Support**

We support our members in different ways. For example, we nominate them for awards or support their nominations. We also nominate publications of recent, significant, and exciting AI research results that are of general interest to the computer science research community to the Research Highlights track of the Communications of the ACM (CACM) to make important AI research results visible to many computer scientists. We concentrate our financial support on our student members and provided funding to conferences so that they can award scholarships to their student attendees. We also supported the review process for the applications of students to attend the Heidelberg laureate forum to meet the recipients of the most prestigious awards in mathematics and computer science, including the ACM A.M. Turing Award and the ACM Prize in Computing.

To understand the interests of our members better, we conducted a membership survey and learned, among other things, that the majority of our members have been SIGAI members for two or more years. They are interested in AI resources (such as digital content access and webinars) as well as networking, and consider it important that we cover (among other things) hot AI topics, AI ethics, and AI applications with an industry focus. We also reached out to other groups to learn about their outreach activities, including to regional groups (such as the Northeast Ohio ACM chapter) and larger ACM Special

Interest Groups (such as SIGCHI).

**Member Communication**

We communicate with our members via email announcements, the SIGAI newsletter AI Matters, the AI Matters blog, and webinars.

- AI Matters

We continued to expand the scope of our newsletter AI Matters this year, introduced the EasyChair system for the submission of manuscripts and added additional column editors to the editorial team. We publish four issues of AI Matters per year that are openly available on the ACM SIGAI website at

sigai.acm.org/aimatters/ and feature articles of general interest to our members. Recurring columns have included:

\* AI Interviews (with interesting people from academia, industry, and government),

\* AI Amusements (including AI humor, puzzles, and games),

\* AI Education (led by the education activities officer),

\* AI Policy Issues (led by the public policy officer),

\* AI Buzzwords (which explains new AI concepts or terms),

\* AI Events (which includes conference announcements and reports, led by

the conference coordination officer),

\* AI Dissertation Abstracts and

\* News from AI Groups and Organizations.

The Symposium on Educational Advances in AI (EAAI) will feature an undergraduate research track for the Birds of a Feather faculty-mentored undergraduate research challenge based on one of the AI Education columns. AI Matters also published the 8 winning entries from the ACM SIGAI Student Essay

Contest on the Responsible Use of AI Technologies. One of these essays had more than 2,000 accesses (including accesses to the pdf file of the complete issue that contained the article).

- AI Matters Blog

The AI Matters Blog is openly available on the ACM SIGAI website at sigai.acm.org/aimatters/blog/ and serves as a forum for important announcements and news. For example, we post new information every two weeks in the blog to survey and report on current AI policy issues and raise awareness about the activities of other organizations that share interests with ACM SIGAI. We are also open to posts by regional groups and have invited the Northeast Ohio ACM chapter to contribute.

- Webinars

We extended our webinars on AI topics as part of our commitment to lifelong learning. In particular, we offered monthly webinars from November 2017 to June 2018 that focused on the application of AI technology to real-world problems and were presented by speakers typically involved with both academic research and industrial implementations:

\* November 10, 2017;

Dan Moldovan;

Founder of Lymba Corporation, Professor in the Computer Science Department at the University of Texas at Dallas and Co-Director of its Human Language Technology Research Institute;

Topic: "On the Evolution of NLP, QA, and IE, and Current Research and Commercial Trends"

\* December 15, 2017;

Peter Elkin;

Professor and Chair of the University at Buffalo Department of Biomedical Informatics;

Topic: "HTP-NLP: A New NLP System for High Throughput Phenotyping"

\* January 12, 2018;

Lionel Jouffe;

Co-founder and CEO of France-based Bayesia S.A.S.;

Topic: "Data Mining, Knowledge Modeling, and Causal Analysis with Bayesian Networks"

\* February 23, 2018;

Kristian Hammond;

Professor of Computer Science at Northwestern University and co-founder of Narrative Science;

Topic: "Communicating with the New Machine: Human Insight at Machine Scale"

\* March 15, 2018;

Tomek Strzalkowski;

Director of the Institute for Informatics, Logics, and Security Studies and Professor at SUNY Albany;

Topic: "Advances in Socio-Behavioral Computing"

\* May 7, 2018

Jussi Karlgren

KTH Royal Institute of Technology and Helsinki University and founding partner of Gavagi, a text analysis company;

Topic: "Explicitly Encoded High-Dimensional Semantic Spaces"

\* June 4, 2018;

Maja Mataric;

Professor and Chan Soon-Shiong Chair in the Computer Science Department, Neuroscience Program, and the Department of Pediatrics at the University of Southern California;

Topic: "Socially Assistive Robotics"

The webinars were streamed live but can still be watched on demand at learning.acm.org/webinar/. They turned out to be very popular, typically reaching a thousand or more viewers.

**Public Policy and AI Ethics**

Within ACM, we work with the ACM US Public Policy Council (USACM) through the membership of our public policy officer in USACM and the participation of our members in US public policy issues related to computing and information technology. For example, our public policy officer works with the USACM

leadership and the Electronic Privacy Information Center to petition the Office of Science and Technology Policy of the White House to construct and publicize a formal process by which the public might have input into the work of the recently-named Select Committee on Artificial Intelligence. He also studies how organizations collect and analyze data and whether these practices are consistent with recommendations by the USACM working groups on algorithmic accountability, transparency, and bias. Finally, he works on recommendations for possible changes to the ACM policy regarding data privacy of ACM SIGAI and ACM members who use EasyChair to submit articles for publication, including to AI Matters.

Outside of ACM, we helped to found the AAAI/ACM AI, Ethics, and Society (AIES) conference (as detailed above). We also participate in the executive committee of the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems to ensure that every technologist is educated, trained, and empowered to prioritize ethical considerations in the design and development of autonomous and intelligent systems.

**Planning for the Future**

In our last progress report, we promised to increase our understanding of our current membership. To further this objective, we performed a membership survey this year. We promised to intensify our activities to reach industry professionals. To further this objective, we substantially extended our webinars that focus on the application of AI technology to real-world problems and started the ACM SIGAI Industry Award for Excellence in AI. We promised to reach out to more AI groups worldwide that could benefit from ACM support, such as providing financial support, making the proceedings widely accessible in the ACM Digital Library, and providing speakers via the ACM Distinguished Speakers program. To further this objective, our membership officer contacted a number of such groups. We promised to expand the number of co-sponsored and in-cooperation conferences and to continue our efforts to further the discussion on the responsible use of AI technologies. To further these objectives, we helped to found the AAAI/ACM AI, Ethics, and Society conference. In the next year, we intend to continue the reorganization of AI Matters to be able to provide more content while spreading the production effort among more editors. We also intend to intensify our activities to support students and regional chapters and become even more international in our news coverage. Furthermore, the election of the next SIGAI leadership team is coming up and we are looking for strong candidates who are interested in shaping the future of ACM SIGAI!

**SIGAPP FY’18 Annual Report**

**July 2017 - June 2018**

**Submitted by: Jiman Hong, SIGAPP Chair**

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 – Maria Lencastre, University of Pernambuco Recife, Pernambuco, Brazil

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

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

Web Master - Hisham Haddad, Kennesaw State University, USA

ACM Program Coordinator, Irene Frawley, ACM HQ

**Status of SIGAPP**

The main event that took place within SIGAPP for this year was the Symposium on Applied Computing (SAC) in Pau, French after taking place in Marrakesh, Morocco. This year's SAC was very successful. More details about SAC will follow in the next section.

We also had a 10% co-sponsorship conference, 2017 Reliable and Convergent Systems (RACS 2017) which was held in Krakow, Poland in October 2017. The RACS 2017 was successful, and have been beneficial for SIGAPP. We will continue supporting RACS in the coming years and RACS will be 20% co-sponsorship from 2018 and 50% co-sponsorship conference from 2019.

ACR is now stabilized, and we have begun publishing quarterly electronically since 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 Symposium on Applied Computing 2018 in Pau, French. The selected papers have been expanded, revised, and peer-reviewed again for publishing in ACR. The next issue will be published in fall of 2018. 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.

We have a number of in-cooperation conferences, and the list of in-cooperation conferences are below:

* MEDES '18, 10th International Conference on Management of Emergent Digital EcoSystems, Tokyo, Japan 09/25/18 - 09/28/18
* FedCSIS '18, Federated Conference on Computer Science and Information Systems, Poznan, Poland 09/09/18 - 09/12/18
* ENASE '18, 13th International Conference on Evaluation of Novel Approaches to Software Engineering, Funchal, Madeira, Portugal 03/23/18 - 03/24/18
* IMCOM '18, The 12th International Conference on Ubiquitous Information Management and Communication, Langkawi, Malaysia 01/05/18 - 01/07/18
* MEDES '17, The 9th International Conference on Management of Digital EcoSystems, Bangkok, Thailand 11/07/17 - 11/10/17
* mLearn 2017, 16th World Conference on Mobile and Contextual Learning, Nicosia, Cyprus 10/30/17 - 11/01/17
* ManLang '17, 14th International Conference on Managed Languages and Runtimes, Prague, Czech Republic 09/25/17 - 09/29/17
* FedCSIS '17, Federated Conference on Computer Science and Information Systems, Prague, Czech Republic 09/03/17 - 09/06/17
* ECBS '17, Fifth European Conference on the Engineering of Computer Based Systems, Larnaca, Cyprus 08/31/17 - 09/01/17
* PECCS '17, 7th International Joint Conference on Pervasive and Embedded Computing and Communication Systems, Madrid, Spain 07/27/17 - 07/29/17
* ICSDE '17, International Conference on Smart Digital Environment, Rabat, Morocco 07/21/17 - 07/23/17
* HPCS '17, International Conference on High Performance Computing & Simulation, Genoa, Italy 07/17/17 - 07/22/17
* PEARC '17 Practice and Experience in Advanced Research Computing, New Orleans, LA 07/09/17 - 07/13/17

**Status of SAC**

The 33rd Annual edition of SAC has marked another successful event for the Symposium on Applied Computing. This international gathering attracted over 400 attendees from over 50 different countries. It was hosted by Universite de Pau et des Pays de l’Adour(UPPA) of Pau, France and held on the Palais Beaumont, April 2018. There was an open Call for Track Proposals and after prescreening the proposals, 40 Tracks were finally accepted for SAC 2018. The prescreening and selections were made based on the success of those Tracks in the previous SACs as well as targeting new and emerging areas. The Call for Papers for these Tracks attracted 931 final paper submissions from 50 different countries. The submitted papers underwent the blind review process and 235 papers were finally accepted as regular papers for inclusion in the Conference Proceedings and presentation during the Symposium. The final acceptance rate for SAC 2018 is 25% for the overall track. The following 4 papers were awarded the Best Papers Award.

* Assessing the Functional Feasibility of Variability-Intensive Data Flow-Oriented Systems, Sami Lazreg, Philippe Collet, and Sébastien Mosser from Université Côte d'Azur, France
* Weight-based search to find clusters around medians in subspaces  
  Sergio Peignier, Christophe Rigotti, Anthony Rossi, and Guillaume Beslon from INSA/LIRIS/INRIA, France
* Helping John to Make Informed Decisions on Using Social Login  
  Farzaneh Karegar, Nina Gerber, Melanie Volkamer, and Simone Fischer-Hübner from Karlstad University, Sweden
* Leaking Data from Enterprise Networks Using a Compromised Smartwatch Device  
  Shachar Siboni, Asaf Shabtai, and Yuval Elovici from Ben-Gurion University of the Negev, Israel

In addition to the accepted full papers, 53 papers that received high enough review scores were accepted as short papers for the Poster Program. The Student Research Competition (SRC) program, sponsored by Microsoft Research, was added from SAC 2013. The SRC program is designed to provide graduate students the opportunity to meet and exchange ideas with researchers and practitioners in their areas of interest. 51submissions were received and finally 19 SRC contributions were actually presented in the final program. We always feel that SAC and SIGAPP provide excellent platforms for inter-discipline researchers and the following paper was re awarded the 1st Prize SRC award. We always feel that SAC and SIGAPP provide excellent platforms for inter-discipline researchers.

* *“*Route Planning for Aerial and Ground Vehicles with Fuel Constraints for Mapping Applications” Parikshit Maini from IIIT Delhi, India

SAC 2019 will be held in and will be hosted by University of Cyprus, Cyprus from April 8 - 12, 2019. The web site [http://www.sigapp.org/sac/sac2019/](http://www.sigapp.org/sac/sac2018/) has further details such as symposium committee, technical tracks, and track chairs. SAC 2020 is being considered for Napels, Italy. A decision by the SAC steering will be made soon. To date, 2021 SAC local host proposals have been submitted from Plague, Czech Republic, Sydney, Australia, and Dublin Ireland.

**SIGAPP Awards**

The SIGAPP Distinguished Award is given to Dr. Alessio Bechini, University of Pisa, Pisa, Italy. This award is to a SIGAPP member who provided outstanding service to the Annual Symposium on Applied Computing (SAC). Dr. Alessio Bechini has held different positions in the SAC Organizing Committee and has worked hard for the success of the SIGAPP and SAC over the past 15 years.

**Events that broadened participation either geographically**

The Student Travel Award Program continues to be successful in assisting SIGAPP student members in attending conferences. This year 36 students were granted awards to attend SAC 2018. $36,122.00 was spent for this year of these awards.

We will also 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 either geographically. We may implement this award for the SAC 2020.

**Significant programs that provided a springboard for further technical efforts**

SAC has continued to have tracks that represent application and convergent areas which are not covered by other SIGs. SAC has always been open to new tracks in applied computing.

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

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

SIGAPP’s volunteer process has been successful but we will continue to improve and establish our volunteer development process. Through the expansion of benefits for our members, SIGAPP has continued to seek stable membership and strive to increase the number of members. SIGAPP’s strength and uniqueness among ACM SIGs provides great opportunity for scientific diversity, and offers a crosscutting of multiple disciplines within the ACM community. The officers look forward to continue working 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.

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

**Brief Summary of the Key Issues SIG membership will have to deal with**

The Membership has decreased temporarily in the last year. The officers look forward to continue working 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.

**SIGARCH FY’18 Annual Report**

**July 2018 – June 2019**

**Submitted by: Sarita Ave, SIGARCH Chair**

**OVERVIEW**

Our past two 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. Over the last year, we solidified many of these initiatives and started some new ones, thanks to many volunteers from the broader community. The Computer Architecture Today blog and the lightning student mentoring sessions at the ISCA conference continued to make impact. The SIGARCH/TCCA dissertation award was inaugurated this year. New activities towards making our community more diverse and inclusive have attracted attention across Computer Science. In the coming year, which will be the last one for this executive committee (EC), we plan to mainly focus on a review of our conference portfolio, including strengthening bylaws and guidelines for them, and to ensure that all our efforts so far are sustainable. The rest of this report describes in more detail our key activities under the three components of our mission statement.

**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 45th ISCA was held in downtown Los Angeles in June 2018. For the second time in the last ten years, ISCA hosted the prestigious ACM Turing Lecture, this time by John Hennessy and David Patterson. ISCA’18 was also historic in marking the first time that a woman received the ACM/IEEE-CS Eckert-Mauchly award, the highest award in computer architecture. Susan Eggers received the award and gave an inspiring speech at the awards luncheon. ISCA’18 also proudly hosted for the first time ever a Bias Busting workshop, with complimentary registration to all attendees with sponsorship from Google. In addition, the conference featured six workshops, 13 tutorials, three keynotes, 18 technical paper sessions (with both record submissions of 378 papers and 64 accepted papers) and a conference panel. The credit for the success of ISCA 2018 goes to the record 794 attendees who came from all over the world to present and exchange research ideas, and to an equally passionate group of organizers and sponsors that resulted in over $385K in sponsorship funds for the conference. With additional funding from SIGARCH, TCCA, and NSF, ISCA'18 provided an unprecedented amount of student travel grant support to a record 162 students.

ASPLOS’18 was held in Williamsburg VA in March 2018. The conference featured a strong technical program with 56 papers, 2 keynotes, and the return of the popular Wild and Crazy Ideas session, along with 8 workshops and 4 tutorials, with 413 attendees and a near-record 319 paper submissions. A highlight of this year was the co-located visioning Workshop on Interdisciplinary Research Challenges in Computer Systems, sponsored by NSF, which drew over 150 attendees and produced extensive discussions on the future research directions in the field.

(2) Annual SIGARCH visioning workshops: The visioning workshop program, driven by Luis Ceze, Joel Emer, and Karin Strauss, seeks to catalyze and enable innovative research within computer architecture, and between computer architecture and other areas. Video recordings of the talks from our last visioning workshop - Trends in Machine Learning - were professionally edited and are part of the ACM Digital Library and inaugurated the SIGARCH YouTube channel. For our next visioning workshop, we have already received a strong inter-disciplinary proposal and expect to receive more by the September deadline.

(3) Reviewing the review process: As mentioned in the previous report, discussion at the ISCA’16 business meeting led to the SIGARCH and TCCA ECs jointly appointing the “Reviewing Reviewing (R2)” committee. The committee was charged to undertake a review of the ISCA peer-review process to systematically identify shortcomings (if any) and propose changes (if needed).

In its first year, the committee conducted a comprehensive community survey to identify what currently does and does not work well. The results of the 621 responses were reported at the ISCA’17 business meeting. In the last year, based on the survey responses and an analysis of the best practices in other communities, the committee proposed a two year experiment to address the identified shortcomings of the review process. The SIGARCH and TCCA ECs communicated specific concerns and suggestions for this proposal, which the committee incorporated in a revision presented for vote. The SIGARCH EC unanimously approved the proposal, but the TCCA EC vote was a tie and the proposal was not approved.

David Wood, a member of the R2 committee had coincidentally been elected earlier as program chair for ISCA’19 and had agreed to serve only if he could implement the R2 proposal. After the TCCA vote, Wood suggested a one year experiment based on R2 learnings for ISCA’19. A compromise agreed with representatives of the governing organizations of the four major architecture conferences was presented at the ISCA’18 business meeting. The poll at the meeting returned a majority in favor of the experiment, but continued opposition led Wood to conclude that the community was not yet ready to make a change and he declined to serve as ISCA’19 PC chair. ISCA’19 will therefore proceed with the current system.

The details of the R2 committee’s work are available in a blog post and in a final report to be published shortly. The SIGARCH EC thanks all members of the R2 committee for their hard work: Natalie Enright Jerger, David Kaeli (co-chair), Christos Kozyrakis (co-chair), Gabriel Loh, Tom Wenisch, and David Wood. We particularly thank David Wood for going above and beyond the call of duty preparing multiple revisions to accommodate concerns raised.

(4) Conference portfolio review: We have started an initiative to review our conference portfolio to assess alignment with SIGARCH members’ interests, to develop mechanisms to determine appropriate financial investments and accountability, and to develop rules and guidelines to be followed or considered by organizers of all SIGARCH (co-)sponsored conferences.

**TALENT DEVELOPMENT AND RECOGNITION**

(1) ACM/IEEE Eckert-Mauchly award: This is the most prestigious award in computer architecture given for contributions to computer and digital systems architecture. The 2018 recipient was Susan Eggers for “outstanding contributions to simultaneous multithreaded processor architectures and multiprocessor sharing and coherency.” Susan Eggers was the first woman to receive the award in its 39-year history.

**ACM SIGBED FY’18 Annual Report**

**July 2017 - June 2018**

**Submitted by: Insup Lee, SIGBED Chair**

**Awards**

The Paul Caspi Memorial Dissertation Award is a new 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. Details about the selection and nomination process can be found on SIGBED's awards page, <http://sigbed.blogspot.com/p/awards.html>

The 2017 Paul Caspi Memorial Dissertation Award recipient is *Guillaume Baudart*, for his thesis *A Synchronous Approach to Quasi-Periodic Systems* defended at École normale supérieure, Paris. The winner of the 2017 award was chosen from a total of 9 nominations. The selection committee found the winning thesis to offer a significant theoretical contribution and also noted that the thesis is close in spirit to Paul Caspi’s work. The committee took into consideration the citation counts of research publications that form the basis for the thesis, as well as awards received by these publications.

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 2017 SIGBED-EMSOFT Best Paper is titled “Security-Aware Scheduling of Embedded Control Tasks,” by Vuk Lesi, Ilija Jovanov, and Miroslav Pajic.

A new award, SIGBED Early Career Award, has been established in 2017. The recipient of the inaugural award is Björn Brandenburg, Max Planck Institute for Software Systems.

**Student Travel Grants**

To promote excellence in embedded systems education and research, SIGBED offers travel grants for students to attend ESWEEK and CPSWEEK, the premier forums in the areas of embedded and cyber-physical system design areas. The travel grants can be used to partially cover conference registration and/or hotel accommodation. The SIGBED leadership views travel grants as one of the best investments into the SIG future and the budget allocation for travel grants has been increased every year. For ESWEEK 2017 in Seoul, South Korea, 12 grants were made out of 18 applications for travel grants. The total amount of travel awards was $15,000. CPSWEEK 2018, in Porto, Portugal has made 28 travel awards of varying sizes supported by SIGBED. SIGBED awards for CPSWEEK were complemented by other sources of travel funds, including NSF and industry sponsors. 53 awards made overall out of 73 applications.

**Events highlighting new areas of interest at conferences**

The main conferences supported by SIGBED are invariably concerned with identifying new directions and challenges for the research community and related industries. ESWEEK 2017 featured the following keynotes on emerging horizons in embedded systems:

* “Small Neural Nets Are Beautiful: Enabling Embedded Systems with Small Deep-Neural-Network Architectures” by Kurt Keutzer, UC Berkeley
* “IoT From the Lab to the Real World” by Feng Zhao, Haier
* “Trustworthy Operating Systems for Critical Embedded and Cyberphysical Systems” by Gernot Heiser, University of New South Wales

Similarly, CPSWEEK 2018 featured keynotes discussing new CPS applications and significant challenges:

* “How Can We Rely on Cyber-Physical Systems with Thousands of Software Bugs” by Henrique Madeira, University of Coimbra
* “Dependable Industrial Internet of Things” by Chenyang Lu, Washington University in St. Louis
* “From Rags to Riches - Distributed Economic Model Predictive Control in Industry 4.0” by Frank Allgower, University of Stuttgart

**SIGBED membership drive**

SIGBED funded a membership drive at CPSWEEK 2018. Conference participants were offered to opt in for a one-year SIGBED membership during the registration process. Membership fees were provided by SIGBED. The rationale for this approach is people are more likely to maintain membership once they have it than to acquire a new membership that takes an effort to sign up for. As a result of the drive, we received 89 new membership requests, of which 25 were for student memberships.

**Innovative programs which provide service to some part of our technical community**

SIGBED continues to sponsor two major federated conferences, CPSWEEK (comprised of HSCC, ICCPS, IPSN, and RTAS) in the spring and ESWEEK (comprised of CASES, CODES+ISSS, and EMSOFT) in the fall, as well as several other leading conferences in the embedded systems community. Sponsorships approved this year also include BuildSys 2018. “In cooperation” status was approved for PECCS 2018, EWSN 2019, SENSORNETS 2019.

SIGBED continues to operate a blog for announcements and other information at sigbed.org and the @sigbed Twitter account. The SIGBED-MEMBERS mailing list is used for announcement of events of interest to the community.

The SIGBED review continues to provide a forum for technical contributions by members as well as lists of upcoming events. Since Spring 2017, the editor of SIGBED Review is Sergiy Bogomolov, Australian National University.

SIGBED continues to offer low membership rates at $15 for a regular membership and $5 for a student membership.

**Recognitions**

SIGBED Chair Insup Lee has been named ACM Fellow.

**Issues**

No new issues to raise.

**SIGBIO FY’18 Annual Report**

**July 2017 - June 2018**

**Submitted by: Srinivas Aluru, SIGBIO Chair**

*The ACM Special Interest Group on Bioinformatics, Computational Biology, and Biomedical Informatics (SIGBio) bridges computer science, mathematics, statistics with biology and biomedicine. The mission of ACM SIGBio is to improve our ability to develop advanced research, training, and outreach in Bioinformatics, Computational Biology, and Biomedical Informatics by stimulating interactions among researchers, educators and practitioners from related multi-disciplinary fields.*

**Membership Statistics:**

Professional: 232

Affiliate: 77

Student: 29

Total: 338

**Annual Community Meeting:**

The SIGBIO annual meeting was held on the sidelines of the 8th ACM BCB conference in Boston, Massachusetts on Monday, August 21, 2017 from 4-6 PM. The meeting was used to reach out to our general membership, present work carried out to date, announce new initiatives, seek volunteers to contribute to these and other efforts, and receive general community feedback to help shape future planning.

**SIGBIO Conference (ACM BCB):**

ACM BCB is the flagship conference for SIGBIO. The eighth ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB 2017) was held at the Marriott Cambridge Hotel in Boston, Massachusetts during August 20-23, 2017. The conference had 307 attendees, which sets a new record (previous high was 286 in 2015). There were also 109 student attendees, again a record.

The main program featured 42 peer-reviewed full research papers and 28 short research papers that appeared in the proceedings, selected from 132 original submissions. It also featured eight highlights presentations of recently published high value work, selected from 15 submissions. Additionally, 60 technical posters were exhibited at the meeting. The conference was preceded by five international workshops on the topics of network biology, computational structural bioinformatics, computational advances in molecular epidemiology, parallel and cloud-based bioinformatics, microbiomics, metagenomics, and metabolomics, and a special student mentoring workshop. The conference also featured four tutorials, the poster session, an industry session, demos and exhibits, NSF-sponsored student research forum, the SIGBIO Women in Bioinformatics panel, and a student networking and social event.

**Partnership with WABI:**

The Workshop on Algorithms in Bioinformatics (WABI), established in 2001, is a major annual international conference. It is a single track meeting that features high quality algorithmic work in bioinformatics and attracts about 60-75 attendees. In recent past, the conference has completely shifted to Europe and held as part of the ALGO Conferences, primarily due to difficulty in identifying suitable organizers in the U.S. The SIGBIO chair worked with WABI steering committee to run WABI as part of ACM BCB conference in Atlanta in 2015. Essentially, the WABI program was run as one of the tracks of the ACM BCB conference. This was a successful experiment that provided additional value to participants of both the meetings. Subsequently, SIGBIO forged an agreement with WABI to make it a part of ACM BCB conference every alternate year. The second such co-location was with ACM BCB 2017, which played a role in garnering record attendance to date.

**In-Cooperation Conferences:**

SIGBio was in cooperation with the following conference:

* BIOSTEC’18: 11th International Joint Conference on Biomedical Engineering Systems and Technologies, Funchal, Madeira-Portugal, January 19-21, 2018.

**SIGBIO Awards:**

These awards are given to the best paper and best student paper, respectively, as judged by the awards committee and selected from among the papers accepted for the ACM BCB conference. The 2017 awards are presented at the banquet event of the ACM BCB 2017 conference.

SIGBIO Best Paper Award:

Rich chromatin structure prediction from Hi-C data, by Laraib Iqbal Malik and Robert Patro

SIGBIO Best Student Paper Award:

Exploring Frequented Regions in Pan-Genomic Graphs, by Alan Cleary, Thiruvarangan Ramaraj, Indika Kahanda, Joann Mudge and Brendan Mumey

**NSF Awards:**

SIGBIO was awarded a National Science Foundation grant to support the ACM BCB conference. The funds primarily supported travel, hotel, and registration support for 20 U.S. based students and recently graduated postdoctoral fellows with high priority for female, minority, and young professionals to participate in the conference. In addition, two senior female professionals were invited to share their experience and wisdom in career development, and to serve as mentors to facilitate young professional groups with the goal to continually build the community throughout the year.

NSF IIS-1743885: Student Support for the 8th Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB 2017), $24,056, Dongmei Wang (PI)

**Key Issues:**

The key issues facing SIGBIO in the near future are:

-- *Membership*: The membership of SIGBIO has stagnated in recent years. We do not believe the current membership is fully reflective of the broad base of professionals and students working in the fields SIGBIO represents. Underneath the surface, our affiliate membership has increased significantly whereas the student membership decreased. However, student participation in our flagship conference has reached an all time record.

-- *Operations*: SIGBIO can do more for its members but finding dedicated volunteers to execute these tasks has been difficult. There is much to learn from long-established and well run SIGs. For example, the SIGACT and SIGMOD have excellent and highly informative newsletter

2018 SIGCHI Annual Report

**SIGCHI FY’18 Annual Report**

**July 2017 - June 2018**

**Submitted by: Loren Terveen, SIGCHI President**

The scope of the Special Interest Group on Computer-Human Interaction (SIGCHI) is the study of human factors in the human-computer interaction process, including research, design, development and evaluation of interactive computing systems.

The 2018 fiscal year was a very successful one for SIGCHI. Key milestones and activities included:

\* Continued expansion and strong interest in our conference series. Our flagship CHI conference, held in Montreal in April, had 3347 registered attendees making it the third largest CHI conference ever.

Meanwhile, we continue to sponsor several other conferences with large (+500) attendance including CSCW, RecSys, and Ubicomp. In 2017 we welcomed, AutoUI to the SIGCHI conference family and Collective Intelligence joins us in 2018 and we said farewell to CABS which retired as a conference series.

We have had 9 new SIGCHI sponsored or co-sponsored conferences in the past 6 years and more in-cooperation conferences.We also continue to work on our “Family of Conferences” initiative, encouraging conference steering committee chairs to identify opportunities to work together. You can read more in our Conferences Report here:

<https://sigchi.org/wp-content/uploads/2018/05/SIGCHI-Conferences-Report-for-Members-May-2018.pdf>

\* Significant and continued emphasis on international development. Our goals are to help develop HCI communities around the world, and to integrate regional HCI communities into the worldwide network of HCI researchers and innovators. We have sponsored a number of events in eastern Asia, including in Thailand, Indonesia, and Japan. bringing together researchers and practitioners from around the region.

We also are in advanced stages of identifying a location in Japan for the CHI 2021 conference. In

addition, we have greatly expanded our efforts in “developing” countries, that is, Global South. We held three SIGCHI Across Borders events (in Egypt, Argentina, and Swansea) in order to listen to the needs of HCI community members from places where HCI is still a nascent area. In 2017-2018, 16 new SIGCHI local chapters were established, in 12 new countries in the Global South, of which 7 new chapters in Asia, 2 in Africa, and 3 in Latin America. Overall, there are 50 SIGCHI local chapters in 39 different countries. The geographical coverage of SIGCHI chapters is greater than ever.

\* Empowering our members. SIGCHI’s Development Fund has been a successful mechanism for our members to receive funding to carry on events and activities for the benefit of our membership. The Summer/Winter Schools is a Special Funding Initiative under this fund that has resulted in 6 schools in the first round and three schools in the second round being funded. The schools collectively will enable hundreds of participants from around the world to deepen their knowledge and to network with expert faculty and each other. The locations include Israel, Australia, India, Saudi Arabia, and Namibia.

We also have a number of funding programs available for students to attend our conferences and other events including the SIGCHI Student Travel Grant (SSTG) and the Gary Marsden Student Travel Grant. In fact, in January 2018 the SIGCHI EC approved an increase in the SIGCHI Student Travel Grant (SSTG) budget for 2018/2019 in order for the SSTG committee to offer 150 provisional awards while budgeting for 60.

And finally, we continue our emphasis on diversity and inclusion both within our events and in computing more generally. Finally, CHI 2017 had a very well attended diversity and inclusion luncheon, and we have made support available to all our conference (and membership) for other such events under the SIGCHI Development Fund. We also have funded ACM-W scholars to attend our conferences, the CRA-W Grad Cohort, and womENcourage. You can read more about our funding programs here:

https://sigchi.org/get-involved/funding/ .

\* Publications infrastructure. In the past year, SIGCHI has made significant efforts in improving the publication infrastructure for associated conferences. This includes an investment in the development of a new tool for submission and review (aka PCS 2.0 - https://new.precisionconference.com ) that meets the evolving needs of our conferences. Those needs include scalability as the HCI area grows, and diversity as more conferences become associated with PACM and revise/resubmit processes.

Additionally, SIGCHI has worked closely with ACM to test and implement new document templates that will be responsive on multiple platforms and support accessibility beyond the PDF format. Finally, SIGCHI has made a free mobile application for conferences to use for their programs, and have started the implementation of a tool for organizing conference sessions at scale - this can be downloaded from the Google or Apple app stores: https://sigchi.org/2018/04/sigchi-mobile-app/ .

\* Public communications and outreach. At CHI 2018, we continued to offer a course to our members on how to work with the press and communicate with the public. We intend to offer this for one more year at CHI 2019. In addition, we created a program of “Ted-like” public talks called CHI Lites ( https://sigchi.org/chi-lites/ ) presented in conjunction with CHI and to be made available as high-quality videos through our YouTube channel - https://www.youtube.com/user/acmsigchi . We intend to do this program again for CHI 2019 in order to gather more public facing videos.

\* Awards. SIGCHI Awards are presented at each year’s CHI conference to recognize and honor leading members of the human-computer interaction community . This year’s award winners were (see https://sigchi.org/awards/sigchi-award-recipients/ for details):

Lifetime Achievement in Research

Steve Feiner

Lifetime Achievement in Practice

Arnold M. Lund

Social Impact

Lorrie Faith Cranor

Indrani Medhi Thies

Lifetime Service

Maria Francesca Costabile

John C. Thomas

SIGCHI Academy

Amy S. Bruckman

Sheelagh Carpendale

Ed H. Chi

Michael Muller

Albrecht Schmidt

Jean Scholtz

Andrew D. Wilson

Volker Wulf

Outstanding Dissertation Award

Stefanie Mueller

Blase Ur

# SIGCAS FY’18 Annual Report July 2017 ― June 2018 Submitted by: Karla Carter, SIGCAS Chair

## Mission Statement

SIGCAS mission has been to provide a forum to discuss, debate and research all issues pertaining to the social implications of computing, including ethical and philosophical concerns, for the computing profession.

## General Report

FY 2018 was a good year for SIGCAS. The highlights include:

- Newsletter: Randy Connelly took over as Newsletter Editor in Chief in early 2018 (former EIC, Dee Weikle, had to step back) and has migrated the newsletter to the new WordPress site. We have a member, Evelyn Lulis, who is interested in serving as Deputy Editor, but it is not finalized yet.

- SIGCAS’s social media presence on Twitter continues to inspire contacts and conversation. We have recruited at least a handful of new members through Twitter interactions.

- Annual Pre-Symposium Event: Each spring, as a pre-(SIGCSE) Symposium event, SIGCAS holds a SIGCAS-themed workshop. This year’s theme was Strategies for Integrating the Updated ACM Code of Ethics in to the Computing Curriculum.

- Conferences: As was mentioned last year SIGCAS grew from a zero-conference SIG to one that is now sponsoring two annual conferences:

- LIMITS (Computing Within Limits): SIGCAS was in-cooperation with LIMITS for their 2018 conference.

- COMPASS (Computing and Sustainable Societies), which is the evolution of DEV, had its first conference, with 40 papers, 10 notes, and 10 posters. It raised substantial funding for its operations from local entities.

The leadership of both LIMITS and COMPASS were able to assist a group within SIGPLAN regarding their climate change initiative.

COMPASS and LIMITS are considering whether co-location for 2019 is in their mutual best interests.

- Computing for Social Good (CSG): SIGCAS continues to be the primary SIG sponsor behind the Computing for Social Good in Education (CSG-Ed) movement. This effort seeks to show educators how to evolve their current curriculum (programming projects, in-class examples, etc) to highlight the importance of computing in solving the pressing problems of the day. All too often our projects and examples highlight games or billionaire-producing killer apps instead of how computing can assist in understanding and solving important social, environmental, or health-related problems (to name a few). A sister-track for CSG was held at SIGCSE in 2018 and a mini-workshop was offered.

- Key Areas for Work:

- Awards (see below).

- Website maintenance: Randy Connelly was kind enough to port the previous website to the new WordPress CMS but it is now up to SIGCAS to maintain it. We are actively looking for website volunteers. We are also pondering hiring students.

- Conference management: We were able to rely on Mikey Goldweber’s experience with conferences to assist LIMITS and DEV, but need to have a more formal structure in place going forward.

- 50th Anniversary Celebration events: We have put out a call for a historian and are still looking.

- Volunteers: SIGCAS continues to need more helping hands when it comes to operations. Additionally, we need to explore a graceful exit strategy for volunteers who have overcommitted and need to step back. See also, “Succession Planning”

- Member engagement: while our Twitter feed has attracted new members, and some SIGCAS members interact, the SIGCAS membership at large seems reticent to participate in conversations. Posts to the SIGCAS-Talk list are often met with unsubscribe requests. Discovering how the membership wishes to interact is a goal for the coming year.

- Succession planning: It was noted in last year’s report regarding elections that the EC was composed of nearly all new officers. In order to keep ideas and perspective fresh it is important to engage in succession planning. Some conversations have begun around this but need to be developed.

## 3. Awards

We have selected a recipient for the 2016/2017 Outstanding Service Award who will be informed within the next month. The 2017/2018 award has not been decided. The EC has been unable to determine a winner for the Making a Difference Award for 2017/2018, nor was there an award for 2016/2017. This award has been identified by the EC as a continued area for remediation.

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

The new format for the newsletter and website is recently live and we hope to encourage papers in the coming year.

## 5. Significant programs that provided a springboard for further technical efforts

SIGCAS has assisted COPE with the updated version of the ACM Code of Ethics. SIGCAS will continue to support COPE’s outreach efforts as well as contributing content for the Integrity Project.

## 6. Innovative programs which provide service to some part of your technical community

* SIGCAS continues to promote the idea of computing professionals having a socially relevant influence. SIGCAS, in addition to continue working with SIGCSE in planning pre-Symposium events, is also exploring cooperative ventures with other SIGs. Currently that is in the talking stage but we have offered support.
* SIGCAS continues to participate in a joint IEEE/ACM Ethics project.
* SIGCAS continues to work with other conferences world-wide through an “in cooperation” status.
* SIGCAS sponsors two conferences in its primary area of focus.

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

The negative effects of technology on society continue to be an area of concern. SIGCAS has been somewhat of a Cassandra until recently. There is more awareness of ethical issues, but the amount of those issues threatens to overwhelm and potentially numb concerns. There is almost a firehose of news daily and it’s difficult to know where to focus conversations for the greatest effect.

Due to the apparently reticent nature of SIGCAS membership, we fear SIGCAS is at risk of its voice being minimized, both in ACM itself – particularly since other SIGs have developed their own ethics wings – and in the public sphere. It is important for SIGCAS members to present themselves as public intellectuals. SIGCAS has been referred to in the past as the conscience of the ACM. Other SIGs have ethics subcommittees, but ethics is in the very DNA of SIGCAS. It is up to SIGCAS members to start and grow conversations about the effects of computing technology on society. It does the world no good if we limit our discussions to academic venues and academic verbiage. We are not only a SIG of academics or researchers. A healthy percentage of our membership includes some form of real-world practitioners. We therefore need our members to go forth and converse in daily life, with technical and non-technical people, about how computing technology is affecting society.

# SIGCOMM FY’18 Annual Report July 2017 ― June 2018 Submitted by: Roch Guerin, SIGCOMM Chair

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

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

### Conferences

The SIG sponsors an eponymous flagship conference and is the sole sponsor of the following conferences: CoNEXT, eEnergy, Information-Centric Networking (ICN), and the HotNets Workshop. The eEnergy conference will, however, migrate to the recently formed Energy EIG in 2019. The SIG also jointly 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.

Our flagship conference, continuing our policy of rotation among regions on a 3-year cycle, was held in Los Angeles, CA, in August 2017. The conference had an attendance of 785, which, after the lower attendance of 2016 held in Brazil where the Zika scare had affected attendance, was back in keeping with participation levels of previous years. This fact, together with strong support from industry sponsors produced a healthy surplus for the conference while allowing us to at the same time award over $60k in travel grants to attend the conference.

This relatively large surplus together with more modest surpluses from other conferences we sponsor meant that even if the SIG continues to seek to down-spend its large financial reserve, it continues to remain financially extremely strong. This strength will allow the SIG considerable freedom in continuing to expand its support for the community.

In particular, one of the SIG’s main focus area is on outreach and diversity, with a new Director of Diversity and Outreach, Marinho Barcellos, having been added to the EC. In addition to Marinho’s responsibilities on exploring new initiatives to foster greater diversity in the SIG and its conferences, the SIG has also been expanding its support of several activities aimed at increasing diversity. They are further detailed in the section titled “Support for the community and new projects” below. The 2017 SIGCOMM conference also provided the opportunity to recognize a long-time SIG volunteer who recently passed away, Chris Edmondson-Yurkanan. A travel grant named in Chris’ honor was introduced and will be awarded each year to a young woman, preferably but not necessarily a student, who has demonstrated the kind of enthusiasm and eagerness to become involved in the SIG and its activities that was Chris' trademark. The travel grant will be awarded by the SIG’s liaisons to the N2Women organization.

As in previous years, the SIG continued to financially support several regional conferences in computer networking. The current set of regional conferences we support financially includes COMSNETS, a major networking conference in India, and the Asian Internet Engineering Conference (AINTEC). COMSNETS has been quite successful and become a strong regional event in its own right, while AINTEC has remained somewhat confined in realizing its original goals of broadening participation in the Asia-Pacific region. This may have been in part because the conference has remained anchored at the same location. As part of the feedback given to the organizers, the SIG recommended exploring alternative locations in the future. Subsequent support from the SIG may, therefore, hinge on whether or not this advice is followed. The SIG had previously been supporting the Latin American Networking Conference (LANC), but decided to withhold its support this year, as feedback from our community indicated that the conference had drifted away from its original goals and was not viewed as particularly relevant anymore. We are in the process of exploring starting an new event in Latin America that will better fulfill our goal of better serving and growing our community in that region.

We also continued to support a new conference focussed in Asia-Pacific, APNET, whose first edition was held in Fall 2017. We continue to foster the success of these conferences by means such as invited speaker travel funds and student travel grants. In addition to supporting regional conferences, the SIG provides generous general student travel support to all of its sponsored conferences.

We are in-cooperation with a number of events, including the International Conference on Network and Service Management (CNSM), the International Teletraffic Congress (ITC), Multimedia Systems (MMSys), the USENIX Symposium on Networked Systems Design and Implementation (NSDI), the Workshop on Network and Systems Support for Games (NetGames), the International conference on Networked Systems (NetSys) besides the aforementioned COMSNETS, AINTEC, and APNET.

The SIG also supports a handful of summer schools with grants of up to $25k, including the PhD School on Traffic Monitoring and Analysis (TMA) that was held in Vienna in June 2018, and the ...MeetGreen has continued to provide administrative support to our volunteers, but we are exploring possible alternatives that may allow us to offer additional services to our volunteers, including a menu of options that conference organizers could chose from.

**SIGCOMM Survey and Its Summary**

Towards better understanding a number of questions that had been raised regarding exploring possible changes to the SIGCOMM conference process, we conducted a survey shortly after the 2017 edition of the conference.

Specifically, the submission deadline for SIGCOMM papers is currently near the end of January. Reviewing starts soon after, and takes place in multiple rounds. Papers that have positive reviews at the end of the first round are promoted to round 2; others are rejected. Papers in round 2 get additional reviews. There may optionally be a third round. Finally, papers with sufficient support at the end of the final round are discussed in a 1.5-day long in-person PC meeting, where the final program is determined. Notifications of acceptance are sent around the end of April. The program typically has roughly 40 papers presented in a single track fashion. The conference takes place in August. The survey focused in part on understanding better what aspects of this process work for both authors and reviewers, and what aspects, if any, don't. The broad goal was to continue to improve the conference and the review process.

The survey was released in October 2017, and stayed open for two weeks. Roughly 170 responses were received. To put this in context, this is about 10% of the overall SIG membership.

The results from the survey are publicly available at<http://pages.cs.wisc.edu/~akella/sigcommsurvey/>, and have been shared broadly both within the SIGCOMM and elsewhere (e.g., the NSDI community). The SIGCOMM Technical Steering Committee and 2018 PC chairs were also provided access to the survey results.

Key conclusions from the survey are:

* 60% of the respondents were supportive of SIGCOMM adopting a revision process.
* 64% of the respondents were supportive of SIGCOMM employing multiple rolling deadlines as opposed to a single annual one.
* 54% of the respondents were supportive of SIGCOMM adopting a journal model similar to PACM.

We also received several detailed comments from respondents about what aspects of the current process they like or dislike the most. Many respondents like the fact that SIGCOMM reviews are detailed, and that SIGCOMM program committee meetings provide a high-bandwidth avenue to ironing out major differences of opinion among reviewers. On the flip side, the fact that rejection means waiting a whole year before resubmission was brought up as a major source of concern with the current process, especially for young/untenured researchers in the community.

### Newsletter

The SIG’s newsletter, Computer Communications Review (CCR), continues to publish four issues per year. Since 2016, CCR is published entirely on both the ACM Digital Library and at https://ccronline.sigcomm.org. We publish two types of articles: technical papers and editorial contributions. The editorial contributions range from meeting reports to reflections on the evolution of the field. Technical papers are peer-reviewed by members of the editorial board and external reviews. In order to encourage the authors to release their artifacts (software, datasets, measurements, ...) the papers that release their artifacts can be longer than the regular six-pages limit for technical papers. We observe that a growing fraction of the accepted technical papers provide artifacts that enable readers to extend and reproduce the results describe in the paper. Every year, the CCR editorial board selects the two best papers for oral presentation during the SIGCOMM conference. This year, the two best papers have released their artifacts.

A recent survey conducted among the authors of the accepted papers at SIGCOMM’17, CoNext’17, IMC’17, and ICN’17 revealed that one third of the accepted papers contained artifacts. Despite ACM's reproducibility initiate, these artifacts have not been reviewed. SIGCOMM has launched an artifact evaluation committee that will evaluate artifacts of accepted papers and assign the ACM reproducibility badges. A first evaluation of SIGCOMM paper artifacts will be organised this fall.

### Awards

**SIGCOMM Lifetime Achievement Award**:

This year, SIGCOMM recognized Prof. Jennifer Rexford from Princeton University with the SIGCOMM Award for Lifetime Achievement; She will receive the award and present a keynote talk at the annual SIGCOMM conference in August 2018 in Budapest, Hungary. She was recognized "For her fundamental and practical contributions to making the Internet more reliable and predictable, and for her outstanding mentoring and community service.”

The award committee consisted of Bruce Davie (VMware), Albert Greenberg (Microsoft), Nick McKeown (Stanford University, chair), Nina Taft (Google), Don Towsley (University of Massachusetts Amherst)

**SIGCOMM Doctoral Dissertation** **Award for Outstanding PhD Thesis in Computer Networking and Data Communication:**

The award for the best doctoral dissertation submitted in 2017 went to Anirudh SivaramanKaushalram for his thesis titled*“Designing Fast and Programmable Routers.”* His thesis was cited as follows: “Sivaraman's dissertation makes pioneering and impactful contributions to the design and implementation of programmable routers that run at hardware line rates.”

The committee consisted of Marco Mellia, T.S. Eugene Ng (chair), Xiaowei Yang, and Haifeng Yu

## SIGCOMM Rising Star Award:

## The recipient of the 2017 SIGCOMM Rising Star Award was Mohammadreza Alizadeh Attar from MIT. The award was in recognition of outstanding research contributions, early in his career, in the area of large scale datacenter network architectures and protocols.

## The 2017 rising star award committee consisted of Sujata Banerjee (VMware Research), Sylvia Ratnasamy (UC Berkeley), Peter Steenkiste (CMU), and Balachander Krishnamurthy (AT&T Research).

The criteria for subsequent awards were also modified to specify a relative period of time since obtaining a Ph.D. rather than an absolute age limit. Specifically, the modified description of the award mow reads as follows:

Each year, ACM SIGCOMM presents a "Rising Star" Award, recognizing a young researcher - *an individual within 10 years of receiving their Ph.D. or equivalent degree* - who has made outstanding research contributions to the field of communication networks during this early part of her or his career. Depth, impact, and novelty of the researcher's contributions will be key criteria upon which the Rising Star award committee evaluate the nominees. Also of particular interest are strong research contributions made independently from the nominee's PhD advisor.

## 

## SIGCOMM Test of Time Paper Award: Two papers were selected for the 2018 award by a committee composed of John Byers (Boston University, chair), Krishna Gummadi (MPI), Brad Karp (UCL), and Lili Qiu (University of Texas). The two papers were:

* *“A Scalable, Commodity Data Center Network Architecture”* by Mohammad Al-Fares, Alexander Loukissas, and Amin Vahdat. SIGCOMM 2008.

This paper lucidly articulates a vision for what is today the standard structure of a data center network: commodity packet switches interconnected in a fat-tree topology. By posing and addressing practical challenges in data center networking, the authors drew attention to this then-emerging area, and propelled the community to consider the design of new networking techniques for the relatively ‘green field’ of the data center -- a research area that has flourished since.

* *“XORs in the air: practical wireless network coding”* by Sachin Katti, Hariharan Rahul, Wenjun Hu, Dina Katabi, Muriel Médard, and Jon Crowcroft. SIGCOMM 2006

This paper's interdisciplinary team brought information-theoretic research on network coding to bear on the domain of wireless networks, with an ingenious new scheme for achieving capacity gains by jointly coding information from multiple flows into individual packets. This paper's design and implementation upended the networking community’s understanding of limits on wireless capacity and ushered in diverse work on capacity improvement in the decade that followed.

**SIGCOMM Networking Systems Award**: This award was awarded for the first time in 2018 by a committee comprised of: Edouard Bugnion (EPFL), Ratul Mahajan (Intentionet), Jeff Mogul (Google, chair), and Ellen Zegura (Georgia Tech). The committee selected the following contribution:

**The Akamai Content Delivery Network (CDN)**: The Akamai CDN pioneered the concept of a content distribution network, combining numerous technical innovations with an equally innovative business model that simultaneously met the needs of multiple stakeholders (site owners, ISPs, and users). Akamai’s technical contributions include a system for mapping clients to the best CDN server, active probing to create a latency model of the Internet, and a dynamic control system that provides load balancing and fault tolerance. In particular, the paper "Consistent Hashing and Random Trees: Distributed Caching Protocols for Relieving Hot Spots on the World Wide Web" (STOC ‘97) provided a deep algorithmic basis, introducing random cache trees for load-balancing, and consistent hashing to minimize churn. With its enormous worldwide scale, the Akamai CDN is an exemplary study in translating research results into a successful operational system.

**Contributors**: Mike Afergan, Andy Berkheimer (YouTube), Bobby Blumofe (Akamai), Bill Bogstad, Chad Brown, Tim Canfield (Akamai), Alex Caro (Akamai), Rizwan Dhanidina (Akamai), John Dilley (Rafay Systems), Hilla Dishon, Ken Iwamoto (Akamai), Chris Joerg (Akamai), Vinay Kanitkar (Akamai), David Karger (MIT), Brian Kim (Alpine Global), Robert Kleinberg (Cornell University), Sef Kloninger (YouTube), Will Koffel (Google), Leonidas Kontothanassis (Google), Bradley Kuszmaul (Oracle), Tom Leighton (Akamai/MIT), Charles Leiserson (MIT), Danny Lewin (Akamai, died 9/11/2001) , Matthew Levine, Philip Lisiecki (Akamai), Bruce Maggs (Duke University/Akamai), Luke Matkins (LifeStreet), Sean McDermott (Akamai), Gary Miller (Carnegie Mellon University), Erik Nygren (Akamai), Andrew Parker (Netflix), Roberto de Prisco (University of Salerno), Harald Prokop (LevelUp), Hariharan Rahul (MIT), Satish Rao (U. C. Berkeley), Kyle Rose (Akamai), David Shaw (Nasuni), Alex Sherman (Google), Ramesh Sitaraman (UMASS Amherst/Akamai), Scott Smith (Deloitte Touche Tohmatsu Service), Bin Song (Google), Daniel Stodolsky (YouTube), Ravi Sundaram (Northeastern University), Joel Wein (Google), Chen Welinder, Yoav Yerushalmi (Google)

At the ACM level, two SIGCOMM members have been selected as ACM Fellows this year: K.K. Ramakrishnan and Geoffrey M. Voelker, One other member of the community was recognized as an ACM Distinguished Member, Sharad Agarwal.

### Industry Liaison Board

Three years ago, an industrial liaison board (ILB) was established with the goal of coming up with ideas and suggestions to increase industry participation at SIG-sponsored conferences. The ILB is currently chaired by Venkat Padmanabhan. A summary of its recent activities follows:

* **Industrial demos**: In the initial years, the ILB owned and drove the industrial demos process. However, more recently, including in 2018, the process has been driven by the designated industrial demos co-chairs in the conference organizing team, with the ILB playing an advisory role. The initial call for demos in 2018 received a rather tepid response, following which the ILB stepped in and had the chairs extend the deadline by a few weeks and leaned on them to be more proactive in getting the word out, including in the local region (Europe). The ILB members also used their own networks to spread the word. In the end, there was a healthy response and the conference program has ~13 industrial demos, which is as good or better than it has been in the past years.

Based on the experience from 2017, where the industrial demos were segregated in a separate room, the ILB also urged the industrial demos co-chairs and the general co-chairs for 2018 to have these demos be part of the regular demo program in terms of the venue and timing. Hopefully, this suggestion will be acted on at the 2018 conference.

Additionally, based on the experience from 2018 and the past years, the ILB had the following suggestions going forward:

* The industrial demos chairs should be proactive in seeking demo proposals. Assuming that these will come anyway is unlikely to work since the industrial demos track isn’t quite as established as the paper or regular demos track. Besides, the industrial audience we seek to attract may not have SIGCOMM on their radar.
* Particular emphasis should be placed on reaching out to companies in the local region, who are more likely than others to be willing to travel to the conference.
* The chairs should feel free to leverage the ILB’s network and, in any case, should keep the ILB informed of their progress, so that lacunae, if any, can be detected and plugged sooner rather than later.
* At the conference itself, the industrial demos should be co-located with the regular demos to maximize opportunities for engagement between the SIGCOMM attendees and the industry folks.
* **Student survey done after SIGCOMM 2017**: After SIGCOMM 2017, the ILB surveyed the student attendees on behalf of the EC and the ILB, and received 79 responses. Major questions in the survey were as follows:
* “What did you hope to achieve at SIGCOMM?”: most people answered “learn about cutting edge networking research” and “network with attendees.” 42% wanted to meet with potential recruiters, and 80% wanted to get to know senior researchers.
* “Which event did you find most useful?”: 38% said “hallway conversations”, 30% said “attending talks”, 11% said “student dinner”, 6% said “mentoring moments”, 5% said “banquet”, and the rest were below 5%.
* “Least useful?”: 42% answered “none”. “Student dinner” and “reception” each got 17%, banquet got 9%, “attending talks” got 5%.

92% of the respondents did attend the student dinner. 85% rated it 3 or better on a 0..5 scale, with 5 as the best rating. Reasons for at least 50% of attendees were “hang out with students”, “free food”, “meet industry attendees”, and “meet organizers and senior researchers” — in particular, 55% were specifically interested in meeting industry people. However, only 38% actually made a connection with someone looking for an intern or employee. (But 55% had interesting technical conversations with industry people, which might mean that a conversation doesn’t count as a a “connection.”) 43% said they wanted more industry people at the student dinner, 37% “about the same”, and 10% didn’t realized industry people were invited. 56% liked receiving a list in advance of industry people and their interests, 36% did not, and a few didn’t realize that the list existed.

51% of students stated that they want a dinner format that encourages more mingling, 17% want a sit-down dinner, and the rest don’t care. 52% would like us to keep the student dinner while 25% would be happier with two banquets.

### Support for the community and projects aimed at broadening participation and/or diversity

On the heel of his appointment our new director for diversity and inclusion, Marinho Barcellos, undertook a review of the SIG’s standing using data from membership reports, conference attendance, program chairs, and participation in program committees. The results confirmed our expectation that women are generally under-represented, even if our situation is comparatively better than in other SIGs. With respect to geo-diversity, the data confirmed that conference attendance and representation are predominantly US-based. This provides a baseline we can use to evaluate progress.

A specific initiative currently underway is the creation of a network of researchers in Latin America, a currently under-represented region but with substantial potential to grow. We hope to inform research groups there about the benefits of getting involved with the SIG, and also understand their reality to become more efficient in how we support them to gradually increase engagement in conference participation and organization.

The SIG has also been using its strong financial position to help initiate and provide financial support to a number of activities. In particular, it awarded a total of about $280k in various grants to support either travel to conferences (mostly though not solely limited to students) or a variety of events, *e.g.,* summer schools or regional conferences, of interest to the SIGCOMM community.

In particular, our geo-diversity program continues to provide support of up to $10k to events such as AINTEC, APNET, and COMSNET. In addition we provide up to $40K in geo-diversity grants that support faculty and students from under-represented regions in attending our sponsored conferences. Additional support is also available for attendance of TPC meetings.

We continue to support the N2Women organizations with travel grants to the SIGCOMM Conference ($20k) as well as other smaller conferences, and supported the organization of an N2Women dinner at SIGCOMM 2017 (~$12k). We are currently in the process of discussing broadening of our support with the N2Women leadership to help organize a more permanent participation by N2Women across our conferences.

We provide $15k in support for the CRA-W Grad Cohort Workshop, which is used to allow SIGCOMM students to attend the Workshop. We also support attendance of the workshop by a couple of senior SIG members to represent the SIG at the workshop.

We have been continuing the practice of preview talks at the SIGCOMM conference. The talks seek to provide background on the papers to be presented during the technical sessions. Preview talks have been popular among students who feel they allow them to get more out of the conference by helping them come up to speed on ‘hot’ topic areas.

At SIGCOMM 2017 we shifted our approach to childcare support from trying to organize childcare support on site to offering childcare grants. This only had limited success in 2017, possibly due to limited advertising of this option, but we are trying to expand it for SIGCOMM 2018 and have also provided similar support (up to $5k) at SOSR’18.

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

### Issues facing the SIG

Besides the fact that data communications has matured as a research area, the SIG (like other SIGs) continues to face a challenge when it comes to increasing its diversity. We are focused on addressing this issue, but an incident earlier this year that related to a previous situation involving possible sexual harassment drove the point home that there is still much room for progress. The new ACM policy against discrimination and harassment that strengthened the SIG’s own policy and is now prominently displayed in all our conferences represents a step in the right direction, but it is only one step and much work remains to be done in this area/

# SIGCSE FY’18 Annual Report

**July 2017 - July 2018**

**Submitted by: Amber Settle, SIGCSE 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.

## Awards

The SIGCSE Award for Outstanding Contribution to Computer Science Education was presented to Tim Bell for his significant and lasting impact on computing education internationally through the development of innovative resources and activities, such as “CS Unplugged,” that inspire and engage students and teachers at all educational levels.

The SIGCSE Award for Lifetime Service to Computer Science Education was given to Eric Roberts for outstanding service to computing education, making significant contributions to computing curricula and pedagogy, and generously sharing his knowledge and wisdom through mentoring and guidance to others in the computing education community.

## Significant papers on new areas that were published in proceedings

ICER 2017 had two best paper awards.

The Chair's Award is selected by the organizing committee and was presented to Holger Danielsiek, Laura Toma, and Jan Vahrenhold for their paper "An Instrument to Assess Self-Efficacy in Introductory Algorithms Courses".

The ICER 2017 John Henry Award is selected by the conference attendees and was presented to Kathryn M. Rich, Carla Strickland, T. Andrew Binkowski, Cheryl Moran, and Diana Franklin for their paper "K-8 Learning Trajectories Derived from Research Literature: Sequence, Repetition, Conditionals".

In 2018 the SIGCSE Symposium gave three best paper awards.

The Best Experience Report Paper was awarded to Fredrik Heintz and Linda Mannila for “Computational Thinking for All: An Experience Report on Scaling up Teaching Computational Thinking to All Students in a Major City in Sweden.”

The Best New Curricula, Programs, Degrees, and Position Paper was presented to Sathya Narayanan, Kathryn Cunningham, Sonia Arteaga, Joe Welch, Leslie Maxwell, Zechariah Chawinga, and Bude Su for “Upward Mobility for Underrepresented Students: A Model for a Cohort-based Bachelor’s Degree in Computer Science”.

The Best CS Education Research Paper was awarded to Christine Alvarado, Gustavo Umbelino, and Mia Minnes for “The Persistent Effect of Pre-College Computing Experience on College CS Course Grades.”

There was a single Best Paper Award given at ITiCSE 2018. It was awarded to Ali Erkan for “The Educational Insights and Opportunities Afforded by the Nuances of Prim's and Kruskal's MST Algorithms.” The ACM Europe Council sponsored the award and presented the winner with a certificate and a 1000 Euro cheque.

## Innovative programs which provide service or broadened participation 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 2017 call funded three projects. $4,800 was awarded to Michael Morgan, Matthew Butler, and Chris Gonsalvez from Monash University and Jane Sinclair from Warwick University for a project entitled “An Analysis and Interpretation Framework for Student Engagement Benchmarking Data.” The project will provide a framework for analyzing benchmark data to improve student engagement in computer science, as there is currently no widely used systematic process to evaluate and interpret student engagement data. $4,000 was awarded to Jaime Spacco from Knox College for a project entitled “CQDR: Clicker Question Data Repository.” The project will expand and improve an online repository of clicker questions that have been used in courses using peer instruction which will be publicly available. $4,850 was awarded to Andrew Luxton-Reilly and Ewan Tempero from the University of Auckland for a project entitled “How Do We Teach Debugging?” The project will address the difficulties of teaching and learning debugging by undertaking a detailed study of existing resources, and a repository and literature review will result from the project.

The May 2018 call funded three projects. $3,078 was awarded to Amanpreet Kapoor and Christine Gardner-McCune from the University of Florida to support a project entitled “CS Identity Development Interview Project”. The project focuses on the development of identity in computer science students, and the results of the study will include profiles of successful students and recommendations for faculty. $5,000 was awarded to Devorah Kletenik from Brooklyn College and Deborah Sturm from College of Staten Island for a project entitled “Developing a Serious Game to Reinforce Introductory Programming Concepts.” The project will result in a game to introduce programming concepts to undergraduate students and will be released under a free software license. $4,440 was awarded to David Touretzky of Carnegie Mellon University for a project entitled “Developing and Testing Activities Introducing Elementary School Students to Artificial Intelligence.” The project will result in hands-on activities to introduce elementary school children to artificial intelligence concepts, and the resulting materials will be cataloged in a resource directory.

ITiCSE 2018 had nine working groups on the following topics: (1) Contrasting CS student and academic perspectives and experiences of student engagement, (2) Global Perspectives on Cybersecurity Education, (3) A Review of Novice Programming Research 2003 – 2017, (4) An International Investigation into Student Concerns regarding Transition into Higher Education, (5) Cloud Computing: Developing Contemporary Computer Science Curriculum for a Cloud-first Future, (6) Modeling Global Competencies for Computing Education, (7) Taxonomizing features and methods for identifying at-risk students in computing courses, (8) The Internet of Things in CS Education: Updating Curricula and Exploring Pedagogy, and (9) Promoting the adoption of educational innovations. The participants in the working groups develop a research project that culminates in a peer-reviewed paper. The projects foster international research collaborations.

Every other year the SIGCSE Board sponsors a New Educator’s Workshop where graduate students and new academics are provided with career information and mentorship. The New Educators Workshop took place on February 21, 2018 as a pre-symposium event before the 2018 Symposium. The workshop was organized by Andrea Danyluk (Williams College) and Zachary Dodds (Harvey Mudd College). Forty one new educators attended the workshop. There were nine speakers, including the two organizers. Additionally, there were guests from the NSF and NCWIT. SIGCSE provided travel grants of $500 to each of nine attendees, six graduate students, one postdoc, one adjunct community-college professor, and one participant who could not attend in 2016 for funding reasons. Most of the remaining attendees were new faculty.

On alternate years the SIGCSE Board runs a workshop for chairs of computing departments. The next Department Chairs Roundtable will be held in Minneapolis, Minnesota in February 2019.

The 2018 SIGCSE Symposium held thirty two three-hour workshops for professional development. In addition, the SIGCSE Symposium provided meeting space for thirteen events: Jumpstart Teaching Cybersecurity: C5 Instructional Modules Secure Scripting and Cybersecurity and Society, Computer Science Principles Providers and Teachers Forum, Integrating Cloud Computing into the Computer Science Curriculum, POSSE Roundup – Getting Started in an HFOSS Project, RESPECT'18: Research on Equity and Sustained Participation in Engineering, Computing, and Technology Conference, CS Education Infrastructure for All: Interoperability for Tools and Data Analytics, Professional Development Workshop for Teaching-Track Faculty, Strategies for Integrating the Updated ACM Code of Ethics into the Computing Curriculum, Machine Learning in the Classroom, Microsoft's Mixed Reality 250 Workshop, RPPforCS for Community Meeting, and NVIDIA Deep Learning Education Workshop.

A Doctoral Consortium ran in Tacoma, Washington, USA just prior to the 2017 The International Computing Education Research Conference (ICER) which was attended by nineteen graduate students in computer science education. SIGCSE provided travel grants to the students and partial funding for lodging to the discussants. The students presented their work at the workshop and also during ICER 2017. The SIGCSE Board will continue to fund up to twenty Doctoral Consortium grants in 2018.

SIGCSE has a Travel Grant Program for faculty and teachers who have never attended the SIGCSE Technical Symposium. Nine awards were given for the 2018 Symposium, including a high school teacher and one recipient from Chile.

The SIGCSE Speaker's Fund supports the dissemination of outstanding SIGCSE Symposium, ITiCSE conference, or ICER workshop presentations to non-ACM conferences that are in-cooperation with SIGCSE. In 2018 one grant was made to support Michelle Craig of the University of Toronto to present at the Western Canadian Conference on Computing Education (WCCCE).

SIGCSE’s 50th anniversary took place in 2018, and in celebration of the event one of the members of the SIGCSE Board wrote weekly history blog posts discussing the events that took place each year. These blog posts were sent out to the membership via the SIGCSE mailing list and were also posted on the sigcse.org site. In addition, the 50th anniversary of the SIGCSE Technical Symposium will take place in 2019. The SIGCSE Board is sponsoring 50 travel grants for attendees of the conference and providing additional funding for special activities celebrating the anniversary.

## Key Issues for the Next Few Years

SIGCSE will establish a new conference in 2019. SIGCSE Global will be offered initially once every two years and will be hosted in countries that are not currently served by any existing SIGCSE conference. The first SIGCSE Global will be held in Chengdu, China in May 2019. A steering committee for the conference has been created, and the steering committee will work in the next year both to support the organizers of the 2019 conference and to shape the direction that the conference will take in the next six years.

Two of the SIGCSE-sponsored conferences have experienced rapid growth in the past few years. The SIGCSE Technical Symposium had attendance of 1253 in 2016, 1501 in 2017, and 1735 in 2018. ICER had attendance of 79 in 2015, 119 in 2015, 105 in 2016, and 157 in 2017. The SIGCSE Board is working with conference volunteers to manage the growth of the conferences in a positive way that retains the character of the conferences.

The SIGCSE Board continues to work to find ways to nurture leadership among conference and other volunteers. Crucial for this is the volunteer development process discussed below, but equally important are robust term limits and rotation polices for existing volunteers. The Board continues to be active in developing documented approaches to term limits and leadership management for all SIGCSE conferences. The SIGCSE Board is also in the process of creating a volunteer historian position.

SIGCSE is in the process of creating new awards to recognize excellence in computing education research in the community. The proposed ACM SIGCSE Test of Time Award will recognize outstanding previously published work. Because the 2019 SIGCSE Technical Symposium in Minneapolis is the 50th annual event, SIGCSE proposes to create a one-time award to be presented in February 2019 at the SIGCSE Technical Symposium, followed by an annual award commencing in 2020 that can be presented at any SIGCSE event. Additionally, there will also be a Top Five ITiCSE Papers ranking and award, in conjunction with the 25th annual ITiCSE conference in 2020, and this award will be announced at the 2019 (24th annual) ITiCSE conference. The award proposal has been submitted to the SIG Governing Board Executive Committee for review.

Interest in computing education at the K-12 level continues to grow worldwide. The SIGCSE Board is exploring the possibility of offering joint membership with the Computer Science Teacher’s Association to better reach this population in the computing education community.

## SIGCSE Volunteer Development Process

SIGCSE's volunteers are recruited at conferences, on the SIGCSE listserv, and through annual articles in the SIGCSE Bulletin. Board members all attend the annual SIGCSE Symposium and encourage attendees to consider volunteering in some way. At sigcse.org there is a volunteer signup page with a list of possible SIGCSE positions, and whenever possible new volunteers are chosen from this list. Volunteers for a particular role are trained by the person previously in that role. Many of our positions are overlapping rotating positions such as for the SIGCSE Bulletin where two people work together, one experienced and one new. The SIGCSE Board is also piloting a repository for keeping important documents for organizational memory.

**SIGDA FY’18 Annual Report**

**July 1, 2017 – June 30, 2018**

**Submitted by: Vijaykrishnan Narayanan**

SIGDA has been a vibrant special interest group with multiple activities benefiting the design automation community. Two major awards were presented this year – honoring a pioneer and a paper that has had significant retrospective technical impact on EDA industry. New activities were also launched this year to broaden participation in areas outside the US. Finally, SIGDA announced partnership with Cadence in sponsoring several educational activities.

**Activities associated with financially sponsored or in-cooperated conferences**

* Sponsored/in-cooperated conferences
  + 16 financially sponsored conferences approved

The following is a list of events financially (co)sponsored by SIGDA.

* Student Research Forum at ASPDAC
* PhD forum at DAC
* Design Automation Summer School at DAC
* University Research Demonstration at DAC
* Young Faculty Workshop at DAC
* CADathlon at ICCAD
* CAD Contest at ICCAD
* Student Research Competition at ICCAD
* Ph.D. Forum at DATE
* Student Research Forum at ASPDAC
* Hardware and Algorithms for Learning On-a-chip at ICCAD
* School on Physical Design Automation (Porto Alegre, Brazil)
* Design Contest at International Conference on VLSI Design (Pune, India)

**Education activities of ACM SIGDA:**

In the past year, ACM SIGDA continues organizing the following education activities. More details can be found on SIGDA webpage.

1. PhD/Student Research Forums at DAC, DATE, and ASPDAC

2. Design Automation Summer school at DAC

3. University Research Demonstration at DAC

4. CADAthlon at ICCAD

5. ACM Student Research Competition (SRC) at ICCAD

6. Young Faculty Workshop at DAC

Besides the above activities, SIGDA communicates using SIGDA E-News and continues to deliver an online education program: SIGDA Live Webinar, which is held bimonthly.

**2018 SIGDA Awards:**

SIGDA Outstanding New Faculty Award: Shimeng Yu, ASU

SIGDA Outstanding Ph.D. Dissertation Award

(Joint winners)

“Standard Cell Optimization and Physical Design in Advanced Technology Nodes” by Xiaoqing Xu, Advisor: David Pan, UT Austin

“Deriving Abstractions to Address Hardware Platform Security Challenges” by Pramod Subramanyan, Advisor: Sharad Malik, Princeton University

**MAJOR AWARDS**

**SIGDA Pioneer Achievement Award:**

2018 winner: Professor Mary Jane Irwin, The Pennsylvania State University.

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.

**2018 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.

2018 winners: H. Eisenmann and F. M. Johannes, "Generic global placement and floorplanning," Proceedings 1998 Design and Automation Conference. 35th DAC. (Cat. No.98CH36175), San Francisco, CA, USA, 1998, pp. 269-274.  
doi: 10.1145/277044.277119

**Industry Collaboration**

Cadence continues to be the official “SIGDA Global Education Partner” since June 1, 2017 with an annual sponsorship for multiple SIGDA education activities.

SIGDOC FY’18 Annual Report  
Submitted by: Emma Rose, SIGDOC Chair

**Overview**

**Financials**

Our financial viability remains strong.

Opening: $85,603   
Ending: $87,757  
We netted $2,154 overall in 2018  
We are currently $67,526 over our required minimum

**Leadership**  
After electing a new Executive Committee in July 2016, we had several leadership changes in 2017-18. In December 2017, Dr. Kirk St. Amant, Vice Chair stepped down. To complete his term, Dr. Emma Rose, from University of Washington Tacoma was appointed as Vice Chair by the remaining members of the Executive Committee. In June of 2018, Dr. Claire Lauer stepped down as Chair of SIGDOC. According to ACM bylaws, Dr. Rose will replace Dr. Lauer and serve out the remainder of her term (June 2019). Dr. Kristen Moore continues to serve in her elected position of Secretary/Treasurer. Beyond the executive committee, we have seven additional board members supporting the organization.

Due to the recent changes in leadership and to the organization, we plan to to encourage and develop new leadership in preparation for elections in Spring 2019 and reinvigorate interest in leadership on the board. We are currently seeking a member of our community to fulfill the role of Vice Chair. In addition to leadership changes, we plan to engage in a variety of activities related to discussing the future of the organization, including gathering feedback at our annual conference and through online channels. This feedback will help inform the strategic direction of SIGDOC and hopefully increase interest and stability in the leadership roles.

**SIGDOC FY’18 Annual Report**

**July 1, 2017 – June 30, 2018**

**Submitted by: Emma Rose, SIGDOC Chair**

**Overview**

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**SIGDOC Conference 2017**  
Our flagship conference is our annual SIGDOC conference, which typically takes place in the summer or fall of each year. The SIGDOC 2017 conference took place in Halifax, NS  from August 11-13, 2017.

The conference committee included

* Conference Chair — Rebekka Andersen, University of California, Davis
* Program Chair — Elizabeth Keller, Indiana University – Purdue University Fort Wayne
* Student Research Competition Chair — Jason Swarts, North Carolina State University
* SIGDOC Chair – Claire Lauer, Arizona State University

We had 37 papers published in the proceedings and 85 attendees.

We saw a robust engagement with graduate and undergraduate students who participated in our Microsoft Student Research Competition; we featured well-known keynote speakers, including the Rigo Award winner, Dr. Karen Schriver, President of KSA Communication Design & Research and Karel Vredenburg Director, IBM Design. We saw robust attendance at our series of professional development workshops, Ignite talks, and the SIGDOC Research Network.   
   
The 2017 conference closed with the following:  
Total Revenue: $23,036.00  
Total Expenses: $16,878.91  
Allocation: $2,700.63   
Surplus/Loss: $3456.46  
Paid Attendance: 85  
Actual Attendance: 85

The research that our members are presenting at our conference continues to addressing salient and cutting edge issues and themes in communication design and technical communication work.

Highlights of the research published in 2017 include:

Usability in Communication Design: Typographic influence on content judgment and subjective confidence by Sookyung Cho and Steve Weiss

Navigating the Gig: Rideshare Drivers and Mobile Technologies in Context - Rachael Burke and Jacob Broderick

Designer Perceptions of User Agency in Environmental Risk Visualization Tool Development - Sonia Stephens

Women’s Perspective on Using Tinder: A User Study of Gender Dynamics in a Mobile Device Application - Milena Lopes and Carl Vogel

**Awards and grants**

At the 2017 conference, SIGDOC awarded the Rigo Award which celebrates an individual’s lifetime contribution to the field of communication design, to Dr. Karen Schriver, President of KSA Communication Design & Research.

In addition in 2017, SIGDOC awarded its first Best Paper award to Emma J. Rose and Elin A. Björling for their paper, “Designing for Engagement: Using Participatory Design to Develop a Social Robot to Measure Teen Stress.” We plan to continue to present a best paper award at future conferences to highlight the rigorous and impactful work being done in the field.

In Fall 2017, we also awarded our first two Career Advancement Research Grants. One was awarded to Dr. Laura Gonzalez, for her project “Designing a Multilingual User Experience Research Center to Support Language Accessibility in a Binational Community”. The other was awarded to Dr. Daniel Richards and Dr. Sonia Stephens, “Story Mapping and Sea Level Rise: Bringing a Global Risk Home.”

**Communication Design Quarterly**

Our publication, Communication Design Quarterly, continues to contribute valuable, peer-reviewed publications that are shared broadly. There have been two significant developments in the past year for CDQ.

First, we applied to transition CDQ into a Journal/Transactions publication for ACM. While aspects of the proposal were well received, it was ultimately denied by ACM due to our small size and a previous attempt at a journal almost 20 years prior which was unsuccessful. While our community was disappointed by this development, we plan to continue to strategize and align with other similar organizations to demonstrate the need and potential audience for moving CDQ to an ACM journal.

Second, 2018 marks the shift from Kirk St.Amant as Interim Editor to Derek Ross as Incoming Editor-in-Chief. The formal announcement of the transition was publically made and SIGDOC members were notified that all new manuscripts (submitted in 2018) were to be routed to Derek (Incoming Editor-in-Chief). Derek began representing CDQ at publishers round tables and other events at conferences (e.g, CPTSC) with Kirk representing CDQ in one instance where Derek was unable to attend in person (ATTW 2018 conference).

For 2018, Kirk oversaw the publication of all four CDQ issues (that had been previously planned and coordinated under Kirk’s interim editorship). Kirk’s term as Interim Editor will conclude with the publication of the fourth and final 2018 issue of CDQ (an issue on accessibility guest edited by Sean Zdenek). In 2018, Derek assumed the responsibilities of receiving new manuscripts beyond 2018, coordinating the review of those manuscripts, and working with one special issue guest editor (Sarah Beth Hopton) on the production of her issue.

Under his leadership, Derek has increased CDQ’s editorial board from 9 to 47, located internationally, all of whom are experts in some facet of communication design. This increases both our reach, and our ability to thoroughly and professionally address article reviews. He has also made various changes to editorial policies including special issues and length, which are available through our website, which is maintained and updated regularly by Website Manager, Adam Strantz.

In Fall 2018, CDQ will move to an Online First model of publication which will allow us to ensure that cutting-edge research is made available in a timely fashion. Non-special issue articles will be published individually on our website as they are edited and processed, then collected into quarterly journals for archival. We are currently developing a pipeline of articles, including one that has been accepted and will become our first Online First publication, one rejected following review, three articles in revise/resubmit status, and one article out for a second round of reviews following revision. We also have at least two active queries being developed as articles.

Both the outgoing interim editor and incoming Editor-in-Chief have repeatedly raised the issue of the need for funding to support CDQ. SIGDOC is committed to supporting the editors and their work in producing this publication. We are working towards a formalized funding model that will include supporting travel for the editor, editorial assistant, and journal-maintenance materials.

All of the issues for 2018 were guest edited special issues scheduled for purposes of creating a backlog of original manuscripts with which the Incoming Editor-in-Chief could use to begin developing new issues for 2019.  These four special issues were/are

6.1 -- “Future Plans for Future Plans for the Communicating Complex Information: Selected Papers from the Symposium on Communicating Complex Information”

Guest editor: Dan Richards

6.2 -- “Mapping the Complex Contexts of Use”

Dedicated/thematic issues edited by Kirk St.Amant

6.3 -- “Perspectives on Preparing Technical Communication Professionals for Today and the Future”

Guest Editors: Rebekka Andersen and Carlos Evia

6.4 -- “Reimagining Accessibility and Disability in Technical and Professional Communication”

Guest Editor: Sean Zdenek

Top 5 downloaded articles for 2017

1. “Design Principles for Health Wearables” (161 Downloads)

By John Jones, Catherine Gouge, Mariah Crilley

Vol. 5 No. 2

2. “Helping Content: A Three-Part Approach to Content Strategy with Nonprofits” (140

Downloads)  
 By Suzan Flanagan, Guiseppe Getto

Vol. 5, No. 1

3. “Patient Experience Design: Expanding Usability Methodologies for Healthcare” (136

Downloads)  
 Lisa K. Meloncon

Vol. 5, No. 2

4. “The Past, Present, and Future of UX Empirical Research” (126 Downloads)  
 By Joy Robinson, Candice Lanius, Ryan Weber

Vol. 5, No. 3

5. “Framework Negotiation and UX Design” (96 Downloads)   
 By Andrew Mara

Vol. 5, No. 3

*Note: These numbers are all almost double (in some cases, triple) the top 5 downloaded articles for last year/2016.*

The most downloaded single issue was Vol. 5, No. 1 (584 downloads), which is 2.5 times (more than double) the most downloaded issue of 2016.

Social Media  
Our social media reach continues to expand, we have a total of 757 followers on Twitter, which is 9 more than the previous year, and 78 more Facebook followers, for a total of 426.

Membership

As SIGDOC continues to rebuild, the leadership team is developing strategic plans for reviving membership in SIGDOC. Currently, our membership is at 127; our strategic plan will seek to increase membership to 200 by 2021.   
  
**Future Goals**  
Due to the recent change in leadership in the organization, our short term goals is to stabilize the organization to create a foundation for future growth. As part of these efforts, we will be gathering data from current members and conference attendees about their aims for the future of SIGDOC. We also continue to seek a Vice Chair to move in the executive committee. Further, we will be recruiting current members to run for office as we hold Elections in Spring 2019.

Our 2018 conference is upcoming on Aug 3-5, 2018 at the Milwaukee School of Engineering and will feature three days of conference activities, including two workshops, and a variety of panels and paper presentations. w

Our 2019 conference will be held in Portland, OR and will be cohosted by several institutions. The dates are still to-be-determined, but we will return to a two-day conference schedule in 2019. Our goal is to have conference locations selected 2-3 years in advance. We also plan to develop criteria for how and where to select conference locations. We also plan to seek out partnerships where we can co-locate with other academic and professional organizations.

Although the strategic plan will be more fully developed in Spring of 2019 as the new officers are onboarded, see our current plans under the future goals section.

* Developing a long-term slate of conference locations, including collocation with other influential organizations in the field;
* Offering webinar versions of conference workshops that require membership;
* Sponsoring SIGDOC panels at other conferences to increase visibility of the organization;
* Creating community-based partnerships with organizations invested in the Design of Communication to deepen the slate of Diana Award nominees and increase membership from the community;
* Committing to industry partnerships through the development of an Industry Liaison position on the board, whose responsibility would be to do outreach for industry partners and solicit and program at least one industry-driven panel;
* Committing to community partnerships through the development of an 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;

In addition to these new strategies, we will continue working with Women in Technical Communication and supporting the Microsoft Student Research Competition.   
  
Updating the bylaws - The executive committee, in consultation with an appointed bylaws committee, will be revising the bylaws to update the outdated SIGDOC vision statement and make other changes that will streamline the operations of the SIG.

**SIGecom FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Kevin Leyton-Brown, SIGecom Chair**

SIGecom serves as a bridge between theoretical research on economic systems (conducted by those in the fields of economics and operations research as well as computer science) and the application of such ideas in industry and elsewhere. As this report details, we are very successfully carrying out this mission: we attract top researchers and publications on topics that span theory and practice (with a relative emphasis on the former) and maintain close relationships with—and ongoing conference sponsorship from—some of the most significant companies in our sector (notably Microsoft, Facebook, Uber, Lyft, Google). However, maintaining this position requires a careful balancing act, ensuring that we continue to accommodate the viewpoints, research methodologies, and publication practices of different communities.

SIGecom's four primary activities are convening the annual *Conference on Economics and Computation* (EC), adjudicating paper and dissertation awards which are announced at this conference, producing the electronic newsletter *SIGecom Exchanges*, and running the journal, *ACM Transactions on Economics and Computation* (TEAC).

The 19th ACM Conference on Electronic Commerce (EC'18) was held at Cornell University in Ithaca, NY, June 18-22, 2018. The program chairs were Edith Elkind (Oxford University) and Rakesh Vohra (University of Pennsylvania); the general chair was Eva Tardos (Cornell University). For only the third time since 2006, and in response to popular demand from the community, this conference was not co-located with another event; furthermore, we held the conference inexpensively on campus at a relatively accessible North American location. The result was record-setting attendance: over 315 attendees for the two-day workshop/tutorial program, the three-day main conference program, or both. (This was about 15% more people than we have ever had, which was last year, which in turn was 25% larger than our previous record.)

The SIG gave three paper awards at the 2018 conference. First, we awarded the Test of Time Award to three related papers: *Position Auctions* by Hal R. Varian; *Internet advertising and the generalized second-price auction: Selling billions of dollars worth of keywords*, by Benjamin Edelman, Michael Ostrovsky and Michael Schwarz; and *Truthful auctions for pricing search keywords* by Gagan Aggarwal, Ashish Goel, and Rajeev Motwani. These seminal papers launched the formal microeconomic analysis of the auctions used to sell advertising keywords on the internet, and have profoundly shaped subsequent research in our field. Second, we awarded the Doctoral Dissertation Award to Aviad Rubinstein (Berkeley) for the dissertation *Hardness of Approximation: Between P and NP*, advised by Christos Papadimitriou. We also recognized two runners up for this award. The first was Christos Tzamos for the dissertation *Mechanism Design: From Optimal Transport Theory to Revenue Maximization*, advised by Costis Daskalakis. The second was Rachel Cummings for the dissertation *The Implications of Privacy-Aware Choice*, advised by Katrina Ligett. Third, we recognized the Best Paper at the conference: *Credible Mechanisms*, by Mohammad Akbarpour and Shengwu Li. This paper was published as an abstract, so we also awarded a second paper in the category Best Full Paper: *Selling to a No-Regret Buyer*, by Mark Braverman, Jieming Mao, Jon Schneider and Matthew Weinberg. This paper had a student lead author, so we did not award a third award in that category.

The TEAC journal is doing well. It continues to run by-invitation special issues of the most recent EC conferences and also draws papers similarly from the WINE conference. It has two editors (one from computer science and one from economics): David Pennock (CS; Microsoft Research) and Ilya Segal (Econ; Stanford University). They aim to continue growing the journal and cementing it as a preferred destination for work in our field.

Our Exchanges newsletter continues to publish two issues annually. The current editor is Hu Fu (University of British Columbia); he’s about to step down, and will be replaced by Matthew Weinberg (Princeton). For a fourth year in a row, in an effort to improve the EC academic job market, Exchanges has collected and published bios of all job market candidates.

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 our various workshops; tutorial presenters; workshop panelists; TEAC editors in chief and associate editors; SIGecom Exchanges editors; SIG executive; three best paper award committees; 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.

We had a remarkable number of new initiatives this year:

• We transitioned to double-blind reviewing from single-blind. Our hope is that this will lead to a fairer review process and help to increase the diversity of the conference. We intend to run a two year experiment, analyzing data from the first year and then presenting the results at the 2019 business meeting.

• We adopted a new timetable, with workshops on Monday, the conference Tuesday to Thursday, and workshops on Friday. Previously we ran the workshops and tutorials in parallel on the first two days. The change appeared to be popular; in particular, it helped to ensure that the conference didn’t have declining attendance throughout the technical program on the last day.

• For the second year running, we video recorded all technical talks and tutorials, with the SIG covering the costs. Leveraging the availability of these videos, we initiated a new award this year: Best Presentation by a Student/Postdoc. This award will be adjudicated after the conference by a committee that watches the videos after the fact, based on nominations from session chairs.

• Recognizing that our SIG finances are healthy enough to permit us to take on new expenditures, we initiated a mechanism for funding new special initiatives outside our usual operations, adjudicated by the workshop and tutorial chairs and approved by the SIG executive. This year we funded student scholarships through a new mentoring workshop; student travel; and a women’s breakfast.

• The new mentoring workshop was a great success; it attracted 50 students, half of whom received sponsorship (awarded based on need). We received funding from the NSF in addition to the SIG.

• We instituted an ACM EC Code of Conduct, which registrants were required to confirm that they accepted during the registration process.

• We held a new event that we called “AGT Fest” as part of the conference. At this event, we held invited talks about excellent papers that recently appeared in other publication venues; these talks were selected based on nominations and adjudicated by a dedicated committee. Our goal was preventing fragmentation, drawing in underrepresented communities, and maintaining EC as a “one-stop shop” for cutting edge research at the boundary between economics and computer science. This year we had three papers that appeared at both CS conferences and a top Econ journal. The event was very successful; we hope to grow it to include more papers next year.

• We initiated a process for nominating top, accessible papers for consideration as CACM Research Highlights.

• We successfully lobbied the CORE Rankings to upgrade the rating of our conference from B to A\* (http://portal.core.edu.au/conf-ranks/14).

• A special subcommittee considered ways to strengthen our outreach to the empirical and experimental community. It recommended convening a special issue at an area journal; targeted outreach to likely authors; strategic choices of invited speakers.

• An ad hoc committee on Publications Process investigated our publications pipeline. They ended up writing new LaTeX templates in coordination with Sheridan Printing.

• We voted on changing the name of the SIG. SIGecom currently stands for “electronic commerce”; without changing the acronym, we proposed that it instead stand for “economics and computation”. This better reflects the focus of our SIG, and parallels the name of both our conference and journal. The vote carried with overwhelming support.

• An ad hoc committee considered whether to move our conference from one annual deadline to two (without changing the timing of the conference itself). The committee wrote a long and thoughtful report that generated much conversation in the community, and much discussion at the business meeting. In the end, the community decided to keep the current format, but people appreciated the committee’s efforts in providing a clear, well thought out proposal that could be considered.

• Last year the community voted overwhelmingly to add a third track to the conference. This year’s program chair chose to accept a number of papers that did not require a third track; nevertheless, we intend to go along with this change next year.

We continue to maintain a couple of practices that are unusual (unique?) among ACM conferences, so the following description is preserved from last year’s summary:

• To accommodate authors who publish journal papers in non-CS venues that do not allow previous conference publication, we allow single-page abstracts (which are reviewed as full papers and presented identically at the conference). This has grown from five or ten percent to over half the papers in the conference, forcing us to think carefully about the link between talks and archival papers. We now structure our best paper awards to allow recognizing an abstract-only paper but to ensure that at least one archival paper is recognized (as, indeed, happened in 2018).

• We have an unusual “tracks” system in which papers are designated as belonging to either one or two of “theory”; “AI” and “empirical”. Each of these has a separate SPC who oversee all papers having that area’s “tag”. This reassures minority communities in the conference that their work will be reviewed according to the community’s own standards, but is somewhat complex to handle in the conference management system (because papers may have two tags). We currently have a subcommittee exploring alternative conference management systems that can support our conference structure while still being more modern.

**SIGEVO FY’18 Annual Report**

**July 2017 - July 2018**

**Submitted by: Marc Schoenauer, SIGEVO Chair**

**EXECUTIVE BOARD**

Elections to the Executive Board will take place next year, and one third of the board will be renewed. The following members have their term ending in 2019 (beside myself): Enrique Alba, Kalyanmoy Deb, Michael O'Neill, Terence Soule, Darrell Whitley.

Una-May O’Reilly (current vice-chair) will chair the nomination committee.

**BUSINESS MEETING IN BERLIN**

GECCO 2018 is formally outside the report period, but very close, so I shall report on the results of the business meeting that took place in Kyoto during this conference, as they cover most of SIGEVO activities in the last 12 months.

As usual, the chair and E-i-C of both 2018 and 2019 GECCOs were also invited.

The following announcements and decisions were made at the meeting:

1. The first GECCO in Asia (Kyoto, Japan) was a huge success: Submissions are very high for a non-European GECCO (513 full papers, involving 1896 different authors from 55 countries, with China, USA and Japan as leading countries). Acceptance rate was kept below 40% (194 full papers). Nevertheless, and in spite of our fears regarding travel distance and cost, the attendance is the highest ever in GECCO history, with almost 700 attendees (691). Direct poster submissions continued to be a success, with 65 submissions (and 31 accepted, not counted in the acceptance rate).
2. GECCO will go back to Europe next year, in Prague. Unfortunately, the designated General Chair, Thomas Stützle, suffered a cerebrovascular stroke a few days before GECCO. Hence he of course didn’t attend GECCO, but it seemed clear that he had to be replaced, or at least seconded in his GC tasks. Anne Auger, member of the Executive Board, has accepted to play this role, and we have at the moment two co-GC, though Anne will most probably – alas - be doing most of the work from now on. In any case, Thomas, together with Petr Posik, the local chair, had already well advanced the organization: the venue has already been chosen, and everything looks on track.
3. SIGEVO Newsletter has now reached a steady state, and the transition from Emma Hart to Gabriela Ochoa has been effective as of June 2018. Issue 11:2 was published just before this GECCO.
4. Job Ads continues to be a success, though the scheduling of the live session during one of the (short) lunches at GECCO has impacted its attendance. It is planned to move it in parallel with the poster session next year. Tea Tusar wishes to gradually stop handling this, and Boris Naujoks will second her next year.
5. The new GECCO web site, based on tikiwiki CMS, seems to have reached a steady-state too, as the 2019 team took over its customization without pain, thanks to both 2018 and 2019 electronic media chairs.
6. The concept of SIGEVO Summer School, piggybacking on GECCO, was slightly modified this year, run by JJ Merelo, member of the Exec Board. It involved students and mentors during 2 days before the conference, and the last afternoon after the conference. As in previous year, the students had a small project to work on and present in the last day, and received advice from the mentors about which tutorials, workshops and paper sessions to attend based on their experience and current home projects. The advertisement needs to be improved, and some incentive given to the mentors, as only 26 students registered, and only 5 mentors contributed. The heterogeneity of the students levels also needs attention next year: a pre-registration will be set up, with some screening of candidates.
7. The 2 new awards, an “outstanding achievement” award, that have been submitted for ACM approval are advancing: They both have been approved by the ACM SIG Chairs, the “Best PhD dissertation” award was officially approved by ACM Award Committee a few days after GECCO, and we are still waiting for the final approval of the other one, the outstanding achievement award. Added to the “Impact Award”, this will result in SIGEVO having 3 awards (the Impact award has been on-going since 10 years now).

**SIGEVO FINANCES**

SIGEVO continues to be in good shape financially, with events usually not producing deficits. Our reserves are healthy, and we are looking at ways (cf. Award ad-hoc Committee, Summer School) to use surplus for rewarding our membership through higher visibility and more services for students: Student support in travel grants at GECCO has been at $25K per year (continued this year). Call for innovative projects have been issued during GECCO closing session.

**AWARDS**

**Competitions**: Five competitions were held at GECCO-2018 with awards and prizes presented at the SIGEVO Annual Meeting. The areas of the competitions were

* Black Box Optimization
* Internet of Things: Online Anomaly Detection for Drinking Water Quality
* Niching Methods for Multimodal Optimization
* The General Video Game AI
* Virtual Creatures

**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.

There were 16 entries, and 8 were selected as finalists, and presented during GECCO. The winners are

Gold Medal*: A new Evolutionary Algorithm-based Home Monitoring Device for Parkinson’s Dyskinesia*, Michael Lones, Jane Alty, Jeremy Cosgrove, Philippa Dugan-Carter, Stuart Jamieson, Rebecca Naylor, Andrew Turner, Stephen Smith; Heriot-Watt University, UK; Leeds General Infirmary, UK; University of York, UK.

Silver Medal: *Emergent Solutions to High-Dimensional Multi-Task Reinforcement Learning*, Stephen Kelly and Malcolm I. Heywood; Dalhousie University, Canada.

Bronze Medal (tie)*:*

* *A Hybrid Method for Feature Construction and Selection to Improve Wind-Damage Prediction in the Forestry Sector*, Emma Hart, Kevin Sim, Barry Gardiner, Kana Kamimura; Edinburgh Napier University, UK; ISPA, INRA, Bordeaux Sciences Agro, France; Institute of Mountain Science, Shinshu University, Japan.
* *Approximating Complex Arithmetic Circuits with Formal Error Guarantees: 32-bit Multipliers Accomplished*, Milan Ceska, Jiri Matyas, Vojtech Mrazek, Lukas Sekanina, Zdenek Vasicek, Tomas Vojnar; Brno University of Technology, Czech Republic.

**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. However, a new voting procedure was experimented with this year: each attendee received one single voting ballot allowing her or him to vote at one single Best Paper Session. This novelty was well-received by most attendees.

**GECCO Impact Award**: The “SIGEVO Impact Award” is given every year to recognize up to 3 high impact papers that were published in the GECCO conference proceedings 10 years earlier. Criteria for selection are high citation counts and impact deemed to be seminal. Selection is made by the SIGEVO Executive Committee.

This year, the Impact Award was given to the following paper published in GECCO 2008 proceedings:

[Adaptive operator selection with dynamic multi-armed bandits.](http://dl.acm.org/citation.cfm?id=1389272)  
Luis DaCosta, Alvaro Fialho, Marc Schoenauer, and Michèle Sebag.  
In Maarten Keijzer (Ed), Proceedings of the 10th annual conference on Genetic and evolutionary computation, pp 913-920, ACM, 2008.

**ACM SIGGRAPH FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by Jessica Hodgins, SIGGRAPH President**

**Mission:**  
ACM SIGGRAPH's mission is to foster and celebrate innovation in Computer Graphics and Interactive Techniques. The organization promotes its vision by bringing people together in physical, on-line, and asynchronous communities to invent, inspire, and redefine the many creative and technical artifacts, disciplines, and industries that are touched by computer graphics and interactive techniques.

**Five-year Vision: Enabling Everyone to Tell Their Stories**

By **Everyone**, we mean not just our traditional audiences of professional movie, animation, and game makers but everyone with a story to tell, be they trained or novice, with significant time for the development of their story or intending to publish with just a single click.

By **Tell**, we mean all mechanisms of conveying a story: watching, experiencing, interacting, and creating.

By **Stories**, we mean not only our traditional media of movies, animations, and games but also newer forms of media such as augmented, virtual, or mixed reality, or forms of interactive and sensory experiences not yet invented. Stories may be purely digital or they may involve the physical artifacts either through incorporation or creation.

**Why this vision?**

* Computer Graphics and Interactive Techniques (CG&IT) is about communicating in innovative and inspiring ways.
* Telling stories using CG&IT, whether it’s explaining research findings, entertaining huge audiences or helping people understand the world, can change societies and cultures-we want to be the showcase for the existing and emerging fields that use CG&IT to connect people.
* We want to ensure we are relevant and meaningful to our existing diverse communities—this diversity of content and community has always been a strength of SIGGRAPH.
* We want to welcome newly emerging communities—this is critical to our future success.

**Strategy Work:**

For the past fifteen months, the ACM SIGGRAPH Executive Committee has been directing its work to support the strategic needs of our communities. We devote the majority of in-person meeting time to strategic discussions and save the administrative and operational work for bi-weekly hour-long tele-cons. We have formed six strategy committees within the EC with the assistance of a few non-EC members and some of the standing chairs:

**Nurturing our Existing Communities**

We added a new Chair and committee for Diversity and Inclusion to our list of standing committees (now 12). As chair, Tony Baylis is running a Diversity and Inclusion Workshop at the North American conference in 2018. He will also help support the existing programs such as Women in Animation. Following the lead of SIGARCH, we have also created a SIGGRAPH Cares group to provide a friendly and supportive ear at the conferences to those experiencing harassment. We are providing training for them on the Saturday before the conference about how to respond “in the moment”, keeping in mind, that all investigations of these situations will be conducted by ACM’s ethics committee.

We have added several awards to our program this year:

* Educators Award (to be awarded in 2019)
* SIGGRAPH Academy (first class inducted this year, comprised of former award winners from our highest-level awards)
* SIGGRAPH Practitioner Award (first awardee in 2018)

We have created a new PACM on Computer Graphics and Interactive Techniques. This publication will include papers from I3D and SCA/HPG in alternation. The first issue included papers from the very successful I3D conference that was held in Montreal in July.

We continue to promote the OpenTOC and OpenAccess models. In particular, we would like to find better ways to drive traffic to all of the content from the SIGGRAPH conferences and sponsor/co-sponsored conferences that is available on siggraph.org.

We are supporting our PhD students via a Doctoral Consortium and a Thesis Fast Forward at the North American Conference this year. The Doctoral Consortium is an all-day event for PhD students who are past proposal but not yet near graduation to provide input from a set of senior professors on their work and research direction. The Thesis Fast Forward is an event to allow PhD students to give a brief overview of their work to an audience of potential employers. The Doctoral Consortium will also be held at SIGGRAPH Asia in the fall.

We are scaling our Mentoring program for women and exploring the possibility of developing a Year-Round Mentoring Program for everyone at all stages of their careers.

**New Communities**

We are reaching 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.

* Sunday Workshops: Full day, interactive workshops on Health for Chronic Conditions, Autonomous Driving, and Truth in Images, Video, and Graphics
* SIGGRAPH Next: Morning talks on Education, Medicine, and Simulations

**Data**

We have recently begun exploring ways to capture more and better data about our members in order to better understand our audience and how we can best serve them. We are aligning post-conference survey data with the questions asked at registration to develop a picture of which communities we are serving and how well we are serving them. This committee is also collecting existing demographic data from membership renewal to develop a model of our membership.

**Communication**

We have developed a press release program that showcases about a half-dozen specific pieces of content from each conference. We have contracted with a technical writer to assist in this process.

This committee is also focusing on our year-round message. We have formed the Computer Animation Festival Advisory Board to align the SIGGRAPH Asia and SIGGRAPH North America CAF’s, and allow us to use a traveling version of the CAF to build awareness of SIGGRAPH. We are developing a Conference-in-a-Box to allow chapters to put on a “Best of SIGGRAPH” mini- conference with our support. We are planning to use the SIGGRAPH Conference in a Box/content at partner events (UNITE, GTC, Eurographics, and others to be identified).

We have established a mailing list for the graphics community for announcements of positions, conferences, and other relevant material: [graphics-worldwide@siggraph.org](mailto:graphics-worldwide@siggraph.org)

We are considering hiring a Strategic Marketing Consultant to clarify our brand, messages and value of membership.

**Digital Presence**

We are improving our Digital Presence by revamping our use of social media to hopefully have increased impact at reduced volunteer labor. We are planning to port our site from drupal to wordpress for easier updating.

We are collecting up existing assets with an eye toward making them more accessible and findable. We are building a knowledge graph of the SIGGRAPH material in the ACM Digital Library.

**Governance**

Over the past two years, this committee has extensively revised our bylaws. This revision is now with the voters (election ends 8/15). The major proposed changes are

* All elected positions will be director positions and ACM SIGGRAPH’s officers will no longer be elected to specific positions through member elections.
* EC to appoint up to three voting members to its rank from core constituencies as needed
* Elect the directors to specific position (at least two candidates per open position rather than a minimum of N+1 candidates for N positions)

The committee is now revising the policy document in an attempt to prune extraneous information and add documentation of current practice and recent changes (new awards, new standing chair, etc.). This process should be completed in September.

**Conferences**

**SIGGRAPH 2017**

The annual North American SIGGRAPH conference is a five-day, interdisciplinary educational experience in the latest computer graphics and interactive techniques. It includes a three-day commercial exhibition that attracts hundreds of exhibitors from around the world. The conference also hosts the international SIGGRAPH Computer Animation Festival, the leading annual festival for the world's most innovative, accomplished, and amazing digital film and video creators. For SIGGRAPH 2017, the festival moved beyond the flat screen to present short films and experiences in a new space, the VR Theater, where attendees experienced the next generation of storytelling in virtual reality.

SIGGRAPH 2017 accepted 127 juried technical papers (out of 439 submissions), an acceptance rate of 28 percent. Forty papers from [*ACM Transactions on Graphics*(TOG)](http://cts.businesswire.com/ct/CT?id=smartlink&url=http%3A%2F%2Ftog.acm.org%2F&esheet=51560909&newsitemid=20170517005548&lan=en-US&anchor=ACM+Transactions+on+Graphics+%28TOG%29&index=2&md5=d36615ed515af50aeb6c6808bf2f1e45), the foremost peer-review journal in the graphics world, were also presented. Quoting the Papers Program Chair, Marie-Paule Cani: “Among the trends we noticed this year was that research in core topics, such as geometry processing or fluid simulation, continues while the field itself broadens and matures. The fourteen accepted papers on fabrication now tackle the creation of animated objects as well as of static structures. Machine learning methods are being applied to perception and extended to many content synthesis applications. And topics such as sound processing and synthesis, along with computational cameras and displays, open novel are exciting new directions.” Of the accepted papers, the percentage breakdown based on topic area was as follows: 30% modeling, 25% animation and simulation, 25% imaging, 10% rendering; 4% perception, 3% sound, and 3% computational cameras and displays.

**SIGGRAPH Asia 2017**

The 10th ACM SIGGRAPH Conference and Exhibition on Computer Graphics and Interactive Techniques in Asia took place in Bangkok, Thailand, from 27 – 30 November 2017. This was the first time that the conference was hosted in Thailand. The Technical Papers program received a total of 312 submissions, out of which 75 were accepted to SIGGRAPH Asia 2017. The submitted articles represent the collective work of authors from 30 different countries.

**Awards**

SIGGRAPH presented seven awards at SIGGRAPH 2017:

**2017 Steven A. Coons Award: Jessica Hodgins**

Selected as this year’s recipient in recognition of her foundational work in character animation, her support and cultivation of emerging researchers, and her extensive volunteer service to the computer graphics community.

**2017 Computer Graphics Achievement Award: Ramesh Raskar**

Selected as this year's recipient in recognition of his numerous, impactful research contributions in computational imaging and light transport, Ramesh has advanced the field in a wide variety of areas, including femto-photography, light-field displays, and augmented reality.

**2017 Significant New Researcher Award: Bernd Bickel**

Selected as this year's winner for his work in computational fabrication and in facial modeling and animation.

**2017 Outstanding Service Award: Alyn Rockwood**

Selected as this year’s recipient for his long-term and significant contributions to both the ACM SIGGRAPH organization and its conferences.

**2017 Lifetime Achievement Award in Digital Art: Ernest Edmonds**

Selected as this year’s recipient for his major contributions to the development of computational art and to the broader field of contemporary art from the late 1960s.

**2017 Outstanding Doctoral Dissertation Award: Jun-Yan Zhu**

His dissertation is arguably the first to systematically attack the problem of natural image synthesis using deep neural networks.

**Standing Committees:**

**Chapters Committee**

*Promotes, plans and facilitates the full integration of Chapter activities into ACM SIGGRAPH while identifying and facilitating the flow of additional ACM SIGGRAPH benefits through to Chapters. Provides a link for communication between ACM and Chapters regarding the details of ACM policies and procedures. Devises best “face” for Chapters on ACM SIGGRAPH Web presence. Ensures compliance with all relevant policies and procedures.*

We have 36 active professional chapters and 17 student chapters. The Chair of the Chapters Committee (Jacky Bibliowicz) has been working to help chapter leaders more easily establish and maintain their chapters. He hosts a workshop on chapters at both the North American and the Asian conferences and has created a web page template to make it easier to announce upcoming events and other news.

**Communications & Membership Committee**

*Recommends and then implements appropriate communication channels for the organization and its constituents. Designs and supervises build out of ACM SIGGRAPH electronic presence. Works with the EC to realize strategic communication and marketing goals. Oversees the SIGGRAPH Village at both SIGGRAPH conferences.*

The Chair of Communications (Barb Helfer) has been kept very busy with the operational tasks of keeping siggraph.org up to date, managing our social media presence, creating our monthly newsletter (Interactions). She has also been participating in our strategy efforts as part of the Communications Strategy Committee. Over the next year, we need to make our web page much easier to maintain and to find additional support to make this volunteer role more manageable.

**Digital Arts Committee**

*Fosters year-round engagement and dialogue within the digital, electronic, computational, and media arts. Facilitates dynamic scholarship and creative programming for the digital arts within the ACM SIGGRAPH organization. Promotes collaboration between artists and the larger computer graphics and interactive techniques community. Promotes collaboration between the Digital Arts Committee (DAC) and conference art programs.*

This committee has many activities at the conference and year-round. Those activities include a set of on-line, curated art shows as well as BOFs and a party at the conference for the Digital Arts Community.

**Diversity and Inclusion Committee (new in 2018)**

*Celebrates the diversity that exists within the ACM SIGGRAPH community and provides opportunities, both in-person and year-round, to connect with others with common backgrounds, ethnicities, and gender for mentoring and inspiration. The goal of this committee is to create a welcoming and nurturing community for everyone working in computer graphics and interactive techniques independent of gender, sexual orientation, ethnic background, or abilities.*

This new committee, chaired by Tony Baylis, will host a workshop on Diversity and Inclusion at SIGGRAPH 2018 and is also interacting with previously existing efforts in support of Diversity and Inclusion.

**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.*

The chair of this committee, Ginger Alford, has recently restructured this committee into a much better defined set of sub-committees each with key responsibilities in support of the education community of SIGGRAPH. Those include curriculum, a contest held each year at the conference, and the Education Booth at the conference. This committee also assisted in the writing of the proposal for an Educator’s award which will help to demonstrate the central position of this community in SIGGRAPH.

**External Relations**

*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.*

We are currently looking for a new chair of this committee as Jeff Jortner, the current chair is now chairing the ACM SGB. Over the next year, we hope to identify new organizations that are further from our traditional base but where the sharing of conference material and registrations will help both communities.

**Information Technology Services**

*Provides information services support to the ACM SIGGRAPH community. Manages the* [*siggraph.org*](http://siggraph.org/) *server infrastructure (software/hardware). Works with the ACM IS team as needed on technical issues for ACM SIGGRAPH and ACM. Responsible for maintaining a database of accounts and email aliases for tracking purposes (both creation and deletion as appropriate).*

This year this committee facilitated a migration to team drives within Google which was a significant improvement in productivity for our strategy teams. We will continue to roll this out across the committees over the next year.

**Nominations Committee**

*Selects slate for the annual Executive Committee election. Recommends candidates for Chairs of Standing Committees to the Executive Committee.*

This committee has a new chair, Rebecca Strzelec, who replaces Scott Owen who had served as chair for the past seven years. This role is no longer automatically assigned to the past president as it has been in the past but is instead selected by the EC.

**Publications Committee**

*Documents the content presented at our sponsored events, using channels that are efficient and cost-effective. Works with ACM Publications Board as new situations arise and on items with broader implications.*

The chair of this committee, Stephen Spencer, also serves on the ACM Pubs Board. This year, we launched the PACM on Computer Graphics and Interactive Techniques. Over the next year, he will document the processes of this committee to ensure an orderly transition when the time comes.

**Specialized Conferences Committee (SCC)**

*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.*

SIGGRAPH sponsors, co-sponsors, or is in cooperation with over 25 specialized conferences/year. A few of these conferences are encountering challenges with reduced submissions, attendance and revenue. This committee is working to ensure that we have a rigorous review of the conference budgets in advance of approving sponsorship and based on historical data from that conference. Next year and going forward, we would like this committee to reach out to new communities to help to broaden the base of attendees at our conferences and allow existing members insight into neighboring fields with problems that might be amenable to the algorithms and techniques of our field.

**Student Services Committee**

*Plan, develop and facilitate activities that integrate students into the ACM SIGGRAPH community. Provide demonstrable value to student members throughout the year.*

The XSV program (former student volunteers) has now been expanded to SIGGRAPH Asia and they are expanding their efforts in mentorship and portfolio and reel review at the conferences.

**Sub-Committee of Communications: Media Committee**

*This committee leads our efforts in video capture and streaming and manages our Vimeo and YouTube channels.*

The YouTube channel had over 300K plays this year. The top play was a piece on “War for the Planet Apes” which had about 50K views. Twenty-one events at SIGGRAPH 2017 were streamed.

**Sub-Committee of Communications: International Resources Committee**

*Support of the international community of SIGGRAPH through events and activities at the conference, particularly the International Village.*

The committee creates blog posts and podcasts about activities in particular regions, as well as maintaining a social media presence for the committee (separate from that of the organization or the conference). This year they created an infographic for their work which was very well received.

**Ad-hoc Committee: History Committee**

*The History Committee is a group of individuals each of whom has an interest in the history of ACM SIGGRAPH and its activities, artifacts, and community and stories. Their priorities are (1) to preserve the stories and artifacts of our community and industry, and (2) to make the collected materials broadly accessible by the public.*

Current activities include the scanning of a complete set of course notes from the SIGGRAPH conference and an archiving of past art shows. They are also recording conversations with past Coons Award winners and planning for the 50th SIGGRAPH in 2023.

**Key Issues facing ACM SIGGRAPH:**

Continued implementation of the five-year strategy for the organization and conferences. Ensuring that all involved groups are aligned with the five-year strategy.

Volunteer development is a continuing issue for all aspects of the organization. We have initiated a new recruitment effort for the organization but it is clear that much more needs to be done to ensure a robust and diverse volunteer base. The jobs have a tendency to grow without bound and we turn to the same volunteers repeatedly.

We plan to work with the Publications Board to ensure that permissions for our submitted content allow the capture of the maximum amount of content into the digital library in video form and to drive more traffic to the DL rather than author’s personal web pages.

SIGHPC

1. Awards that were given out

Travel grants to attend SC17 were given to 7 students: 3 undergraduate and 4 graduate students from universities in Spain, Finland and the United States.

Travel grants to attend PASC were given to 2 students: 1 undergraduate and 1 graduate student from Spain and India.

The inaugural ACM SIGHPC Emerging Woman Leader in Technical Computing (EWL/TC) was presented to Dr. Ilkay Altintas of the San Diego Super Computing Center. This is a biennial award recognizes a woman who has engaged in HPC and technical computing research, education, and/or practice for 5-15 years since receiving her highest degree. The award was given during the SC17 conference in Denver. Dr. Ilkay Altintas was presented a $2,000 cash prize, a plaque, and SIGHPC provided her travel support to SC.

The SIGHPC Dissertation award was approved this fiscal year. The initial award will be made in November 2018. As of the writing of the report, nominations have closed with 10 nominations being received. The committee is evaluating the nominations now.

The SC Conference Test of Time award was presented to Michael Wolfe, Portland Group division of the NVIDIA Corporation, for his SC89 paper, “More Iteration Space Tiling In proceedings”. The test of time award recognizes an enduring contribution from a paper presented at an SC conference at least ten years ago.

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

*ACM Gordon Bell Prize winner:* “18.9-Pflops nonlinear earthquake simulation on Sunway TaihuLight: enabling depiction of 18-Hz and 8-meter scenarios”, Haohuan Fu, Tsinghua University; Conghui He, Tsinghua University; Bingwei Chen, Tsinghua University; Zekun Yin, Shandong University; Zhenguo Zhang, Southern University of Science and Technology; Wenqiang Zhang, University of Science and Technology of China; Tingjian Zhang, Shandong University; Wei Xue, Tsinghua University; Weiguo Liu, Shandong University; Wanwang Yin, National Research Center of Parallel Computer Engineering and Technology; Guangwen Yang, Tsinghua University; and Xiaofei Chen, Southern University of Science and Technology.

*SC17 Best Paper winner:* “Extreme Scale Multi-Physics Simulations of the Tsunamigenic 2004 Sumatra Megathrust Earthquake”, Carsten Uphoff, Sebastian Rettenberger, Michael Bade, Elizabeth H. Madden, Thomas Ulrich, Stephanie Wollherr, Alice-Agnes Gabriel.

*SC17 Best Student Paper winner:* “A Framework for Scalable Biophysics-Based Image Analysis”,Amir Gholami, Andreas Mang, Klaudius Scheufele, Christos Davatzikos, Miriam Mehl, George Biros.

*Other SC17 best paper finalists:*

“DataRaceBench: A Benchmark Suite for Systematic Evaluation of Data Race Detection Tools”, Chunhua Liao, Pei-Hung Lin, Joshua Asplund, Markus Schordan, and Ian Karlin.

“Exploring and Analyzing the Real Impact of Modern On-Package Memory on HPC Scientific Kernels”, Ang Li, Weifeng Liu, Mads R. B. Kristensen, Brian Vinter, Hao Wang, Kaixi Hou, Andres Marquez, and Shuaiwen Leon Song.

“Obtaining Dynamic Scheduling Policies with Simulation and Machine Learning”, Danilo Carastan-Santos and Raphael Y. de Camargo.

“sPIN: High-Performance Streaming Processing in the Network”, Torsten Hoefler, Salvatore Di Girolamo, Konstantin Taranov, Ryan Grant, and Ronald Brightwell.

3. Significant programs that provided a springboard for further technical efforts

The SC17 Cluster challenge with support and encouragement of SIGHPC focused on replication of scientific studies. All of the student teams were assigned the task of replicating the results of a selected SC16 paper. During the conference, they coded and demonstrated their efforts. Conference attendees were able to stop by the booths for each team and talk with the students about their efforts. This project promoted the importance of replication in CS. A special issue of the journal Parallel Computing will feature the best of these student efforts.

4. Innovative programs which provide 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. Currently we have virtual chapters in:

SIGHPC BigData Chapter: this chapter promotes the convergence between HPC and BigData.

SIGHPC Education Chapter: this chapter targets aspects of teaching HPC, developing educational or training materials, and curriculum development.

SIGHPC-RCE Chapter: this chapter's mission is to promote the advancement of the field of High Performance Computing in Resource Constrained Environments (RCE).

SYSPROS Chapter: 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.

5. Events or programs that broadened participation either geographically, or among under-represented members of your community and;

**ACM SIGHPC/Intel Computational and Data Science Fellowship Selects Third Class**

SIGHPC announced the third annual class of recipients of the ACM SIGHPC/Intel Computational and Data Science Fellowship. The fellowship is funded by Intel and was first announced at SC15. Established to increase the diversity of students pursuing graduate degrees in data science and computational science, the fellowship is designed to help students from racial/ethnic backgrounds that have not traditionally participated in the computing field. The fellowship provides $15,000 annually for study anywhere in the world; this year's winners bring the total number of fellows supported to 33. Awardees are also given memberships in SIGHPC for the duration of their fellowship.

Students were nominated by their graduate advisors. Nominees spanned disciplines from genetics and geography to engineering and mathematics and represented large, mid-sized, and small institutions in 32 countries. More than 80% of nominees were female, and more than 40% were identified as an underrepresented minority in their country of study. The nominations were evaluated by a diverse panel of experts from different races, genders, disciplines, and nationalities. Nominees were ranked based on their overall excellence in data science and/or computational science, their potential to serve as leaders, and their ability to be role models for a diverse workplace. Of the 7 students named as winners this year, six are women and all are underrepresented minorities in their country of study. They are pursuing MS and Ph.D. degrees in a variety of applied fields.

**ACM SIGHPC Emerging Woman Leader award: off year**

The ACM SIGHPC Emerging Woman Leader award is only given every other year, and will be next awarded in 2019.

**Advanced Computing for Social Change becomes Computing4Change, Re-designed for Repeatability**

Following the success of the pilot Advanced Computing for Social Change programs as SIGHPC's flagship SC16 and SC17 conferences, the SIG has decided to develop the concept into a repeatable competition that will be available for export to other SIGs. The SC16 program explored the rhetoric around the Black Lives Matter movement on social media, and participants at SC17 took a data-driven approach to the immigration debate.

This year the program has been restyled as a competition, and renamed Computing4Change. The program will again be hosted at SC, and remains a 4-day long engagement experience for college students designed to teach computation, data analysis, and visualization techniques in order to take a data centric view of a significant social issue. This year's topic will be chosen in cooperation with the participants themselves. Objectives of the program include; 1) engaging students in a social action challenge utilizing advanced computing techniques, 2) increasing the participation of students historically underrepresented in computing, and 3) creating a cohort of students to serve as future ambassadors at host conferences.

Significant changes for this year include the introduction of a competition, generation of manuals and reusable materials for potential future sponsors at other SIG events, and a variety of enhancements based upon feedback from two years of formal evaluation. The most significant of these enhancements is the introduction of six training webinars during the summer and fall preceding SC18 in November; these webinars will cover the fundamental data and computational skills students will need in the competition, and will allow them to spend their time onsite focused more intently on the challenge itself.

The 16 participants in this year's competition are citizens of five countries. Ten identify as female, two awardees identify as having a disability, and half have never attended a professional conference. Among awardees from the US, 33% are Black/African American, 25% Latino, 19% White, and the remaining are Asian, Native Hawaiian/Pacific Islander, or of Mediterranean descent. Students are from 16 different universities, 44% of which are classified as resource constrained by the Carnegie Classification of institutions of higher learning. At the completion of this year's event over 50 students will have participated in these activities.

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

The SIG will be challenged to increase value for non-US participants over the next several years, principally through relationships with workshops and conferences outside the US.

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 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.

**SIGIR FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Diane Kelly, SIGIR Chair**

***SIGIR focuses on all aspects of information storage, retrieval and dissemination, including research strategies, output schemes and system evaluations.***

**Key Initiatives and Accomplishments**

**Students**

* Awarded approximately $218K in student travel scholarships to those attending SIGIR-sponsored and co-sponsored conferences: SIGIR, CHIIR, ICTIR, CIKM, WSDM and JCDL.
* Continued to support the *Student Affairs Chair*, and the *Student Liaisons Program*. Solicited new applications for the Student Liaison program. Added one additional student liaison for a total of 7 (USA: 2; Europe: 2; Middle East: 1; Asia: 1; Australia: 1). Student liaisons the second *PhD Buddy Program* at this year’s SIGIR Conference. Student liaisons also organized a student party at a SIGIR sponsored conference (CHIIR).
* Hosted a *Student Lunch* and *Student Party* at the 2018 SIGIR Conference.

**Diversity, Equity and Inclusion**

* Hosted a *Diversity, Equity and Inclusion Lunch* at2018 SIGIR Conference.
* Provided space and support for the *Women in IR* group at SIGIR 2018, which was launched several years ago by our members.
* In conjunction with Google, offered student travel scholarship to those from underrepresented groups to attend the SIGIR Conference.
* Sponsored CRA-W and sent a volunteer to staff a booth.

**Community**

* The SIGIR 2017 Conference set a record attendance with 911 participants. This year’s SIGIR conference also had a strong attendance, with 700+ participants.
* Conducted a member survey to gather community feedback about ACM Artifact Badging, use of pre-printer servers (specifically, posting papers on pre-print servers while the paper is under double-blind review at conferences), and ideas about the reviewing practices.
* Initiated a *SIGIR* *ACM Badging Taskforce* to develop procedures for implementing ACM Artifact Badging. This Taskforce has met multiple times and will pilot the implementation procedures in upcoming months.
* Initiated a co-sponsored Africa Summer School on Information Search and Data Mining with SIGKDD (the official title is “ACM SIGIR/SIGKDD African Workshop on Machine Learning for Data Mining and Search”). This event is scheduled to take place at the end of January 2019 in Cape Town, South Africa.
* Provided feedback to ACM about the Policy Against Harassment at ACM Activities, shared this with community members via multiple channels and on multiple occasions, and asked all conference leaders to post a link to this policy on their conference websites.
* Initiated bi-annual conference calls among the SIGIR Executive Committee and conference leaders. Conference leaders in this context are the Steering Committee Chairs of all SIGIR sponsored and co-sponsored conferences (CHIIR, ICTIR, CIKM, JCDL, WSDM) to make sure these conference leaders are aware of ACM policies and initiatives.
* Organized a formal meeting at the SIGIR Conference amongst the SIGIR Executive Committee and all recent and future SIGIR Conference general chairs and program chairs. While such meetings have happened informally in the past, our goal is to make such meetings a regular event at the SIGIR Conference to ensure that all relevant parties are invited and information gets shared as appropriate.
* Awarded approximately $42K through our *Friends of SIGIR* program to SIGIR members hosting local, IR-related events. Funding went to support events in a number of countries and included the *Forum on Information Retrieval Evaluation* (India), *IR Autumn School* (Germany), *Asia Information Retrieval Societies Conference*, *Australasian Document Computing Symposium* and *CORIA* (French Information Retrieval Conference).
* Two new chapters of SIGIR were formed: *SIGIR Tokyo* and *SIGIR Beijing*.
* Last year, we worked with the editor of *ACM Transactions on Information Systems* (TOIS) to develop a policy for authors of TOIS papers to present their work at conferences which are fully sponsored by SIGIR: SIGIR, CHIIR, ICTIR. At this year’s SIGIR Conference, there were 18 oral presentations of TOIS papers. Currently, we are discussing whether it is feasible to offer an unlimited number of oral speaking spots to TOIS paper authors, or whether to have a fixed number of competitive spots, while allowing all authors to present their work via posters.
* Obtained copyright clearance for all material found in the *SIGIR Museum* (<http://sigir.org/resources/museum/> ) and digitized and upload additional materials. The Museum contains historical reports, grey literature and books from the early days of IR research.
* Continued to support and nurture our recently launched SIGIR-sponsored conference, the *Conference on Human Information Interaction and Retrieval (CHIIR)* and the *International Conference on the Theory of Information Retrieval (ICTIR)*, which made their third and fourth annual appearance, respectively, in New Brunswick, NJ and Amsterdam, Netherlands.

**Ongoing and Future Initiatives**

* We are still working to make the best paper awards at CHIIR and ICTIR be official SIGIR awards, as well as the SIGIR Best Short Paper award.
* We will pilot the use of iThenticate (through ACM) to evaluate papers submitted to our conferences, and begin drafting a policy for how to use this tool to help us identify submissions that do not meet the standards regarding unique content.
* We are in the process of creating a new volunteer position, *Diversity, Equity and Inclusion Co-Chair*, and plan to appoint two people to this position in the upcoming months. These Co-Chairs will be responsible for organizing the Diversity, Equity and Inclusion lunch at the SIGIR Conference, starting the Diversity Scholars Program, and promoting DEI events and activities at other SIGIR-sponsored conferences.
* We will live-stream the SIGIR 2019 conference.
* We will have an election for new officers in the Spring 2019.

**Significant Papers**

* See award winning papers below.

**Awards**

* At the SIGIR 2018 Conference in July, we presented the *Salton Award*, which is the highest award given by SIGIR. This award is given every three years. This year’s recipient was Kalervo Järvelin from the University of Tampere, Finland.
* Worked with ACM to get plaques created and shipped to all *Test of Time* awardees from 1978-2001. We held a special awards ceremony at SIGIR 2017. We published a special issue of *SIGIR Forum* with all 30 papers reprinted (when possible), which was circulated in August 2017.
* In observance of the 40th Anniversary of the SIGIR conference, a team of people conducted a historical analysis of various aspects of past conference proceedings. This presentation was made in a special session at SIGIR 2017.
* Nominated members for various awards including ACM Fellow and ACM Athena Award.
* Financially sponsored SIGIR Best Paper Awards, CHIIR Best Paper Awards and ICTIR Best Paper Awards.
* At SIGIR 2017 (August 2017), the following awards were made:
  + **Best Paper**: BitFunnel: Revisiting Signatures for Search (Bob Goodwin, Michael Hopcroft, Dan Luu, Alex Clemmer, Mihaela Curmei, Sameh Elnikety, Yuxiong He)
  + **Best Student Paper:** Evaluating Web Search with a Bejeweled Player Model (Fan Zhang, Yiqun Liu, Xin Li, Min Zhang, Yinghui Xu, Shaoping Ma)
  + **Best Paper Honorable Mention** IRGAN: A Minimax Game for Unifying Generative and Discriminative Information Retrieval Models (Jun Wang, Lantao Yu, Weinan Zhang, Yu Gong, Yinghui Xu, Benyou Wang, Peng Zhang, Dell Zhang)
  + **Best Paper Honorable Mention** Classification by Retrieval: Binarizing Data and Classifiers (Fumin Shen, Yadong Mu, Yang Yang, Wei Liu, Li Liu, Jingkuan Song, Heng Tao Shen
  + **Best Short Paper** LiveMaps – Converting Map Images into Interactive Maps (Michael R Evans, Dragomir Yankov, Pavel Berkhin, Pavel Yudin, Florin Teodorescu, Wei Wu)
  + **Best Short Paper Honorable Mention** DBpedia-Entity v2: A Test Collection for Entity Search (Faegheh Hasibi, Fedor Nikolaev, Chenyan Xiong, Krisztian Balog, Svein Erik Bratsberg, Alexander Kotov, Jamie Callan
  + **Test of Time Award** Personalizing search via automated analysis of interests and activities, Jaime Teevan, Susan T. Dumais, Eric Horvitz, SIGIR 2005
  + **Test of Time Award Honorable Mention** A Markov random field model for term dependencies, Donald Metzler, W. Bruce Croft, SIGIR 2005
  + **Test of Time Award Honorable Mention** Information retrieval system evaluation: effort, sensitivity, and reliability, Mark Sanderson, Justin Zobel, SIGIR 2005
* At SIGIR 2018 (July 2018), the following awards were made:
  + **Best Paper**: *Should I Follow the Crowd? A Probabilistic Analysis of the Effectiveness of Popularity in Recommender Systems* (Rocío Cañamares, Pablo Castells)
  + **Best Short Paper**: *Cross Domain Regularization for Neural Ranking Models using Adversarial Learning* (Daniel Cohen, Bhaskar Mitra, Katja Hofmann, W. Bruce Croft)
  + **Best Short Paper Honorable Mention**: *Towards Designing Better Session Search Evaluation Metrics* (Mengyang Liu, Yiqun Liu, Jiaxin Mao, Cheng Luo, Shaoping Ma)
  + **Best Doctoral Consortium Presentation**: *Addressing News-Related Standing Information Needs* (Kristine Rogers)
  + **Time of Time Award**: *Improving web search ranking by incorporating user behavior information* by Eugene Agichtein, Eric Brill, and Susan Dumais, SIGIR 2006
  + **Time of Time Honorable Mention:** *Learning user interaction models for predicting web search result preferences* by Eugene Agichtein, Eric Brill, Susan Dumais and Robert Ragno, SIGIR 2006
  + **Time of Time Honorable Mention:** *Formal models for expert finding in enterprise corpora* by Krisztian Balog, Leif Azzopardi and Maarten de Rijke, SIGIR 2006
  + **Test of Time Honorable Mention:** *LDA-based document models for ad-hoc retrieval* by Xing Wei and W. Bruce Croft, SIGIR 2006

**Significant Challenges**

* We have a fairly significant problem with our website backend. The SIGIR domain hosts the organization’s website as well as sponsored conferences’ websites: SIGIR, CHIIR, ICTIR. All websites had to be shut-down on two occasions this year, including just before SIGIR 2018, because a large volume of spam emails were being generated from one site. This year, we will be investing options for having a professional service manage our webserver so that it is easy for volunteers to create and maintain sites while having minimal ability to make changes to the underlying structures.
* We will also continue to work on documenting policies and procedures which have traditionally been passed down orally.

**SIGITE FY’18 Annual Report**

**July 2017 - June 2018**

**Submitted by: Steve Zilora, Chair**

***Mission Statement***

SIGITE's mission is to provide a forum for the interaction of practitioners, educators and others in the field of Information Technology Education to exchange ideas and engage in activities that advance the knowledge of its members, the curriculum and teaching of information Technology and the development and transfer of innovative concepts and applications in teaching and pedagogy.

***2017 Annual Conference***

The 18th Annual Conference on Information Technology Education, co-located with the 6th Annual Conference on Research in Information Technology, was hosted by Rochester Institute of Technology and held in Rochester, NY October 4 – October 7, 2017. There were 94 submissions of papers, posters, panels, workshops, and lightning talks. For SIGITE, 23 of 58 papers were accepted (39%); for RIIT 6 of 11 papers were accepted (54%). While attendance (126) was lower than the previous two record years, it was one of the most profitable conferences in SIGITE history and the attendees rated the conference highly with more than 90% responding stating that key aspects were Very Good or Excellent.

At the 2017 SIGITE/RIIT Conferences, two best paper awards were presented:

(*SIGITE 2017 Best Paper Award Winner*)

*Educational Approach to Cyber Foundations in an Undergraduate Core Program*

Jason Hussy, Jacob Shaha, United States Military Academy

(*RIIT 2017 Best Paper Award Winner*)

*Monitoring Multicopters Energy Consumption*

Ilenia Fronza, Nabil El Ioini, Free University of Bozen-Bolzano; Matthias Moroder, Moritz Moroder, FlyingBasket, Bolzano, Italy; Luis Corral, ITESM / UAQ, Queretaro, Mexico

***Significant conference papers that have proven popular (as measured by download count****):*

*Analysis and Impact of IoT Malware*

Joel Margolis, Tae (Tom) Oh, Suyash Jadhav, Jaehoon (Paul) Jeong, Young Ho Kim, Jeong Neyo Kim

*EZSetup: A Novel Tool for Cybersecurity Practices Utilizing Cloud Resources*

Yanyan Li, Dung Nguyen, Mengjun Xie

***2018 Annual Conference***

The 19th Annual Conference on IT Education will be hosted by Broward College in Fort Lauderdale, Florida, October 3-6, 2018. There were 101 submissions of papers, posters, panels, workshops, and lightning talks. 24 of 60 papers were accepted (40% acceptance rate).

***Future Conferences***

* 2019 in Tacoma, Washington, hosted by University of Washington-Tacoma
* 2020 in Provo, Utah, hosted by Brigham Young University

***Significant programs that provided a springboard for further technical efforts***

The recently established practice of having a standing conference committee in addition to future conference hosts involved in the conference organization has begun to show benefits. This year’s conference had a record profitability and offered more activities for participants than those in prior years. We expect this further improvements and maturation in our conference offering.

The SIG played a key role in IT2017 Task Group providing four SIG members to serve in the group, hosting their meetings at our annual conference, and sponsoring a panel discussion at the conference.

We continued our efforts to include students by offering travel scholarships, but continued to see only a very small number take advantage of this. Our plan is to increase the amount of the scholarships in the hope of making it more attractive. Beginning with the 2018 SIGITE Conference we will also include a special track for PhD students to both present their work and advertise themselves in the marketplace.

***A brief description of the SIG’s volunteer development process.***

SIGITE continues to have an atmosphere of contribution amongst its members. Finding volunteers for various activities has never been a problem. We continue to use our standing and ad hoc committees as opportunities for members to “get a taste” of leadership.

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

Attendance at our annual conference has been growing, but we still struggle with submissions, particularly for the Research in IT (RIIT) conference. For the 2018 SIGITE conference we have suspended RIIT, but instead included a special track for research-oriented papers. Based on submissions (36), this has proven quite popular.

While our current membership is very active, the size of the SIG remains flat to slightly decreasing. We need to change that and grow the SIG. As part of this effort, we need to include community colleges and student groups.

Professional accreditation: we need more members involved in enhancing the communication/coordination flow between SIGITE, CSAB and ABET/CAC. More broadly, we need to establish a tighter relationship between the SIG and accrediting bodies.

**SIGKDD FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Jian Pei SIGKDD Chair**

**1. Awards that were given out**

SIGKDD gives out two groups of awards.

-  SIGKDD awards include SIGKDD Innovation Award, SIGKDD Service Award, Dissertation award;

-  KDD conference awards: best paper award, student travel awards, startup awards

**2. Significant papers on new areas that were published in proceedings**

Deep learning and reinforcement learning as well as applications.

**3. Significant programs that provided a springboard for further technical efforts**

We set up a deep learning day and a health science day in the KDD conference, in the hope to promote the interdisciplinary research in those strategically important areas.

**4. Innovative programs which provide service to some part of your technical community**

We created the new initiative of SIGKDD Impact Program.  The goal of the program is to support projects that promote data science, increase its impact on society, and help the data science community. Project duration is one year with the possibility of being extended.

**5. Events or programs that broadened participation either geographically, or among under-represented members of your community and;**

Jointly with SIGIR we are running the Africa Summer School on Information Retrieval and Data Mining in early 2019.  We also sponsored the European Data Science Summer School jointly with SIGMOD.

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

KDD is a very popular conference.  While the participation of KDD conferences is large, 3000 every year, how to turn those participants into active SIGKDD members remains a big challenge.

**SIGLOG FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Prakash Panangaden, SIGLOG Chair**

SIGLOG was subject to a viability review last year. I am very pleased that we were given a 4 year extension. There will be elections for a fresh executive in 2019 and we will see a new generation of community leaders take their place.

SIGLOG’s flagship conference the ACM-IEEE Symposium on Logic in Computer Science was held in June 2017 In Reykjavik on the campus of Reykjavik University. Because there were two LICS conferences in the last reporting period the 2017 LICS conference was not mentioned in the last annual report.

The conference was very successful with about 175 participants. The conference was sponsored by SIGLOG, IEEE, EATCS, ASL, Microsoft, Google, Reykjavik University and the Icelandic Centre of Excellence for Theoretical Computer Science.

The current office holders of SIGLOG are: Prakash Panangaden (chair), Luke Ong (vice-chair) Alexandra Silva (secretary) all of whom were on the original team at the time that SIGLOG was chartered in 2014 and were re-elected in 2016 for tems running from 2016-2019. Amy Felty was elected as treasurer for the same term. We are very pleased to have a gender-balanced executive.

On a tragic note, we note the death of Martin Hofmann who was PC Chair of LICS 2018. He died while hiking up a mountain trail in Japan in January 2018. There will be a memorial meeting at the upcoming FLoC conferences.

1. **Awards**

This was the second year that the Church Award was given. It went to 6 researchers who worked in three groups and, remarkably all converged on similar ideas at around the same time. They are Samson Abramsky (Oxford University, UK), Radha Jagadeesan (DePaul University, Chicago, USA) and Pasquale Malacaria (Queen Mary College, London, UK) who developed what are now called AJM games, Martin Hyland (Cambridge University, UK) and Luke Ong (Oxford University, UK) who developed what are called Hyland-Ong games and Hanno Nickau (Oxford University, UK) who independently developed a formalism very similar to Hyland-Ong games.

The citation, in brief read as follows: The 2017 Alonzo Church Award for Outstanding Contributions to Logic and Computation is given jointly to Samson Abramsky, Radha Jagadeesan, Pasquale Malacaria, Martin Hyland, Luke Ong, and Hanno Nickau for providing a fully-abstract semantics for higher-order computation through the introduction of game models, thereby fundamentally revolutionising the field of programming language semantics, and for the applied impact of these models. (Owing to the timing of the award ceremonies, this award was given in August 2017 so it is being reported here even though the award was announced in June 2017 and described in the previous annual report. The 2018 Award has been announced but will be presented in July 2018; it will be described in the next annual report so as to being these descriptions in line with the actual award ceremony.)

The LICS Test-of-Time Award Winners in 2017 were as follows:

All papers from LICS 1997 were considered for the 2017 LICS Test-of-Time Award. The Award Committee consisted of Amy Felty (chair), Christel Baier, Andrew Pitts, and Nicole Schweikardt.

[*Richard Blute*](http://lics.siglog.org/archive/papers/B.html#RichardBlute)[*Josée Desharnais*](http://lics.siglog.org/archive/papers/D.html#JoseDesharnais)[*Abbas Edalat*](http://lics.siglog.org/archive/papers/E.html#AbbasEdalat)[*Prakash Panangaden*](http://lics.siglog.org/archive/papers/P.html#PrakashPanangaden)  
**Bisimulation for Labelled Markov Processes**

The paper introduces labelled Markov processes as a continuous space variant of deterministic labeled transition systems where the dynamics of the state-action pairs is given by Markov kernels specifying the probability for measurable sets of successor states. The presented notion of bisimulation of labelled Markov processes is a conservative extension of Larsen and Skou’s bisimulation for discrete probabilistic transition systems. The paper presents a highly non-trivial proof for the transitivity of bisimulation on labelled Markov processes and first steps towards a logical characterization of bisimulation in terms of a probabilistic Hennessy-Milner logic. By introducing labeled Markov processes and a notion of bisimulation for them, the authors provided important foundations for the formal semantics and analysis of stochastic systems where physical components interact with discrete ones. The paper opened a new research area on continuous-space stochastic models and inspired many researchers to study further properties of labelled Markov processes and variants thereof.

[*Daniele Turi*](http://lics.siglog.org/archive/papers/T.html#DanieleTuri)[*Gordon D. Plotkin*](http://lics.siglog.org/archive/papers/P.html#GordonDPlotkin)  
**Towards a Mathematical Operational Semantics**

This paper introduced a new and mathematically elegant way of relating the syntax and semantics of programs, using the existing category-theoretic notion of a distributive law between monads and comonads. Specifically, it gives an abstract view of the structural operational semantics of concurrent processes as distributing behaviour over syntax, one which guarantees the existence of a most abstract, compositional semantics of the language. The paper was an early example of the usefulness of coalgebraic techniques in semantics and has been, and still is, an extremely influential paper within the coalgebra community.

The presentation of the awards took place at LICS 2017 in June.

The Kleene Award for the best paper at LICS by a student went to Amina Doumane for her paper Constructive completeness for the linear-time mu-calculus. This is the first time that this was awarded to a woman.

The 2017 Presburger Award went to Alexandra Silva for her outstanding contributions to theoretical computer science. The following paragraph is taken from the announcement by EATCS: Alexandra Silva has been instrumental in fostering the field of coalgebraic modelling and reasoning. In her groundbreaking thesis in 2010, she developed Kleene coalgebra, showing how automata and their extensions can be naturally embedded within a coalgebraic framework and formulating the coalgebraic analogue of Kleene's theorem. We are delighted at this recognition of one of our office holders.

**II. Significant developments in Logic and Computation over the past year**

There were several major technical results that emerged over the last year. The most celebrated is the proof of the long-standing Feder-Vardi conjecture or dichotomy conjecture by  Andrei Bulatov and independently by Dmitriy Zhuk. This states that the complexity of constraint satisfaction problems is either in P or NP complete. This is a major result combining logic, algebra and computational complexity.

A major result due to Martin Grohe is the proof properties of graphs with excluded minors are decidable in polynomial time if, and only if, they are definable in fixed-point logic with counting. This result is part of a large program to understand structural and computational complexity properties of graphs in logical terms. The proof is a tour de force and appeared as a monograph rather than as a journal paper.

In 2016 the Simons Institute ran a program on Logical Structures in Computer Science as part of an effort to bridge the algorithmic and the logical sides of theoretical computer science. One outcome was a paper in LICS 2017 by Samson Abramsky, Anuj Dawar and Pengming Wang: The Pebbling Comonad in Finite Model Theory which brings techniques from semantics and logic to bear on problems of finite model theory.

Major progress was made in understanding probability theory at higher type with another LICS paper by Chris Heunen, Ohad Kammar, Sam Staton and Hongseok Yang: A Convenient Category for Higher-Order Probability Theory. Sam Staton also won a best paper prize at ESOP for his paper Commutative Semantics for Probabilistic Programming. Alex Simpson won a best paper prize for his work on showing that cyclic arithmetic is the same as Peano arithmetic. *Cyclic proof* provides a style of proof for logics with inductive (and coinductive) definitions, in which proofs are cyclic graphs representing a form of argument by infinite descent. He showed that a cyclic formulation of first-order arithmetic is equivalent in power to Peano Arithmetic.

III. **Significant Programs**

SIGLOG continues its support of summer schools, student mentoring workshops and workshops for Women in Logic. We have allocated money to all three programs for the coming year. Again, owing the fact that the boundary of the reporting period is right in the middle of our usual conference times we have a gap in this report as the 2017 meetings happened in June last year and the 2018 meetings will be in July. The 2017 meetings were mentioned in the last annual report and the 2018 meetings will be described in the next one.

IV. **Innovative programs which provide service to our technical community**

The SIGLOG newsletter continues to be a valuable source of review articles on topics across a whole range of topics. Our support for diversity continues through mentoring workshops and discussions at the main conferences. The main activity for the coming year is the organization of the Federated Logic conferences which will include a summer school, 9 conferences and over 70 workshops. We are seeking special links with the machine learning community.

V. **Summary of key issues**

SIGLOG is stable for the moment but more effort needs to be put into growing the membership. Many people take advantage of SIGLOG contributions without being members. For example, the SIGLOG newsletter is freely available from the web site. We hope to become more proactive about supporting workshops that build the community and in sponsoring student participation in conferences and summer schools. We are actively cooperating with EATCS and EACSL in these efforts.

**SIGMETRICS FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Vishal Misra, SIGMETRICS Chair**

SIGMETRICS focuses on computer system performance, seeking to balance theoretical and practical issues. Members' interests typically include advancing the state of the art in addition to applying new performance evaluation tools and techniques in practice.

ACM Sigmetrics concluded another successful and very significant year in many ways. Some of the highlights of the year were:

## Awards:

Sigmetrics gives out a number of awards every year. This year the awards were:

**The SIGMETRICS Achievement Award**: **Prof. Jim Dai of Cornell University**for contributions to the fluid and diffusion analysis of queueing networks with applications to computer, communication, and processing systems.

**The SIGMETRICS Rising Star Research Award**: **Prof. Longbo Huang of Tsinghua University**for contributions to quantifying the fundamental benefits of online learning and prediction in stochastic network optimization.

**The SIGMETRICS Test of Time Award:** The 2018 test of time award went to “*Counter braids: a novel counter architecture for per-flow measurement*”, by Yi Lu, Andrea Montanari, Balaji Prabhakar, Sarang Dharmapurikar, Abdul Kabbani, published in Sigmetrics 2008.

## Conference and Workshops:

The annual conference ACM Sigmetrics was successfully held in Irvine, California at UC Irvine in June of this year and was well attended. Along with the main conference, a number of workshops were also organized.

* **CINS: Critical Infrastructure Network Security**
* **MAMA: Mathematical Performance Modeling and Analysis**
* **NetEcon: Economics of Networks, Systems and Computation**

4 well attended tutorials were also organized, on diverse topics

* **Anima Anandkumar, Furong Huang, The Role of Tensors in Deep Learning**
* **Aman Shaikh, Vijay Gopalakrishnan, Techniques for Monitoring and Measuring Virtualized Networks**
* **Ivo Adan, Johan van Leeuwaarden, Structured Markov Chains**
* **Li Zhang, Performance Modeling and Analysis of Deep Learning Systems**

Next year’s conference will be held as part of FCRC in Phoenix.

## Rearchitecting the main conference: A brief report

Two years ago the Sigmetrics executive board decided to explore moving the flagship conference to a journal/conference hybrid model. We submitted a proposal to ACM and got selected as the first conference to publish our proceedings as part of the Proceedings of the ACM series. The first conference under the new model was held this year.

From the year-2, we can describe the transition to the new multiple submissions and reviewing process a successful one from every measure. We had a record number of papers in the conference (54), without compromising on quality (a total of 270 submissions). The acceptance rate was 20%, which on its own is similar to past years, but the acceptance rate was much higher for the 1-shot revision papers, which is a direct result of our multiple submission and reviewing process. We have observed both more submissions and an improvement in the quality of submissions as the papers went through the reviewing process. A number of sister conferences are now keen to follow the model that we have instituted (e.g. NSDI).

**Challenges for the next 2-3 years**

The biggest challenge for the next 2-3 years is to ensure the success of the changed model for the conference. We are working with sister conferences and organizations (like IFIP Performance with whom we jointly hold a conference every 3 years) to make sure the transition happens smoothly. Another challenge for us is to increase the membership numbers. An effort in that direction is to increase our outreach to other communities.

## Other Issues

The finances, research activity and community involvement remains healthy for the SIG. The flagship conference generated over $11K in surplus last year and the reserves remain healthy. Like other SIGs, we are closely tracking the open access issues that are being explored by ACM.

SIGMIS DY’18 Annual Report

**July 2017 - June 2018**

**Submitted by: Fred Niederman, SIGMIS chair**

**Mission**

SIGMIS focuses on information systems and technologies and their management. SIGMIS promotes best-practice and research in the management of information systems and technologies and the use of these systems and technologies. As the oldest of ACM's SIGs, SIGMIS traces its beginning back to 1961, and for decades has been instrumental in defining and developing the field of management and information systems.

**Awards**

Beginning with ICIS (International Conference on Information Systems) 1995, SIGMIS became the sponsor of the ICIS MIS Doctoral Dissertation Award. In December 2017 In 2017, the award was given to Thi Van-Hau Trieu, supervised by Andrew Burton-Jones, both from University of Queensland, for the dissertation entitled "Three essays on effective use in business intelligence systems context.". Note that Professor Burton-Jones is a previous winner of this award in 2006 – so the apple doesn’t fall far from the tree.

Beginning at the 2004 SIGMIS CPR conference, SIGMIS initiated the “Magid Ibaria Outstanding Conference Paper of the Year Award.” This year at the 2018 SIGMIS CPR Conference, the recipient Stacie Petter (Baylor University) won for her paper – [“If You Can’t Say Something Nice: Factors Contributing to Team Member Silence in Distributed Software Project Teams”](https://dl.acm.org/authorize.cfm?key=N651779)

Additionally recognized for their poster presentation were: Sara Moussawi, Jeria Quesenberry and Randy Weinberg (Carnegie Mellon University)– [“Improving Student-Driven Feedback and Engagement in the Classroom: Evaluating the Effectiveness of the Speed Dating Model”](https://dl.acm.org/citation.cfm?id=3209626.3209739)

**Papers**

SIGMIS held the SIGMIS CPR Conference June 18-20, 2018, in Niagara Falls, New York. The conference program is available from the SIGMIS CPR conference website at: <http://sigmis.org/conference-program/>.

Additionally, SIGMIS publishes *The Data Base for Advances in Information Systems* (*Data Base,* for short), a quarterly peer-reviewed publication devoted to communicating advances in research and best practice in MIS. Beginning in January 2017, the editorship transitioned to Co-Editors-in-Chief Stacie Petter of Baylor University and Tom Stafford of Louisiana Tech University, for a three year term. Xihui “Paul” Zhang, University of North Alabama, is the Managing Editor. Heidi Seward, Baylor University, is the Technical Editor. For information about *Data Base*, please visit the SIGMIS website at: http://sigmis.org/the-data-base/.

**Programs**

Since 2006, SIGMIS has held the Computers and People Doctoral Consortium. This year’s CPR Doctoral Consortium was held on June 18, 2018 at the SIGMIS CPR Conference with 8 participating doctoral students and 3 faculty mentors. Doctoral students came from 5 countries (US 3, India 2, Singapore, Germany, and New Zealand). Beginning with the CPR 2011 conference, SIGMIS has been providing travel grants to Doctoral Consortium participants.

This year’s conference featured keynote plenary sessions at the main conference one oriented to academic issues, the other a practitioner following the conference theme.

Three panel sessions were also conducted. The first was primarily historical and academic: Looking Back at 20 years of best papers at SIGMIS CPR– Authors. Participants were: Mike Gallivan (Kennesaw State University); Deb Armstrong (Florida State University); Andreas Eckhardt (German Graduate School of Management and Law); Damien Joseph (Nanyang Technological Institute); Eileen Trauth (The Pennsylvania State University); Jeria Queensberry (Carnegie Mellon University)

The second addressed**: The IS Student and Professional: Current, Past, and Future.** Panelists were: Munir Mandviwalla, Temple University (chair); Fred Niederman, Saint Louis University; Craig Van Slyke, Louisiana Tech University; Monica Adya, Marquette University.

The third was an industry panel: Industry-Academia Panel on Conference Theme. Panelists were: Leslie Feidt, CIO, Erie County Medical Center; Ann Fruhling, University of Nebraska Omaha; T. Ravichandran, Associate Dean for Research, Rensselaer Polytechnic Institute; Lawrence J. Zielinski, Executive in Residence, Health Care Administration, University at Buffalo and former President, Buffalo General Hospital; Rajiv Kishore served as Panel Moderator.

Continuously since 2001, SIGMIS has held a networking reception at the ICIS conference. The reception at ICIS 2017 was held in December in Seoul, South Korea. An estimated 75 individuals from around the world attended including several prior dissertation award winners.

This year we have initiated a research grant program. Two recipients were selected, one from the US and the other from China. We are in the process of developing the mechanics for distributing payments and establishing linkages for communication and an eventual presentation of each at an upcoming SIGMIS conference. The purposes of the grant is to stimulate excitement about the SIG, to generate new interest areas, and to contribute to the body of knowledge in MIS. We plan to conduct a similar research grant program next year enhanced by what we’ve learned during this round.

We have begun the process of establishing new recognized awards in the area of lifetime membership, newcomer contribution, and three pertaining to distinguished editor and reviewer of the Data Base… and paper of the year in Data Base.

We have also, thank you to Damien Joseph, begun formalizing our “in cooperation” program with outside conferences. We hope to take similar action with other ACM conferences. Our goals are: to make the information about these conferences available to our members, to provide opportunities through our informal sponsorship for our members, if they wish, to participate in these conferences, and to promote our conference and publications to these groups and their members.

Listed on the SIGMIS.org site as a benefit to the IS community is sponsorship of the ACM representative to the International Federation for Information Processing (IFIP), Technical Committee 8 (TC 8), information Systems. In fiscal year 2017, George Kasper represented SIGMIS and ACM at the IFIP TC 8 meetings.

**Key Issues**

At our business meeting in June this year, we conducted a long discussion regarding the mission and strategy of the SIG. This discussion is summarized in the minutes of the meeting, posted on our website at sigmis.org. Though many opinions were expressed, the discussion emphasized providing a platform on which individual members could realize their own ambitions and make contributions to the larger MIS community.

Also discussed was the fact that we have had a number of very long term relationships with other organizations including IFIP that need to be reevaluated. We have begun reaching out to MIS community special interest groups, particularly regarding leadership and inclusion, which are key elements in the SIGMIS research domain.

Our two new newsletter editors continue to actively promoting *The Data Base*. One of the editors invested resources from his university to staff a Conference Exhibitor booth for the first time at ICIS 2016 to both promote the newsletter and solicit new members. This was replicated in 2017, however, the SIG will now take over funding this activity. We added this year a 5th issue to contain a special issue on cybersecurity. We are finding submissions to be a continual challenge given the strong competition for worthy papers, particularly from the papers listed in the “senior scholars” basket of 8. Nonetheless, the editors have been very active promoting the publication and organizing the operational mechanics so that contributors and reviewers have a positive experience, whether work is accepted for publication or not.

At the business meeting a long discussion was also conducted regarding the “ideal size” of the annual conference. There is much value in the closeness of a smaller conference, but there is also a threshold below which we do not want to fall. One strategy is to target a variety of interrelated topical interest areas, like leadership, inclusion, human resource management of computing professionals, and IT entrepreneurship-innovation.

It is our hope to make available contacts for participating in the ACM series of webinars.

It is also our hope to establish an informal support for naturally arising mentor relationships between SIGMIS newcomers and grizzled veterans.

**SIGMM FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Alan Smeaton, SIGMM Chair**

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

1. **Awards:**

SIGMM gives out three awards each year and these were as follows:

* SIGMM **Technical Achievement Award** for lasting contributions to multimedia computing, communications and applications was presented to *Arnold W.M. Smeulders,* University of Amsterdam, the Netherlands. The award was given in recognition of his outstanding and pioneering contributions to defining and bridging the semantic gap in content-based image retrieval.
* SIGMM 2016 **Rising Star Award** was given to *Dr Liangliang Cao* of of HelloVera.AI for his significant contributions in large-scale multimedia recognition and social media mining.
* SIGMM **Outstanding PhD Thesis in Multimedia Computing Award** was given to *Chien-Nan (Shannon) Chen* for a thesis entitled Semantics-Aware Content Delivery Framework For 3D Tele-Immersion at the University of Illinois at Urbana-Champaign, US.

1. **Significant Papers:**

The SIGMM flagship conference, ACM Multimedia 2017, was held in Mountain View, Calif. And presented the following awards plus other awards for Best Grand Challenge Video Captioning Paper, Best Grand Challenge Social Media Prediction Paper, Best Brave New Idea Paper

* Best paper award to “Adversarial Cross-Modal Retrieval”, by *Bokun Wang, Yang Yang, Xing Xu, Alan Hanjalic, Heng Tao Shen*
* Best student paper award to “H-TIME: Haptic-enabled Tele-Immersive Musculoskeletal Examination”, by *Yuan Tian, Suraj Raghuraman, Thiru Annaswamy, Aleksander Borresen, Klara Nahrstedt, Balakrishnan Prabhakaran*
* Best demo award to “NexGenTV: Providing Real-Time Insight during Political Debates in a Second Screen Application” by *Olfa Ben Ahmed, Gabriel Sargent, Florian Garnier, Benoit Huet, Vincent Claveau, Laurence Couturier, Raphaël Troncy, Guillaume Gravier, Philémon Bouzy  and Fabrice Leménorel.*
* Best Open source software award to “TensorLayer: A Versatile Library for Efficient Deep Learning Development” by *Hao Dong, Akara Supratak, Luo Mai, Fangde Liu, Axel Oehmichen, Simiao Yu, Yike Guo.*

The 9th ACM **International Conference on Multimedia Systems** (MMSys 2018), was held in Amsterdam, the Netherlands, and presented a range awards including:

* Best paper award to “Dynamic Adaptive Streaming for Multi-Viewpoint Omnidirectional Videos” by *Xavier Corbillon, Francesca De Simone, Gwendal Simon and Pascal Frossard*.
* Best student-paper award to “Want to Play DASH? A Game Theoretic Approach for Adaptive Streaming over HTTP” by *Abdelhak Bentaleb, Ali C. Begen, Saad Harous and Roger Zimmermann.*

The **International Conference in Multimedia Retrieval (ICMR)** 2018 was held in Yokohama, Japan, and presented a range of awards including:

* Best paper award to “Learning Joint Embedding with Multimodal Cues for Cross-Modal Video-Text Retrieval” by Niluthpol Mithun, Juncheng Li, Florian Metze and Amit Roy-Chowdhury

The best paper and best student paper from each of these three conferences were then reviewed by a specially set up committee to select one paper which has been nominated for *Communications of the ACM Research Highlights* and that is presently under consideration.

In addition to the above, SIGMM presented the 2017 ACM Transactions on Multimedia Computing, Communications and Applications (TOMM) Nicolas D. Georganas Best Paper Award to the paper “Automatic Generation of Visual-Textual Presentation Layout” (TOMM vol. 12, Issue 2) by Xuyong Yang, Tao Mei, Ying-Qing Xu, Yong Rui, and Shipeng Li.

1. **Significant Programs that Provide a Springboard for Further Technical Efforts**

* SIGMM provided support for student travel through grants, at all of our SIGMM-sponsored conferences.
* Apart from the specific sessions dedicated to open source and datasets, the ACM Multimedia Systems Conference (MMSys) has started to provide official ACM badging for articles that make artifacts available. This year, our second year for doing this, has marked a record with 45% of the articles published at the conference acquiring such a reproducibility badge.

1. **Innovative Programs Providing Service to Some Part of Our Technical Community**

* A large part of our research area in SIGMM is driven by the availability of large datasets, usually used for training purposes. Recent years have shown a large growth in the emergence of openly available datasets coupled with grand challenge events at our conferences and workshops. Mostly these are driven by our corporate researchers but this allows all of our researchers the opportunity to carry out their research at scale. This provides great opportunities for our community.
* Following the lead of SIGARCH we have commissioned a study of gender distribution among the SIGMM conferences, conference organization and awards. This report will be completed and presented at our flagship conference in October. We have also commissioned a study of the conferences and journals which mostly influence, and are influenced by, our own SIGMM conferences as an opportunity for some self-reflection on our origins, and our future. Both these follow an open call for new initiatives to be supported by SIGMM.
* SIGMM Conference Director Gerald Friedland worked with several volunteers from SIGMM to improve the content and organization of ACM Multimedia and connected conferences. Volunteer Dayid Ayman Shamma used data science methods to analyze several ACM MM conferences in the past five years with the goal of identifying biases and patterns of irregularities. Some results were presented at the ACM MM TPC meeting. Volunteers Hayley Hung and Martha Larson gave an account of their expectations and experiences with ACM Multimedia and Dr. Friedland himself volunteered as a reviewer for conferences of similar size and importance, including NIPS and CSCW and approached the chairs to get external feedback into what can be improved in the review process. Furthermore, in September, Dr. Friedland will travel to Berlin to visit Lutz Prechelt, who invented a review quality management system. The results of this work will be included into a conference handbook that will put down standard recommendations of best practices for future organizers of SIGMM conferences. We expect the book to be finished by the end of 2018.
* Last year SIGMM made a decision to try to co-locate conferences and other events as much as possible and the ACM Multimedia conference was co-located with the European Conference on Computer Vision (ECCV) in 2016 with joint workshops and tutorials. This year the ACM MultiMedia Systems (MMSys) conference was co-located with the 10th International Workshop on Immersive Mixed and Virtual Environment Systems (MMVE2018), the16th Annual Workshop on Network and Systems Support for Games (NetGames2018), the 28th ACM SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV2018) and the 23rd Packet Video Workshop (PV2018). In addition, the Technical Program Committee meeting for the Multimedia Conference was co-located with the ICMR conference.

1. **Events or Programs that Broaden Participation**

* SIGMM has approved the launch of a new conference series called Multimedia Asia which will commence in 2019. This will be run by the SIGMM China Chapter and consolidates two existing multimedia-focused conferences in Asia under the sponsorship and governance of SIGMM. This follows a very detailed review and the successful location for the inaugural conference in 2019 will be announced at our flagship conference in October 2018.
* The Women / Diversity in Multimedia Lunch at ACM MULTIMEDIA 2017 (previously the Women’s Lunch) continued this year with an enlarged program of featured speakers and discussion which led to the call for the gender study in Multimedia mentioned earlier.
* SIGMM continues to pursue an active approach to nurturing the careers of our early stage researchers. The “Emerging Leaders” event (formerly known as Rising Stars) skipped a year in 2017 but will be happening again in 2018 at the Multimedia Conference. Giving these early career researchers the opportunity to showcase their vision helps to raise their visibility and helps SIGMM to enlarge the pool of future volunteers.
* The expansion we put in place in our social media communication team has proven to be a shrewd move with a large growth in our website traffic and raised profile on social media. We also invite conference attendees to post on twitter and/or Facebook about papers, demos, talks that they think are most thought provoking and forward looking and the most active of these are rewarded with a free registration at a future SIGMM-sponsored conference.

1. **Issues for SIGMM in the next 2-3 years**

* Like other SIGs, we realize that improving the diversity of the community we serve is essential to continuing our growth and maintaining our importance and relevance. This includes diversity in gender, in geographical location, and in many other facets. We have started to address these through some of the initiatives mentioned earlier, and at our flagship conference in 2017 we ran a Workshop emphasizing contributions focusing on research from South Africa and the African continent in general.
* Leadership and supporting young researchers in the early stages of their careers is also important and we highlight this through 2 of our regular awards (Rising Stars and Best Thesis). The “Emerging Leaders” event (formerly known as Rising Stars) skipped a year in 2017 but will be happening again in 2018 at the Multimedia Conference.
* We wish to reach to other SIGs with whom we could have productive engagement because we see multimedia as a technology enabler as well as an application unto itself. To this end we will continue to try to hold joint panels or workshops at our conferecnes.
* Our research area is marked by the growth and availability of open datasets and grand challenge competitions held at our conferences and workshops. These datasets are often provided from the corporate sector and this is both an opportunity for us to do research on datasets otherwise unavailable to us, as well as being a threat to the balance between corporate influence and independence.
* In a previous annual report we highlighted the difficulties caused by a significant portion of our conference proceedings not being indexed by Thomson Web of Science. In a similar vein we find our conference proceedings are not used as input into CSRankings, a metrics-based ranking of Computer Science institutions worldwide. Publishing at venues which are considered in CSRankings’ operation is important to much of our community and while we are in the process of trying to re-dress this, support of ACM on making this case would be welcome.

**SIGMOBILE FY'18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Marco Gruteser**, **SIGMOBILE Chair**

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

In the past few 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, with about 700 members.

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

* Chair: Prof. Marco Gruteser (Rutgers University, New Brunswick, USA)
* Vice Chair: Prof. Jason Flinn (University of Michigan, Ann Arbor, USA).
* Secretary: Prof. Giovanni Pau (LIP6, France)
* Treasurer: Prof. Falko Dressler (University of Paderborn, Germany)
* Past Chair: Prof. Suman Banerjee (University of Wisconsin, Madison, USA)

**Awards**

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

Some of the notable award winners are mentioned below.

Outstanding Contributions Award: Prof. Teresa Meng (Stanford)

Rockstar Award: Prof. Kyle Jamieson (Princeton University)

Doctoral Dissertation Award: Fadel Adib (MIT, Advisor: Prof. Dina Katabi)

The SIGMOBILE Test of Time awards were selected by a committee chaired by Prof. Ashutosh Sabharwal. The committee comprising Prof. Xia Zhou, Prof. Serge Fdida, Prof. Guiseppe Bianchi, Prof. Luca Mottola, Prof. Shyam Gollakota, and Prof. Vijay Raghunathan selected the following articles:

* M. Satyanarayanan, “Pervasive Computing: Vision and Challenges,” IEEE Personal Communications, 8(4), August 2001.
  + The paper connects the vision of pervasive computing to distributed systems and mobile computing as we knew them then, then draws fundamental observations of what system components still needed to be developed and how. The paper is a travel in time. What we call today the “Internet of Things” was already described here, along with many other fundamental concepts such as edge computing, cloud offloading, energy-driven adaptation, thick and thin clients. As an eminent example of abstract thinking, the author revealed the essence of each and every research challenge independent of the technology available back then.
* Charles E. Perkins and Elizabeth M. Royer. “Ad-hoc On-Demand Distance Vector Routing,” ACM Workshop on Mobile Computing Systems and Applications (WMCSA), 1999
  + This paper presents AODV, perhaps the most influential ad hoc routing protocol to date. This algorithm proposes a novel and suitable solution for the operation of these dynamic and unstable networks. Its major impact on the industry and related standards demonstrate the practical importance of this work. Additionally, the protocol is a “must-teach” in academic curricula related to mobile networking.
* Eugene Shih, Paramvir Bahl and Michael J. Sinclair, “Wake on Wireless: An Event Driven Energy Saving Strategy for Battery Operated Devices,” ACM MobiCom 2002.
  + This paper pioneered the systematic use of low- and high-power radios in a battery-constrained device, by separating data and control channels, to minimize overall energy consumption. The approach is now used commonly in today’s mobile devices. Additionally, the rigorous experimental approach had a significant impact on the research methodology in mobile computing community.
* Jitendra Padhye, Victor Firoiu, Don Towsley and Jim Kurose, “Modeling TCP throughput: A simple model and its empirical validation,” 28(4),  ACM SIGCOMM, 1998.
  + The TCP model presented in this work is arguably the one that  significantly influenced the SIGMOBILE community. Not only elegantly simple but also capable of accurately predicting TCP’s throughput over a very wide range of loss rates. After two decades, it is still taught in several networking classes, and often used as a starting point for related modeling research.
* Rudolf Ahlswede, Ning Cai,  Shuo-Yen Robert Li and Raymond W. Yeung, “Network Information Flow,” 46(4), IEEE Transactions on Information Theory, July 2000.
  + This is the seminal work on network coding that had a profound impact on the networking and mobile systems communities. The information theoretic analysis led to significant academic work for more than a decade in the networking community on leveraging network coding to build systems that achieve higher reliability and throughput.
* Bret Hull, Vladimir Bychkovsky, Yang Zhang, Kevin Chen, Michel Goraczko, Allen K. Miu, Eugene Shih, Hari Balakrishnan and Samuel Madden, “CarTel: A Distributed Mobile Sensor Computing System,” ACM SenSys 2006.
  + This seminal paper proposed to leverage commodity sensing units on on-the-road vehicles to revolutionize the monitoring of road traffic and road hazard/surface for improving road safety. In addition to significant academic impact, the paper also generated real-world impact with the proposed concept being widely adopted in popular map applications. Additionally, the network stack designs to tolerate intermittent connectivity also had an impact on delay-tolerant mobile networking, including those targeting remote inaccessible regions.

**Highlight Papers**

**Significant and Innovative Programs**

SIGMOBILE organized the first ACM Internet of Things Day held with the MobiSys conference this year. In addition to a keynote by Vint Cerf (Google), the program included a panel, invited talks from local industry such as BMW or IBM, from other parts of Europe (Ericsson) and from the US (Intel). Speakers also presented short vision talks from an open call. The lively event was attended by about 200 participants. More details are available here:

[*https://www.sigmobile.org/mobisys/2018/iot\_day\_program/*](https://www.sigmobile.org/mobisys/2018/iot_day_program/)

SIGMOBILE’s MobiCom conference is piloting a multiple submission deadline model with 2 deadlines per year. Papers submitted to both deadlines will undergo the rigorous review process with decisions rendered at an in-person technical program committee meeting after the reviewing phase for each deadline.

SIGMOBILE is continuing to expand the SIGMOBILE YouTube channel through which we provide video-recorded talks from our major conferences and workshops. This content is publicly available and anyone can now watch the talks from our conferences at their convenience, even if they were not able to attend the conference itself. Engagement on this channel is rising significantly, with more than 80,000 views in 2017. Many of our viewers seem to be from countries that are traditionally underrepresented at our conferences, incuding Asia, South America, and Africa. This channel thereby allows us to reach many more constituents than our conferences and workshops currently do.

SIGMOBILE is delighted to continue to present the significantly transformed quarterly publication, GetMobile, 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.

SIGMOBILE also continues publishing technical papers in the mobile friendly ePub format which allows readers to better browse such materials on their phones and tablets. We have setup an arrangement by which any SIGMOBILE event can ensure that camera-ready papers can be easily converted into the ePub format and is made available through the ACM Digital Library. This reflects our commitment to keep up with the changing needs of the community and the ways in which we consume content in the modern world.

**Events or Programs to Broaden Participation**

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.

The 2nd Asian Students Symposium on Emerging Technologies (ASSET) was held on January 8th and 9th in Bengalaru, India and was co-located with the COMSNETS conference. 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. Each ASSET participant had to prepare a short research project writeup, record a 30s elevator pitch research presentation video, and present a research poster. These artefacts were evaluated by five faculty mentors (in small groups) and the students iterated their submissions based on this feedback. In the process, they substantially improved their ability to design, formulate, and communicate their research ideas. Overall, the 2nd ASSET was a tremendous success and was attended by 37 students from India, Singapore, Korea, and Bangladesh. The feedback from the student participants was very positive and we plan to have more such events in Asia and other continents.

In partnership with the N2Women group, we offer lunch meetings at our main conferences and occasionally a full day workshop that serve as a forum for researchers from underrepresented groups to network and to discuss career questions. Lunch meetings are organized by a graduate student under the mentorship of a senior researcher from the community. The graduate student is usually supported with a travel grant.

SIGMOBILE operates a student grant program that co-sponsors students travel costs to SIGMOBILE conferences. Conference organizers are asked to explicitly consider the goal of broadening participation when selecting travel grant awardees.

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

**Challenges and considerations facing the community**

**Greater industry engagement:** We believe that SIGMOBILE can engage even better with the mobile and wireless industry that is having such a significant impact in the world today. We have taken some initial steps, e.g., the IoT Day, a Wireless Industry Days workshop, and the Youtube channel, the revamped GetMobile publication with a broader appeal. But much more can and should be done, and we need to look for better and greater ways of engaging with our broader industry.

**Conference co-locations:** SIGMOBILE today sponsors multiple major conferences --- MobiCom, MobiHoc, MobiSys, SenSys, UbiComp, along with two newer additions, PerDis and WUWNet. Each conference has slightly different focus, has thrived over the years, and is considered a premier venue in the field. However, sometimes there is a concern that too many conferences may dilute a community and there maybe need for periodic co-locations and greater coordination. This is an issue that require further introspection.

**Summary**

Mobile computing and wireless networking are among the fastest growing fields within computer science and engineering, and as a result SIGMOBILE continues to be a strong, successful, well-supported organization. SIGMOBILE organized an IoT Day to reach out to industry and the wider technical community, is piloting new submission deadline models at its conferences.

The SIG’s conferences and workshops are well attended, creating a wealth of publications for the ACM digital library and the SIG’s members. The community continues to create significant impact both technically and to the broader society through research, education, and other activities.

**SIGOPS FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Robbert van Renesse**

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.  SIGOPS remains a highly active organization.  In addition, the two main chapters of SIGOPS, EuroSys and ChinaSys, are both very active.  Eurosys organizes a large conference annually and ChinaSys organizes two large meetings per year.  We recently held our flagship conference, SOSP, for the first time in Asia.  SOSP 2017 was held in Shanghai, with normal attendance from North American and European countries, but record attendance overall due to increased attendance from Asia. Professional SIGOPS membership dues remain at $10, and student membership is just $5 per year.  
  
SIGOPS publishes a quarterly newsletter, Operating Systems Review (OSR), which focuses on specific research topics or research institutions, manages an electronic mailing list, and maintains a web site: <http://www.sigops.org/>.  Jeanna Matthews and Tom Bressoud have retired as co-editors of Operating System Review.  These posts have been taken over by Mark Silberstein (Technion) and Chris Rossbach (UT Austin) and Kishore Pusukuri of LinkedIn who acts in the new position of Publication Director.  We are currently considering turning this newsletter into an online blog form.  
  
SIGOPS encourages participation in conferences and career building activities for young members of the community. For example, substantial funding was provided this year as travel grants for students to attend conferences and diversity workshops, with many of these grants targeted at women and underrepresented minorities.  We support SOSP, Eurosys, PODC, APsys, CRA Grad Cohort Workshop, SOCC, and VEE with student travel grants.  We also provide sponsorship for childcare services and travel grants earmarked for female and URM participants at major systems conferences in the past year to promote diversity.  
  
SIGOPS provides various awards to the community: the Dennis M. Ritchie Doctoral Dissertation Award, the Hall of Fame most influential paper award, and the Mark Weiser achievement award.  The various winners of the awards are listed at <https://www.sigops.org/awards>.  We appointed Nickolai Zeldovich (MIT) as the Awards Chair, but each award has its own committee.  
  
We have created a new summer school, the SIGOPS Summer School on Advanced Topics in Systems (SATIS), which will be held in August in Norway (<http://site.uit.no/satis2018/>).  The three-day summer school is targeted at Ph.D. students, junior faculty, and engineers, and easily sold out.  We are already in the planning stages for the next installment, to be held in China in 2020.  
  
SOSP 2019 will be held at the Deerhurst Resort, Huntsville, Ontario, Canada.  Tutorials and Workshops will be held Sunday Oct 6, 2019, and the conference Monday Oct 7 - Wed Oct 9, 2019.  Tim Brecht and Casey Williamson serve as General Chairs, and Remzi Arpaci-Dusseau and Yuanyuan Zhou as PC Chairs.  
  
We sponsor various conferences and workshops, including Symposium on Operating Systems Principles (SOSP), Eurosys, Asia-Pacific Workshop on Systems (APsys), Systems and Storage Conference  (SYSTOR), Hot Topics in Operating Systems (HotOS), Diversity Workshop, Architectural Support for Programming Languages and Operating Systems (ASPLOS, 25%), Virtual Execution Environments (VEE, 50%), Principles of Distributed Computing (PODC, 33%), Symposium on Cloud Computing (SOCC, 50%), and Embedded Networked Sensor Systems (SenSys, 10%).  We are in-cooperation with USENIX OSDI, NSDI, and FAST.  We also co-sponsor the CRA-W Grad Cohort Workshop.

**SIGPLAN FY ’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Michael Hicks, Past Chair**

**1. Awards that were given out:**

Robin Milner Young Researcher Award

2017 Derek Dreyer, Max Plack Institute for Software Systems (MPI-SWS)

Citation:

Derek Dreyer has made deep, creative research contributions of great breadth. His areas of impact are as diverse as module systems, data abstraction in higher-order languages, mechanized proof systems and techniques, and concurrency models and semantics. He has refactored and generalized the complex module systems of SML and OCaml; devised logical relations and techniques that enabled advances in reasoning about higher-order imperative programs; and developed novel separation logics for modular verification of low-level concurrent programs. His research papers are a model of clarity and depth, and he has worked actively to translate his foundational ideas into practice – most recently with the RustBelt project to provide formal foundations for the Rust language. Additionally, Dreyer has contributed leadership, support, and mentorship in activities such as the PLMW series of workshops, which are instrumental in growing the next generation of PL researchers.

2018 Ranjit Jhala, University of California, San Diego

Citation:

Ranjit Jhala has demonstrated a long track-record of producing foundational and impactful contributions to our understanding of programming language theory and implementation. Jhala was one of the principal developers of the BLAST automatic verification tool for checking temporal safety properties of C programs. A key contribution was the notion of lazy abstraction which integrates three phases of the software model checking loop: abstraction, checking and refinement. Jhala developed an algorithm for model checking safety properties that continuously builds and refines a single abstract model on demand by the model checker. This allows different parts of the model to exhibit just the degrees of freedom required to verify a desired property. The work on lazy abstraction has proved to be very influential in the verification community. Jhala also used Craig interpolation to efficiently construct, from a given abstract error trace that cannot be concretized, a parsimonious abstraction that removes the trace. He developed the method for programs with arithmetic and pointer expressions, and call-by-value function calls. This resulting technique was successfully applied to programs over 130,000 lines which was previously not possible.

Jhala has significantly advanced the practical application of refinement types which allow programmers to attach additional specifications to existing types. These additional specifications allow interesting properties to be proved about code, such as invariants over recursively defined data structures. The problem with such specifications is that they can be too onerous to write down and get right. Jhala’s work on Liquid Types showed that a useful and expressive class of these specifications can be inferred in a largely automatic way, making the approach far more practical at a reasonable cost. Jhala’s work with Liquid Types has significantly extended the state-of-the-art, adding a notion of predictability and decidability often not found in SMT-based software verification, and extending the usability and expressiveness of formal type systems.

Jhala has also worked on data race detection, information flow and timing analysis for Javascript and code analytics. Jhala has also written a lengthy tutorial on Liquid Haskell, proved to be an excellent communicator and mentor who has given many engaging and inspiring presentations, and served extensively on program committees of top conferences.

Programming Languages Achievement Award

2017 Thomas W. Reps, University of Wisconsin

Citation:

Thomas Reps has made exceptional contributions to the field of programming languages, on a diverse range of topics that include incremental computation, program slicing and dataflow analysis, shape analysis, and analysis of binary code.

Tom’s dissertation research on generating language-based environments applies incremental attribute grammar evaluation to problems such as name analysis and type checking, and is broadly applicable to a wide range of languages. This work has been commercialized successfully by Grammatech and it has deeply influenced research on integrated development environments. Tom’s work on program slicing and dataflow analysis builds on an elegant framework for solving context-free reachability problems. This work has been extremely influential in the academic community, and it has had huge impact in industry (e.g., IBM products for security analysis and Microsoft’s tools for verifying device drivers). Tom’s work on shape analysis relies on three-valued logic to solve difficult problems in shape analysis, and has had major impact on the verification community. His more recent work on analyzing x86 binary code has applied techniques from his previous work on dataflow analysis and slicing to the intensely challenging problem of analyzing machine code with significant success, and has been commercialized by GrammaTech.

A common thread in all of Tom’s research is that it provides elegant solutions to deep foundational problems. Many of these solutions have become widely adopted, resulting in an unusual level of practical and industrial impact. His publications exhibit an exemplary degree of scholarship, with precise exposition that facilitates adoption by the community. He has received numerous significant awards throughout his career, starting with the 1983 ACM Dissertation Award, and his citation impact is among the highest in the entire field of programming languages.

John C. Reynolds Doctoral Dissertation Award

2018 Co-winner: Justin Hsu, University of Pennsylvania, for Probabilistic Couplings for Probabilistic Reasoning

Advisors: Benjamin C. Pierce and Aaron Roth

2018 Co-Winner: Practical Formal Techniques and Tools for Developing LLVM's Peephole Optimizations

Advisor: Santosh Nagarakatte

Most influential paper (MIP) designations are awarded to papers presented at the POPL, PLDI, ICFP, and OOPSLA conferences held 10 years prior to the award year. A designated committee judges papers according to their influence over the past decade.

ICFP 2006: Peter Sewell, Francesco Zappa Nardelli, Scott Owens, Gilles Peskine, Thomas Ridge, Susmit Sarkar, and Rok Strniša for Ott: Effective Tool Support for the Working Semanticist

OOPSLA 2006: Andy Georges, Dries Buytaert, Lieven Eeckhout for Statistically rigorous Java performance evaluation

POPL 2008: Kohei Honda, Nobuko Yoshida, Marco Carbone for Multiparty asynchronous session types

PLDI 2008: Uday Bondhugula, Albert Hartono, J. Ramanujam, and P. Sadayappan for A Practical Automatic Polyhedral Parallelizer and Locality Optimizer

**2. Significant papers on new areas that were published in proceedings**

Three SIGPLAN-published papers were selected as Research Highlights;

as of this writing, one of them has been selected to appear in Communications of the ACM as Research Highlights.

Bringing the Web up to Speed with WebAssembly

Predicting Program Properties from “Big Code”

Andreas Haas (Google, Germany), Andreas Rossberg (Google, Germany), Derek L. Schuff (Google, USA), Ben L. Titzer (Google, Germany), Michael Holman (Microsoft, USA), Dan Gohman (Mozilla, USA), Luke Wagner (Mozilla, USA), Alon Zakai (Mozilla, USA), JF Bastien (Apple, USA)

Originally published at PLDI'17

Types from Data: Making Structured Data First-Class Citizens in F#

Tomas Petricek (University of Cambridge, UK), Gustavo Guerra (Microsoft, UK), Don Syme (Microsoft Research, UK)

Originally published at PLDI'16

Black-box Concurrent Data Structures for NUMA Architectures

Irina Calciu (VMware Research, Palo Alto, CA, USA), Siddhartha Sen (Microsoft Research, New York, NY, USA), Mahesh Balakrishnan (Yale University, New Haven, CT, USA), Marcos K. Aguilera (VMware Research, Palo Alto, CA, USA)

Originally published at ASPLOS'17

**3. Significant programs that provided a springboard for further technical efforts**

SIGPLAN has recently proposed and launched a new award: The Distinguished Educator Award. This award is broadly construed, e.g., for researchers with a focus on PL education, or educators of PL having a significant impact. The first award will be given in 2019.

SIGPLAN continues to develop its new, gold open-access journal, Proceedings of the ACM on Programming Languages (PACM PL), which published the papers of the OOPSLA, ICFP, and POPL conferences last year.

**4. Innovative programs which provide service to some part of our technical community**

SIGPLAN continues to organize a calendar of SIGPLAN events on a PL calendar http://sigplan.org/Calendar/ and organizes all of its conference proceedings free of charge at http://sigplan.org/OpenTOC/

SIGPLAN is undergoing a process of archiving past conference websites, for historical purposes.

SIGPLAN is developing a new service based on "PC Miner" (developed by Frank Tip) to help PC Chairs choose qualified program committees. The challenge is have a steady stream of up-to-date data, which we are working on.

**5. Events or programs that broadened participation either geographically, or among under-represented members of our community and;**

The Programming Language Mentoring Workshop (PLMW) is now co-located with all four main SIGPLAN conferences: PLDI, SPLASH/OOPSLA, POPL, and ICFP. It is an opportunity to bring more students (with a special emphasis on women and minorities) into our community; it targets senior undergraduates and junior graduate students. We have put in place a steering committee and a SIGPLAN liaison to this committee and are developing a clear evaluation plan to ensure that PLMW is meeting our goals of encouraging work/research in PL to a new population of students.

Our efforts to produce PACMPL should help researchers in Asia, Eastern Europe, Africa, and South America, whose home institutions tend to overlook the rigorous review of SIGPLAN conference papers. (This is especially true as SIGPLAN Notices, which used to publish our conference proceedings was previously indexed as a journal, but no longer is.)

All four top SIGPLAN conferences support double-blind peer review as a mechanism to improve fairness to under-represented populations.

All four top SIGPLAN conferences now support live-streaming of the conference content, for free.

SIGPLAN also gave nearly $120,000 last year in travel support for attendance by authors (primarily students) at SIGPLAN conferences. This support is better advertised now than 3 years ago (when I started) and so we are seeing many more applications, and greater diversity in applications.

Finally, SIGPLAN directly supports (with philanthropic donations) CRA-W grad cohort, to encourage increased participation of women in computer science. It has also supported Oregon Programming Languages Summer School, which draws a large student population from around the world (see https://www.cs.uoregon.edu/research/summerschool/summer18/), and the Summer of Racket school (https://summer-school.racket-lang.org/2018/).

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

The SIGPLAN Executive Committee (EC) has been working on a number of issues involving the management of conferences and conference publications. These include:

- Environmental costs of conference-based publishing. SIGPLAN formed ad hoc committee on mitigating the effects of climate change, chaired by Benjamin Pierce, with Crista Lopes and Michael Hicks as members. Jens Palsberg joined last year as a member (and is now the SIGPLAN Chair, coincidentally). Following our evaluative report and CO2 estimation service developed last year, and the determination that the cost/benefit of conference colocation was high, the committee has looked closely at CO2 offsets as a mechanism for sustainable conference participation, developing a report, carrying out surveys, and launching a pilot effort.

- Another factor with conference location choice (aside from CO2 cost) is the recent USA travel ban of foreign nationals from certain countries. There is some hesitance within our international community with hosting conferences in the USA. At the same time, a large center of gravity for the SIGPLAN community is in the US. An ongoing challenge will be the balance issues of fairness and cost while also ensuring the best technical results from our meetings.

- Technical review. SIGPLAN has formed an ad hoc committee to recommend best practices for empirical evaluations in PL research. Following months of assessment work, the committee has produced a 1-page checklist for researchers and reviewers. This checklist has been shared with the community and reviewers from SIGPLAN conferences, starting with PLDI'19, are being encouraged to use it.

- Anti-harassment and broadening participation. Women make up less than 10% of SIGPLAN's membership (estimated). At the same time, women within the community are overworked, serving on more PCs, committees, etc. Women are also subject of harrassment at conferences and in processes around it (though, thankfully, occurrences of it are very rare). The SIGPLAN community considered these issues in ad hoc forms over the last year and more (along with our sustaining diversity initiatives) but new efforts are being discussed at the level of the Executive Committee.

- Communication. SIGPLAN conferences are growing and in many cases submissions are also increasing. However, this growth may not track the growth of computing overall. As such, it is important to continue to advertise our impact and efforts. We plan to do this by improved communication efforts starting in 2019.

**SIGSAC FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Ninghui Li, SIGSAC Chair**

**1. Awards that were given out**

2017 SIGSAC Outstanding Innovation Award: Shai Halevi

2017 SIGSAC Outstanding Contributions Award: Gene Tsudik

2017 SIGSAC Doctoral Dissertation Award: Brendan Saltaformaggio

2017 SIGSAC Doctoral Dissertation Award Runners-Up: Adam Bates

**2. Significant papers on new areas that were published in proceedings**

**3. Significant programs that provided a springboard for further technical efforts**

**4. Innovative programs which provide service to some part of your technical community**

**5. Events or programs that broadened participation either geographically, or among under-represented members of your community and;**

SIGSAC help supported the Women in CyberSecurity Conference (<https://www.wicys.net/wicys-2018/>) and the 1st Workshop for Women in Cyber Security (CyberW) <https://sites.google.com/a/vt.edu/cyberw2017/home>

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

There were 4 major conferences in the area of cyber security, with ACM CCS being one of them. In 2017, IEEE Symposium on Security and Privacy went to the VLDB model of having one submission deadline every month. A major question is whether ACM CCS, SIGSAC's flag conference, should do something to adjust, such as having two submission deadlines a year.

**SIGSAM FY’18 Annual Report**

**July 2017 – June 2018**

**Submitted by: Christopher W. Brown, 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 Matthew England (U.K.).  We are currently in the process of transferring 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 current ad hoc arrangement to ACM/SIGSAM control.  Related to the SIGSAM website is its social media presence via Twitter at @acm\_sigsam, managed by Alexander Konovalov (U.K.).

**Communications in Computer Algebra:**

The ACM Communications in Computer Algebra (CCA) is a quarterly publication of the ACM sponsored by SIGSAM.  The CCA has been published since 1965, though previously as the SICSAM 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:**

(1) The 2017 International Workshop on Parallel Symbolic Computation (PASCO 2017), hosted July 23-24 2017 at the University of Kaiserslautern, was held “in-cooperation” with SIGSAM.  It’s proceedings were published in the ACM Digital Library.

(2) 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 2017, which was hosted July 25-28 2017 at the University of Kaiserslautern, was “in cooperation”.  ISSAC 2018, which will be held July 16-19 at the City University of New York, in New York city, will be sponsored by ACM and 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.”

2017 ACM SIGSAM Richard Dimick Jenks Memorial Prize: awarded to Stephen Wolfram for Wolfram|Alpha and Mathematica.  [Note: though awarded in November 2017, Stephen accepted this award personally at the ISSAC 2018 banquet.]

2017 ISSAC Distinguished Paper Award: awarded to Dmitry Lyakhov, Vladimir Gerdt and Dominik Michels for Algorithmic Verification of Linearizability for Ordinary Differential Equations.

2017 ISSAC Distinguished Student Author Award: awarded to

- Xuan Vu for Computing Canonical Bases of Modules of Univariate Relations, with Vincent Neiger, and

- Thomas Picatte for Reconstruction Algorithms for Sums of Affine Powers, with Ignacio Garcia Marco and Pascal Koiran.

**Some Impacts of SIGSAM Activities:**

In addition to the above mentioned award papers, two papers published in 2017 under the auspices of SIGSAM that have garnered significant interest are:

- “High Performance Computing Experiments in Enumerative and Algebraic Combinatorics”, Florent Hivert, (published in the proceedings of PASCO 2017), and

- “A Case Study on the Parametric Occurrence of Multiple Steady States”, Russell Bradford et al, (published in the proceedings of ISSAC 2017).

Both of these papers show the applicability of computer algebra to interesting new domains (search in high performance computing, and analysis of biological systems, respectively). SIGSAM is currently working to help lead the community’s research energies in some new directions.  We are trying to arrange the next ECCAD to be hosted by a group at Carnegie Mellon that works in formal methods and hybrid systems, with an eye to fostering more connections between computer algebra research and work in computational logic.

**Key Issues for SIGSAM and its Membership:**

Moving forward, SIGSAM’s members and the wider computer algebra research community faces some challenges.  One issue that is key for us as a research community is the role of software and data in the scientific process.  Obviously this is not new to SIGSAM or to ACM SIGs, but it is an unsolved problem for us none the less.  Often in our community, software is an artifact of research – as much as a paper.  But even the question of citation of software is open (see “Some Steps to Improve Software Information”, Albert Heinle et al, ACM Communications in Computer Algebra, 2017).    Reproducibility, which is of course so important, is an even bigger problem.  Obtaining and being able to run software that may not have continued to be maintained is challenging or impossible.  Moreover, the input on which tests were run is often not easily be accessible.  This is a problem that SIGSAM may be able to help ameliorate.  Another challenge is the relative scarcity of women in the computer algebra research community – especially in North America.  Here to SIGSAM may be able to play a positive role.

**SIGSIM Annual Report**

**July 2017 – June 2018**

**Submitted by: Margaret Loper, SIGSIM Chair**

***The Mission of SIGSIM is to become the world-wide leader in providing professional services on modeling and simulation. SIGSIM actively seeks to meet this objective in a variety of ways, including: sponsorship of both the Winter Simulation Conference (WSC) and the SIGSIM Conference on Principles of Advanced Discrete Simulation (SIGSIM PADS).***

**Awards**

* SIGSIM Distinguished Contributions Award was given at the 2017 Winter Simulation Conference to Dr. Paul Fishwick from the University of Texas at Dallas
* WSC PhD Colloquium Award was given to María Julia Blas, from INGAR - Institute of Development and Design Argentina for her paper “An Analysis Model to Evaluate Web Applications Quality Using a Discrete-Event Simulation Approach”
* SIGSIM-PADS PhD Colloquium Award was given to Stefano Conoci for the paper “Power and energy efficient Time Warp”
* 10 Travel Awards (up to $1k in expenses) to PhD students to attend WSC 2017 in Las Vegas, NV (Dec 2017)
* 5 Travel Awards (up to $1k in expenses) to PhD students to attend the ACM SIGSIM-PADS Conference in Rome, Italy (May 2018)

**Significant Papers**

* 2018 SIGSIM-PADS Best Paper Award “Fast-Forwarding Agent States to Accelerate Microscopic Traffic Simulations” by Philipp Andelfinger, Yadong Xu, Wentong Cai, David Eckhoff and Alois Knoll

**Significant Programs**

* SIGSIM-PADS joined the ACM Reproducibility Initiative this year by successfully creating a reproducibility committee to evaluate papers. Lessons learned will be shared with other SIGSIM sponsored conferences.
* Continual expansion of MSKR: [www.sigsim.org](http://www.sigsim.org) (Balci, Editor in Chief)

**Innovative Programs**

* We created an informal committee to help identify SIGSIM members who are qualified to apply for ACM Fellow status. The committee is composed of ACM Fellows, and their purpose is to mentor candidates on the process and requirements. In 2017, we had a SIGSIM member named ACM Fellow – Richard Fujimoto.
* SIGSIM Digest started 08/14: www.modelingforeveryone.com (Fishwick, Chair). Current Subscribers: 63 individuals + SIGSIM email list, # of posts: 308, # of views: 31,525 cumulative (3 years)
* Twitter feed started 02/15, Current Followers: 203, up from 155 last year
* M&S education material is linked from the MSKR, including access to courseware, videos, and M&S area resources (e.g., books, journals, conferences)
* We have a new Digital Media committee that is responsible for Email, Twitter, LinkedIn, and SIGSIM Digest. They will make suggestions on outreach and help grow our visibility.

**Events or programs that broadened participation either geographically, or among under-represented members of your community**

* Held 2018 SIGSIM PADS conference in Rome, Italy
* Will hold 2018 MSWiM conference in Montreal, Canada

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

1. Increasing the registration for the annual SIGSIM-PADS conference

Attendance at the conference has been inconsistent (’13 – 66, ’14 - 43, ’15 – 54, ’16 – 65, ’17 - 45). There are several solutions to consider: (1) allow “invited papers” from known contributors, or groups that we’d like to involve in SIGSIM who are in other, technically-related, societies (2) more international venues may attract a broader set of attendees (3) advertise the conference outside of the traditional SIGSIM-PADS attendees to gain visibility with new M&S researchers, and (4) collaborate more with other SIGSIM-sponsored conferences, WSC and MSWiM, to identify opportunities for cross-over activities and advertising. The goal is to be extremely proactive for the 2019-2020 conferences to ensure steady growth in conference attendance.

1. Growing the membership of SIGSIM

Our retention rate is 78%, but we consistently lose members each year. It appears that the first-year retention is the hardest for us – we keep at most 50% of new members. Our two-year retention is better at 80+%. We have made a push into social networking, but it doesn’t appear to be attracting new members or an effective retention mechanism. The new Digital Media committee that includes Email, Twitter, LinkedIn, and SIGSIM Digest – we will need them to help make suggestions and help grow our visibility. As a community, I think we continue to look inward when advertising conferences like SIGSIM-PADS. We may be able to attract new members by reaching out to other SIGs and new M&S communities that are emerging. We have also been traditionally focused on discrete event simulation – we might consider broadening our engagement with other types of M&S researchers. The new Digital Media committee may be able to help us grow our visibility.

c) Coordination & Collaboration Across SIGSIM Conferences

Our three major conferences are Winter Simulation Conference (WSC) – 25% sponsor, SIGSIM Conference on Principles of Advanced Discrete Simulation (SIGSIM-PADS) – 100% sponsor, and the Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM) Conference – 100% sponsor. There is some sharing across these conferences, but it is mostly done by individuals that attend two or more of the conferences. We need to bring the steering committees together across these conferences to share knowledge about issues such as PhD colloquiums, travel grants, paper awards, reproducibility initiative, etc. Doing this should bring more collaboration across the communities, help us optimize conference planning, and share lessons that benefit all three conferences. We also need to integrate conference operation and reporting into the executive committee discussions.

**SIGSOFT FY’17 Annual Report  
July 2017 – June 2018  
Submitted by: Nenad Medvidovic, Chair**

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

ACM’s SIGSOFT had another excellent year, both technically and financially in 2017-2018. This report provides a summary of key SIGSOFT activities over the past year.

**AWARDS GIVEN OUT**

SIGSOFT’s awards program recognizes the many achievements of the software engineering community (see <http://www.sigsoft.org/> for the most recent awardees). A number of the awards, including our prestigious service, research, and education awards, were presented again this year at the International Conference on Software Engineering (ICSE 2018) in Gothenburg, Sweden.

* The **ACM SIGSOFT Outstanding Research** **Award** was presented to Andreas Zeller from Saarland University, Germany, “outstanding seminal contributions in automated debugging and mining software repositories.”
* The **ACM SIGSOFT Influential Educator Award** was presented to Shriram Krishnamurthy from Brown University, USA, “for his contributions to the advancement of the research and practice of software engineering.”
* The **ACM SIGSOFT Distinguished Service Award** was presented to David Rosenblum from the National University of Singapore, “for outstanding leadership and service to the software engineering research community and to broadening participation in computing.”
* The **ACM SIGSOFT Early Career Research Award** was presented to Gabriele Bavota from University of Lugano, Switzerland, “for outstanding contributions in the area of software engineering as an early career investigator.”
* The **ACM SIGSOFT Outstanding Doctoral Dissertation Award** was given to Fan Long, for his Ph.D. dissertation titled “Automatic Patch Generation via Learning from Successful Human Patches.” The dissertation was completed at Massachusetts Institute of Technology, USC, under the guidance of Professor Martin Rinard.
* We recognized the new ACM Senior Members, Distinguished Members, and Fellows from the SIGSOFT community. In particular, the new **Distinguished Members** are Myra Cohen, James Cross, Mauro Pezzè, Hridesh Rajan, Willem Visser, and Thomas Zimmermann. The new **ACM Fellows** are Margaret Burnett and Gail Murphy.
* 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 “DECKARD: Scalable and Accurate Tree-Based Detection of Code Clones” by Lingxiao Jiang, Ghassan Misherghi, Zhendong Su, and Stephane Glondu, published in Proceedings of the 29th International Conference on Software Engineering (ICSE 2007).
* The Impact Paper Award is in addition to the **Most Influential Paper Awards**, also known as “test of time awards”, which are given to papers that have appeared at a particular conference. ICSE is the SIGSOFT co-sponsored conference with the longest track record of awarding Most Influential Papers. This year, the award went to the ICSE 2008 paper “Debugging Reinvented: Asking and Answering Why and Why Not Questions About Program Behavior”, by Andy J. Ko and Brad A. Myers.
* Many of SIGSOFT’s sponsored meetings this year also presented **Distinguished Paper Awards**. SIGSOFT allows up to 10% of the accepted papers to be selected for this award. The list of awarded papers is maintained on SIGSOFT website’s Awards page. As an example, the papers that received the award at ICSE 2018 in Gothenburg, Sweden are:
  + “Spatio-Temporal Context Reduction: A Pointer-Analysis- Based Static Approach for Detecting Use-After- Free Vulnerabilities”, by Hua Yan, Yulei Sui, Shiping Chen, and Jingling Xue
  + “Identifying Design Problems in the Source Code: A Grounded Theory”, by Leonardo De Silva Sousa, Anderson Oliviera, Willian Oizumi, Simone Barbosa, Alessandro Garcia, Jaejoon Lee, Marcos Kalinowski, Rafael de Mello, Roberto Oliveira, Neto Baldoino and Rodrigo Paes
  + “Static Automated Program Repair for Heap Properties”, by Rijnard van Tonder and Claire Le Goues
  + “Automated Localization for Unreproducible Builds”, by Zhilei Ren and He Jiang, Jifeng Xuan, and Zijiang Yang
  + “Large-Scale Analysis of Framework-Specific Exceptions in Android Apps”, by Lingling Fan, Ting Su, Sen Chen, Guozhu Meng, Yang Liu, Lihua Xu, Geguang Pu and Zhendong Su
  + “Generalized Data Structure Synthesis”, by Calvin Loncaric, Michael D. Ernst and Emina Torlak
  + “Traceability in the Wild: Automatically Augmenting Incomplete Trace Links”, by Michael Rath, Jacob Rendall, Jin Guo, Jane Cleland-Huang, and Patrick Mäder
  + “Towards Optimal Concolic Testing”, by Xinyu Wang, Jun Sun, Zhenbang Chen, Peixin Zhang, Jingyi Wang, and Yun Lin

**SIGNIFICANT PAPERS ON NEW AREAS**

Software engineering has traditionally been an interdisciplinary area, branching into a range of different application domains as well as other research areas in computer science, such as human-computer interaction, mobile computing, artificial intelligence, distributed systems, more recently big data and machine learning, and so on. This is because every facet of computing, as well as many other scientific and engineering disciplines, depend on software. Advances in these other areas mentioned above—from big data, to the cloud, virtualization, deep learning, mobile computing, formal methods, computer security, etc., with applications in autonomous vehicles, robotics, medicine, and countless other areas—require corresponding software engineering methods, tools, and techniques. This is reflected in the types of papers that increasingly appear in software engineering venues sponsored by SIGSOFT. Such papers tend to combine advances in multiple areas into solutions to specific problems. As examples, we highlight two such papers, the first a recipient of the SIGSOFT Distinguished Paper Award at the Joint European Sofwtare Engineering Conference and Symposium on the Foundations of Software Engineering, held in September 2017 in Paderborn, Germany (ESEC/FSE 2017), and the second a recipient of the same award at the International Conference on Software Engineering, held in May 2018 in Gothenburg, Sweden (ICSE 2018):

* “Cooperative Kernels: GPU Multitasking for Blocking Algorithms”, by Tyler Sorensen, Hugues Evrard, and Alastair F. Donaldson presented a technique that extends the traditional GPU programming model geared towards writing blocking algorithms, where workgroups of a cooperative kernel are fairly scheduled, and multitasking is supported via a small set of language extensions through which the kernel and scheduler cooperate.
* “Identifying Design Problems in the Source Code: A Grounded Theory”, by Leonardo De Silva Sousa, Anderson Oliviera, Willian Oizumi, Simone Barbosa, Alessandro Garcia, Jaejoon Lee, Marcos Kalinowski, Rafael de Mello, Roberto Oliveira, Neto Baldoino and Rodrigo Paes described a multi-trial industrial experiment with professionals from five software companies to build a grounded theory that offers explanations on how software developers identify design problems in practice. This work revealed specific characteristics of symptoms that developers consider helpful, and that developers often combine different types of symptoms to identify a single design problem.

We have decided to highlight these two papers as a way of demonstrating the breadth of topics that are commonly covered in SIGSOFT-sponsored conferences today.

**INNOVATIVE PROGRAMS**

Over the past several years, SIGSOFT has introduced a number of programs to aid and expand our membership. Some representative examples are as follows. Our student-members receive discounted membership rates and significantly discounted registration fees at all SIGSOFT-sponsored conferences. Most of our conferences offer Doctoral Symposia where students are mentored by experienced Software Engineering professors. The SIGSOFT Webinar series remains very popular; in the past year, SIGSOFT organized 11 webinars with a total of 9,970 registrants and 4,725 attendees, of which 2,367 viewed the webinars live. We recently introduced the Early Career Award that recognizes individuals at early stages in their careers. Even though the Early Career Award is quite young, it has clearly become a popular and respected award. SIGSOFT provides 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), through the Conference Aid Program for Students (CAPS); as of the past year, CAPS has been extended to help defray travel costs of a certain number of post-doctoral researchers.

To broaden SIGSOFT’s reach and membership, SIGSOFT has established national chapters in India (ISoft) and China (CSoft). Each chapter has a liaison on the SIGSOFT EC, in addition to our long-standing International Liaison. As part of the support for these two communities specifically, SIGSOFT sponsors travel for a total of four SIGSOFT Distinguished Paper Award winning authors to present their work at ISoft’s and CSoft’s flagship national events (two at each event). The success of this program is reflected in the decision by the organizers of ISEC 2017, ISoft’s premier event, to fund the attendance and presentation of additional SIGSOFT Distinguished Paper Award winners. Furthermore, SIGSOFT has sponsored travel for two speakers at each of the three annual Warm-up Workshops organized to expose the Latin American software engineering community to ICSE, which was held in Buenos Aires in 2017. SIGSOFT has been in discussions with the organizers of ICSE 2017 to sponsor a post-mortem event for the Latin American software engineering community.

**KEY ISSUES FACING SIGSOFT**

While SIGSOFT is stable and strong, there are several challenges we continue to face:

* SIGSOFT’s membership numbers have been stable despite a large growth of software engineering worldwide. We will aim to address this, with a particular focus on practitioners. To this end, we already have a couple of programs in place, but we will need to better utilize SIGSOFT’s Industry Liaison.
* We will continue to work on establishing a long-term working relationship with our Indian, Chinese, and South American colleagues, as well as expanding the reach of SIGSOFT into Africa. We are currently in discussions with out South Korean colleagues about devising a way of including them more integrally in SIGSOFT’s activities, especially in light of the fact that ICSE 2020 will be held in Seoul. While we have had some successes in each of these geographic areas, there is significant room for further growth.
* The typical conference registration fees place a significant burden on the research funds of many members of our community. SIGSOFT has tried to alleviate this burden through the CAPS program. We will work on developing ways of reducing the fees more directly. SIGSOFT has recently adopted a model to return conference surpluses to future editions of the same conference, in a way that will directly apply to reduced registration fees.
* We recognize that traditional ways of reaching our membership are no longer sufficient. To address that, we will work on increasing SIGSOFT’s presence on social media. In addition to the elected SIGSOFT Executive Committee Member-at-Large who serves in the role of Social Media Chair, we have recently appointed a Deputy Social Media Chair in order to increase and improve our presence in this area.

**SIGSPATIAL FY18 Annual Report**

**July 2017-June 2018**

**Submitted by: Cyrus Shahabi, SIGSPATIAL Chair**

# SIGSPATIAL CONFERENCES AND WORKSHOPS

SIGSPATIAL’s mission is to address 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. Its scope also includes, but is not limited to, geographic information systems (GIS), along with data storage, query processing, indexing and data mining.

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 availability of GPS data in ever-increasing number of mobile devices and smart phones. The use of navigation, routing and online mapping systems offered from companies such as ESRI, HERE, Microsoft (Virtual Earth) 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. It continues its mission of providing a forum for high quality research conference and workshops that are differentiated from other venues by focusing on the computational and system aspects of the field rather than on the available commercial products.

One of the focal tasks of the SIGSPATIAL leadership is keeping its flagship conference, the ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), affordable so that it can continue to be of good value to its attendees and be competitive price-wise with related conferences. As an example, the registration fees for ACM SIGSPATIAL 2017 were: – $450 for ACM members; $550 for non-ACM members; $350 for students. Achieving this has been made possible by active solicitation of sponsor contributions and a great deal of vigilance and active involvement of the Organizing Committee, enabling a minimal financial burden in terms of contractual obligations when planning the conference. This, in addition, also enabled building financial reserves.

ACM SIGSPATIAL GIS 2017 was the 25*th* 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. However, 2017 was the 10*th* year that the conference was held under the auspices of the new ACM Special Interest Group on Spatial Information (SIGSPATIAL) and the flagship conference (ACM SIGSPATIAL) was held in Redondo Beach, California (November 7 - November 10, 2017).

The conference received a total of 180 research submissions and 13 industrial experience and systems submissions. 39 of the submissions were accepted as full 10-page research papers for oral presentation, resulting in an acceptance rate of 19.7%. Additional 43 submissions were accepted as poster presentations (22.2% acceptance rate), and published as 4-page papers. There were 24 demonstration submissions, of which 14 were accepted for live demonstrations, published as 4page papers (acceptance rate of 58%). Finally, once again we encouraged the submission of papers describing visionary ideas. Of the 14 vision papers submitted, 6 were accepted for oral presentation and a publication as 4-page papers. 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.

Continuing the tradition, ACM SIGSPATIAL 2017 had a Cup programming contest, which focused on similarity search in databases of moving object trajectories under Frechet distance. The competition received 28 submissions and the teams totaled 68 members submitting formal entries. Three entries were selected as winners, and were additionally qualified for an invited paper, an oral presentation and award prizes during the banquet.

For the second time, after its debut in 2016, the conference had a Student Research Competition 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, 4 papers (co)authored by graduate students and one paper authored by undergraduate students were selected to enter the final round of the competition.

During the one day workshops and the two and a half days of the main track, the ACM SIGSPATIAL attracted 325 attendees.

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 107 volunteers 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 were allowed to express ranked preferences regarding their willingness 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 metareview, and formulated an accept/reject recommendation.

(2) For the first time in 2017, we implemented a rebuttal phase where the authors received preliminary versions of the reviews and metareview and were offered the opportunity to address the concerns raised therein by submitting a response. The reviews, metareviews, and accept/reject recommendations were then finalized taking into account the responses and 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 conferences Workshop Chairs to be considered for inclusion in relevant workshops co-located with SIGSPATIAL.

ACM SIGSPATIAL 2017 had two distinguished speakers: Markus Gross (Disney Research and ETH Zurich) with a keynote presentation *Disney Research Technology to Create the Magic*, and Bryan Mistele (INRIX) whose keynote addressed *Building Smarter Cars & Cities from Spatial Data*.

The 2017 edition of the conference was again run in a single track with one of the highlights being a fast forward poster session in the first afternoon where each poster author was given two minutes to present the highlights of their work to the audience. This was followed by a poster and Demo reception in the evening where the conference participants had an opportunity to interact with the poster authors. Poster paper authors were encouraged to do a good job by having two awards: one for besta fast forward presentation and one for the actual poster. Demo paper authors were awarded a best demo award for a running prototype that the authors demonstrate. The poster and demo components of the conference proved to be very popular with both the conference audience and the poster and demo authors. This year, for the first time, the conference has started the ACM Student Research Competition (SRC), which took place during the workshop day and the first day of the conference. Awards for SRC were delivered during the conference banquet.

The conference also included a business meeting for SIGSPATIAL which was open to all SIGSPATIAL members as well as to all conference attendees.

The conference was preceded by a workshop day with the following ten workshops:

1. 10th ACM SIGSPATIAL Workshop on Computational Transportation Science (IWCTS 2017)
2. 8th ACM SIGSPATIAL Workshop on GeoStreaming (IWGS 2017)
3. 3rd ACM SIGSPATIAL Workshop on Emergency Management using GIS (EM-GIS 2017)
4. 6th ACM SIGSPATIAL Workshop on Analytics for Big Geospatial Data

(BigSpatial 2017)

1. 3rd ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics (UrbanGIS 2017)
2. 1st ACM SIGSPATIAL Workshop on Geospatial Humanities (GeoHumanities 2017)
3. 1st ACM SIGSPATIAL Workshop on High-Precision Maps and Intelligent Applications for Autonomous Vehicles (AutonomousGIS 2017)
4. 1st ACM SIGSPATIAL Workshop on Artificial Intelligence and Deep Learning for Geographic Knowledge Discovery (GeoAI 2017)
5. 1st ACM SIGSPATIAL Workshop on Recommendations for Location-based Services and Social Networks (LocalRec 2017)
6. 1st ACM SIGSPATIAL Workshop on Analytics for Local Events and News (LENS 2017) 1st ACM SIGSPATIAL Workshop on Prediction of Human Mobility (PredictGIS 2017)

ACM SIGSPATIAL 2017 conference was generously co-sponsored by NSF, Oracle, Facebook, Lyft, Uber, ESRI, Google, Microsoft, IBM, Amazon, NVIDIA, Ordnance Survey, Morgan & Claypool, and Springer, whose participation and generosity demonstrated what can be accomplished by a successful partnership between academia and industry. Some of the sponsors held a recruiting table for potential students during one day of the conference. The NSF support of $30K enabled 37 students to receive financial help for attending the conference.

The SIGSPATIAL leadership has already undertaken all the steps and closely collaborates with the Organizing Committee for the 2018 ACM SIGSPATIAL GIS Conference, to be held in Seattle, WA on November 6-9, 2018 with 12 workshops on November 7. It has already secured sponsorship from Apple, ESRI, Lyft, UBER, Facebook, Oracle and HERE, and Morgan & Claypool. SIGSPATIAL has also applied for support from the National Science Foundation (NSF) in the amount of around $30K and plans to use these funds to offer 30-35 student travel grants.

# SIGSPATIAL PUBLICATION INITIATIVES

The first issue of ACM Transactions on Spatial Algorithms and Systems (ACM TSAS) has appeared in August 2015. Since then, it has appeared quarterly, with the latest issue on August 2017. The Editorial Board of ACM TSAS includes Hanan Samet (University of Maryland College Park, USA) as the Editorin-Chief, four Senior Associate Editors: Ralf Hartmut Gting (University of Hagen, Germany), Dinesh Manocha (University of North Carolina at Chapel Hill, USA), David Mount (University of Maryland College Park, USA), and Peter Widmayer (ETH Zurich, Switzerland), and 30 Associate Editors. The term for the EIC is finishing and there is a committee now, chaired by Prof. Mohamed Mokbel reviewing the nominees.

Continuing the initiative from 2014, we maintained the structure of the SIGSPATIAL Special Newsletter and have appointed a new editor, Andreas Zuefle (George Mason University, USA), with three issues per year (March, July, and November). Each issue has become a special issue concerned with one evolving topic of interest to the research community. The newsletter editor recruits prominent associate editors for each issue. The associate editor, in turn, invites selected articles related to the topic of interest for the respective special issue. With the latest issue of July 2017, the SIGSPATIAL Special Newsletter become a reference to SIGSPATIAL community for new emerging topics.

# AWARDS

The Best Research Paper in ACM SIGSPATIAL 2017 was awarded to:

*- Dictionary Compression in Point Cloud Data Management*, by Mirjana Pavlovic (EPFL), Kai-Niklas Bastian (SAP SE), Hinnerk Gildhoff (SAP SE), Anastasia Ailamaki (EPFL)

Continuing its tradition, ACM SIGSPATIAL 2017 also had a Best Vision Paper award, which was won by:

*- From How to Where: Traffic Optimization in the Era of Automated Vehicles*, by Kotagiri Ramamohanarao (University of Melbourne), Jianzhong Qi (University of Melbourne), Egemen Tanin (University of Melbourne), Sadegh Motallebi (University of Melbourne)

In addition, there were:

- Best Demo Award: *Virtual Cities: 3D Urban Modeling from Low Resolution LiDAR Data*, by Saleh Albeaik, Mohamad Alrished, Salma Aldawood, Sattam Alsubaiee, and Anas Alfaris.

- Best Poster Award: *SearchingOSMPlanetwithContext-AwareSpatialRelations*, by Daniel Bahrdt, Stefan Funke, Rick Gelhausen, and Sabine Storandt.

- Best Fast-Forward Presentation Award: *Answering Spatial Multiple-Set Intersection Queries Using 2-3 Cuckoo Hash-Filters*, by Michael Goodrich.

# ACM DIGITAL LIBRARY

SIGSPATIAL plans to expand its presence in the ACM Digital Library by soliciting workshop proposals both in its role as a sponsor and on an in-cooperation status. This can be seen by the number of workshops that it sponsored in 2017. The SIGSPATIAL Treasurer, John Krumm, continued its service as the Workshops co-Chair for ACM SIGSPATIAL 2018 conference, which has 13 co-located workshops.

# SIGSPATIAL CHAPTERS

SIGSPATIAL has four Chapters: SIGSPATIAL Australia, SIGSPATIAL China, SIGSPATIAL Korea, and SIGSPATIAL Taiwan. These chapters are representative of the amount in interest in SIGSPATIAL from members in these regions and are reflected by their participation in the flagship conference as both authors and attendees, as well as their active involvement in the Program Committee and various other roles in the Organizing Committee.

A notable achievement is that thanks to the activities of the SIGSPATIAL Australia chapter, right now ACM SIGSPATIAL is a ranked conference in Australia.

# Officers, Achievements and New Initiatives

The elected officers for the three year term running from July 1, 2017 through June 30, 2020 are:

Chair: Cyrus Shahabi, University of Southern California, USA

Vice-Chair: Goce Trajcevski, Northwestern University, USA

Secretary: Egemen Tanin, University of Melbourne, Australia

Treasurer: John Krumm, Microsoft Research, USA

According to the SIGSPATIAL bylaws, the past SIGSPATIAL chair, Mohamed Mokbel, is also a member of the EC.

The two additional non-voting members of the EC are: Newsletter Editor – Andrea Zfle, George Mason University, USA; and Webmaster: Chrysovalantis Anastasiou, University of Southern California, USA

SIGSPATIAL continues its dedicated work towards fulfilling its mission of maintaining high quality research conferences and workshops, and is actively seeking more sponsors and creating activities to make it more attractive for the potential sponsors. We are planning to continue the company recruiting event which was very successful in the last three years.

Following is the list of the other achievements in the past year, along with the new initiatives of the SIGSPATIAL:

* The best paper award process was formalized and approved by the ACM.
* A test of time award has been added and approved by ACM.
* A new policy has been adopted regarding preparation of conferences two years in advance. Thus, it is already known that ACM SIGSPATIAL 2019 will be held in Chicago.
* A proposal template for conference organization has been formalized and adopted, and we have already received proposals for organizing ACM SIGSPATIAL 2020 from China and Germany.
* Thanks to the activities of the SIGSPATIAL China chapter, the process has been started for including ACM SIGSPATIAL among the conferences ranked by the China CCF.

The plans for the near-future subsequent activities include:

* Upgrading the website to wordpress.
* Completing the process for having the publications from ACM SIGSPATIAL also indexed by Scopus.
* Following up with the activities necessary for deciding to have the conference for the first time outside the US (tentatively planned for ACM SIGSPATIAL 2020).

**SIGUCCS Annual Report**

**July 2017 - June 2018**

**Submitted by: Laurie Fox, SIGUCCS Chair**

*SIGUCCS' mission is to foster the professional development of practitioners involved in the support, delivery, management, and leadership of information technology services in higher education. This is pursued through providing forums for interaction and sharing knowledge and experiences, professional development opportunities, and recognition for leaders who contribute in the field.*

### Awards

###### Penny Crane Award for Distinguished Service

The Penny Crane Award for Distinguished Service was first awarded in 2000 and recognizes an individual’s significant and/or multiple contributions to SIGUCCS, the IT profession, and higher education over an extended period of time. The 2017 recipient was **Tim Foley**, Chief Information Officer of Library and Technology Services at Lehigh University.

###### SIGUCCS Hall of Fame

The Hall of Fame awards were first awarded in 2000. They recognize nominated individuals who have contributed their time and energies to benefit SIGUCCS. The 2017 recipients were: **Melissa Bauer**, Baldwin Wallace University, **Allan Chen**, Muhlenberg College, **Beth Rugg**, University of North Carolina Charlotte, and **Kelly Wainwright**, Lewis & Clark College.

###### Communication Awards

The Communication Awards are an annual competition where the winners are invited to participate in the annual conference as poster presenters. A full description of categories can be found at <http://www.siguccs.org/communication_awards.shtml>

* Category 1 – Computing Services Public/Mobile Website
  + Best of category: New York University, NYU Information Technology
* Category 2 – Computing Newsletter (Print or Electronic)
  + Best of category: Southeast MO State University, Tech Talk Quarterly
  + Award of Excellence: New York University, Connect: Information Technology at NYU
* Category 3a – Printed How-to Guides
  + Best of category: Texas A&M University, Welcome Home Brochure
* Category 3b – Electronic How-to Guides
  + Best of category: Indiana University, UITS IT Training – Creating Research Posters Online Course
* Category 4a – Instructional Classroom Materials
  + Best of category: Indiana University, UITS IT Training – Page Design and Layout Basics
* Category 4b – Quick Reference Guides
  + Best of category: Mercer University, AV Quick Reference Guide
* Category 5a – General Service Promotional Materials
  + Best of category: Texas A&M University, The State of Security Report 2016
* Category 5b – General Service Campaign Materials
  + Best of category: Virginia Commonwealth University, Two is Better than One
* Category 6a –Short Promotional Video
  + Best of category: Texas A&M University, Aggies Map 100 Miles of Campus Fiber Video
* Category 6b – Long Promotional Video
  + Best of category: Indiana University, UITS IT Training Security First Video Series: Use of Administrative Accounts
* Category 7 –Use of Social Media
  + Best of category: New York University, New York University Information Technology Facebook page and Twitter account
* Category 8 – Student-created Materials
  + Best of category: Texas A&M University, Computer Lab Poster Campaign

### Proceedings

There were 39 papers submitted in the proceedings of the 2017 ACM Annual Conference on SIGUCCS. At the annual conference, presentations were also provided by industry leaders and panels. Significant topics included: Classroom Design, Leadership and Management Development, Lab Management, Change Management, Augmented and Virtual Reality, Communicating Effectively in Tech Support, IT Service Catalogues, Building a Service Oriented Architecture, and Security. The full citation in the ACM Digital Library can be found at: <https://dl.acm.org/citation.cfm?id=3123458>

### Programs

###### Mentoring Program

The Mentoring Program kicked off its 6th annual cohort in December 2017. SIGUCCS is committed to developing IT Service and Support professionals. We started the mentoring program in 2012 to pair service professionals together for 1 year to learn and grow. An advisory team administers the program and provides support for mentor pairs. We pair professionals with individuals who work at similar institutions in similar jobs or who have similar development interests. The expectation is that mentors and mentees communicate once a month about professional development topics. This program runs from January through October.

There are 36 participants this year. At the end of the program, mentors and mentees celebrate at a networking event during the annual conference.

###### Pre-Conference Seminars

The registration cost for pre-conference seminars was dramatically reduced, offering a significant price reduction for members. Registration numbers for these sessions increased over previous years’ numbers. These workshops provide an opportunity to explore topics in-depth and learn and share with colleagues around the world.

We offered 3 pre-conference workshops for the 2017 conference. There were a total of 52 registrations. Approximately 25% of the conference attendees participated in the pre-conference workshop experience.

1. *Understanding Your Customer Service Experience and Journey Mapping and Data Collection* facilitated by Cara Giacomini & Jeff Blancato from the University of Washington: 16 participants
2. *IT Governance: A Hands-On Approach to Defining Policies and Process* facilitated by Tom Gerace from Tulane University: 9 participants
3. *Be a Leader Who Inspires Others: Transforming Yourself into the Leader You are Meant to Be* facilitated by Joan Cheverie, Educause Professional Development Coordinator: 27 participants.

###### Webinars

SIGUCCS offered nine webinars on a variety of topics. These webinars are available to the public – membership in SIGUCCS is no longer required. We have seen our registration and attendance increase since the membership requirement was lifted. The webinars are often an extension of content offered in the conference. Past webinars are available on our web page, and we have content dating back to 2010.

The SIGUCCS Marketing Committee also created a brief presentation for the start of each webinar that introduces SIGUCCS and shares announcements about the annual conference, awards programs, and other SIG activities. Each webinar is recorded and made available on our YouTube Channel. (<https://www.youtube.com/user/SIGUCCSVideos>)

* Adventures in Management: Incentives with Flair
* Communications Toolkit Workshop: Hands-on Guide to Creating Meaningful Messages that Support Your IT Change
* How Using Virtualized Apps Streamlined VDI at Le Moyne College
* Increasing Security by Focusing on the End-Points
* Giving More Effective Feedback
* Fostering independence: Project Work for Student Techs
* Connecting Students to Life Beyond the Campus Walls
* You know you want to read this: Communicating Effectively in Tech Support
* Identifying IT Core Competencies
* Enhancing the Performance of Cross-Functional Teams

### Broadening Participation

###### Conference Attendance Grants

The purpose of the SIGUCCS Conference Attendance Grant program is to provide partial support for individuals in institutions of higher education to participate in the annual SIGUCCS Conference. This support is funded by SIGUCCS and consists of a full registration to the Annual Conference; hotel room accommodations; and registration for one half-day pre-conference seminar. The Fall 2017 recipients were: **Deyu Hu**, Virginia Tech, **Maria Contreras Michel**, University of Texas at El Paso, and **Ralph M. Miller**, University of Pittsburgh-Johnstown.

###### Communication Efforts and Online Communities

One of the major recommendations from our marketing consultant was to increase our frequency of communication to the SIGUCCS community. We also decided to focus on two primary communications channels: the SIGUCCS-L email list and a Facebook SIGUCCS Community group. While our focus is not on these other communications channels, we are doing some minor communications on Twitter through automatic announcements of our newsletter articles. We are also posting conference content announcements and monthly recaps on LinkedIn. We hope to add more content to these channels in the coming year.

The Marketing Committee coordinates our communication schedule to ensure that we send a message to the community, through at least one of these channels, every weekday. The messages come from a variety of Committees: the Executive Committee, our annual conference, marketing, awards selection, and professional development.

###### SIGUCCS Webinars YouTube Channel

We have continued to upload our monthly webinars to YouTube, and organize them into a playlist. We also let the community know when the video is available.

### Key Issues in the next 2-3 years

###### Tracking volunteers

SIGUCCS continues to seek a solution to tracking our members’ contributions to the community. This becomes most necessary when we nominate individuals for awards and have to search through multiple locations for their contributions. It is also needed to identify future conference and executive committee volunteers.

###### Outreach beyond existing member list

Outreach and increasing our community continues to be a priority for SIGUCCS. We are continuing to focus on frequent communication about our activities and offering compelling webinars. We hope to expand our online communities by sharing unique content in order to assist in finding volunteers and attendees that live near future conference locations.

###### Cost of conference keynote speakers

Recent conference committees have experienced difficulty in finding keynote speakers with fees within our conference budgets. The Executive Committee frequently discusses options to ease this concern, including utilizing the ACM Distinguished Speaker Program, sponsoring speakers outside of the conference budget, reducing the number of keynote speakers, and finding higher education technology leaders located near the conference site.

SIGWEB FY’18 Annual Report

July 2017 – June 2018

**Submitted by: Dick C.A. Bulterman, SIGWEB Chair**

# Introduction

SIGWEB is a medium-sized special interest group within ACM. We are financially sound, have a relatively stable membership, have strong academic and (to a lesser extent) professional ties and support a broad set of conferences, symposia and workshops.

In this report over 2017, I’ll update our membership on our activities and some of our key performance indicators. In doing so, all of us involved with the SIG realize that it is the SIG membership that is the key component to ensuring our current and future success. Enabling and activating volunteers is the core business of SIGWEB’s board. I and we hope to hear your ideas for the future and to find ways of working together to strengthen our activities.

# 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

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 remain well-attended, although directed attention will be required to make sure that each of the meetings remains scientifically relevant (and thus viable in the long term).

SIGWEB support seven main academic conferences each year. Four of these events are supported in partnership with other ACM SIG (of which one is also co-supported with IEEE). The three other events are supported for 100% by SIGWEB.

Financially, only one of our conferences suffered a small loss. This loss has been more than compensated by other conferences supported by SIGWEB.

Our membership remains relatively constant, although the mix between new and existing members seems to increasingly favor new members. This is a point of action for the SIG.

The past year has been one of management stability, as the SIG’s officers have settled into their roles of Chair, Vice-Chair and Secretary/Treasurer. The Officers have met face-to-face with the executive committee to establish goals for the coming year and the coming three years.

# Volutenteer Involvement

SIGWEB realizes that involving volunteers in SIG activities is a non-trivial task. Many of our members have been with the community for many years and have become accustomed to operating within a ‘well-oiled’ environment. At the SIG business meetings held at each of our fully-supported conferences, it is clear that motivating our membership to take leadership roles is both an opportunity and a challenge.

The primary road that we offer for volunteer involvement is through the organization of our conferences and symposia. For Hypertext and DocEng (two of our three 100% supported conferences), strong mechanisms are in place to help ensure long-term viability. For WebScience, which is supported for 100% by SIGWEB but managed together with the Web Science Trust, concerted attention will be required to help with long-term planning and organization. Our co-sponsored conferences (CIKM, JCDL, WISDM) are mature conference support structures are in place, in cooperation with SIGIR, SIGCHI and IEEE.

In terms of participation at events, we provide substantial discounts for students and retired members, we actively support child care at conference and provide funding for student (and, starting in 2018, retiree) travel awards.

In order to increase volunteer involvement, we have started a program in which local groups can get seed funding for new initiatives to explore new scientific areas of interest. The expectation is that some of these new areas can mature and either join existing conferences (as new tracks or workshops), or evolve into new symposia.

In the internal organization of the SIG, we have recruited new members for the executive committee, have assigned new persons to be liaisons at our conferences and have attracted new members to operational functions within the SIG.

The elected volunteer leaders of the SIG are:

* Chair: Dick Bulterman (CWI & Vrije Universiteit Amsterdam)
* Vice-Chair: David Millard (University of Southampton)
* Secretary/Treasurer: Yeliz Yesilada (METU North Cyprus)

The appointed SIGWEB Executive Committee has the following members:

* Simon Harper (Past Chair & ACM SGB)
* Ethan Munson
* Jessica Rubart
* Cathy Marshall
* Charles Nicholas
* Brian D. Davison
* Peter Brusilovsky
* Claus Atzenbeck

Additional volunteers working with the SIG are:

* Hamman W. Samuel (Webmaster)
* Caroline Jay (Broadening Participation / Full Inclusion)
* Andrew Brown (Senior and Junior SIGWEB Awards)

All of these people fill important roles for the SIG, and all welcome your input and observations on SIGWEB activity.

# Conferences and Other SIG Events

SIGWEB provides financial support and assistance in organizing the following events:

* ACM Conference on Hypertext and Social Media (100%)
* ACM Symposium on Document Engineering (100%)
* ACM Web Science Conference (100%)
* ACM Conference on User Modeling, Adaptation and Personalization (50% w/SIGCHI)
* ACM Conference on Web Search and Data Mining (25% w/SIGIR, SIGMOD, SIGSOFT)
* ACM Conference on Information and Knowledge Management (50% w/SIGIR)
* Joint Conference on Digital Libraries (33%, w/SIGIR+IEEE)

In each of these conferences, we provide financial guarantees that allow the events to be planned and executed. Our expectation is that each event should be self-supporting in terms of it operation, but that several common characteristics of SIGWEB events be supported. An important aspect is providing a uniform policy for reduced fees and access for student members. (More on this later.)

In 2016, we also started a program of grass-roots events, in which SIGWEB provides support for local meetings that have a potential for growing into major SIG activities. The goal of these events is to enable individual SIGWEB members to expand the reach and influence of the SIG and to stimulate a path for further SIG growth. If you are interested in hosting such an event, please contact Yeliz Yesilada for details. Note that while we are flexible in the types of events that we will support, SIGWEB is *not* in a position to support individual research activities directly. We are interested in helping with dissemination activities that highlight results from research and practice activities across our membership. Over 2017, it is clear that some extra attention could be given to this distributed-activities program. Our members may be reaching saturation with respect to the events that they can attend and still have time to research new problems.

In late 2017 conversations began with the organizers of the popular The Web Conference series (a slightly re-branded version of the important WWW conferences) about the potential integration of this series with other SIGWEB events. There are a myriad of details to be worked out, but we feel that the integration of The Web Conference into SIGWEB is a natural step and of potential benefit (in terms of co-location and potential co-marketing) with our other events.

# Numbers and Trends

SIGWEB is a broadly based SIG, with members than come from a range of related academic and professional disciplines. As the following chart shows, our overall membership number have been stable, although the mix in members changes from year to year:

Our membership numbers have declined primarily because of experimentation with affiliate members. We have tried to measure retention rates for persons given automatic membership based on conference participation for some of our events. This approach inflates temporary numbers but has yet to be a source of adding sufficient new blood into the SIG. We recognize that many participants are not looking for multi-year binding to SIGs (and that the added incentives to join are minimal). Still, we feel that a healthy membership base in important for our viability.

The following graph shows the ‘performance’ of SIGWEB conferences:

Of these, on WebScience has had disappointing results in 2016 and 2017. A small consolation was that the results didn’t deteriorate much in 2017. We expect that the results for 2018 will show a dramatic turn-around, with new energy that we hope will extend into future editions as well. All other conference are more than healthy, both in terms of financials as in number of attendees and quality of presentations.

SIGWEB has a healthy fund balance going into 2018. The trend for the past years is shown in the following graph:

*Fund balance, in thousands of US$.*

Every ACM SIG is required to have a minimum balance, the amount of which depends on a number of factors. For SIGWEB, our minimum balance is approximately US$200,000. Through the years, we have been able to develop a buffer of $900,000 to assist in supporting new and existing conferences.

SIGWEB’s main expenses are providing best paper honoraria, travel awards for students, ACM participation fees and non-compensated conference expenses.

SIGWEB gets its income from member dues, conference surplus income and from an allocation of income from the ACM digital library. In short, the more references and (paid) downloads generated via the ACM DL, the higher our fund balance. Such ‘clicks’ are the result of presenting compelling papers at our conferences. Keeping this quality high is our main guarantee for future viability. Recent DL income is summarized in the following graph:

We note that both financial and research interest in SIGWEB conferences is at an all-time high.

# SIGWEB Awards

One of the benefits of SIGWEB activity is our ability to recognize excellent research by established scientists and newcomers to our conferences.

In 2017, we granted the following awards in conjunction with our affiliated conferences:

* The Douglas C. Engelbart Best Paper Award (HT) [2017]  
  **Clarity is a Worthwhile Property: On the Role of Task Clarity in Microtask Crowdsourcing,** Ujwal Gadiraju, Jie Yang and Alessandro Bozzon
* The Theodor Holm Nelson Newcomer Award (HT) [2017]  
  **Entity-Centric Data Fusion on the Web**A. Thalhammer, S. Thoma, A. Harth and R. Studer
* The Vannevar Bush Award (JCDL) [2017]  
  **Quill: A Framework for Constructing Negotiated   
  Texts – with a Case Study on the US Constitutional  
  Convention of 1787,**N. Cole, A. Abdul-Rahman and G. Mallon
* The DocEng Best Paper Award (DocEng) [2017]  
  **Towards a Transcription System of Sign Language Video Resources via Motion Trajectory Factorisation**Mark Borg and Kenneth Camilleri

We congratulate all of these authors for their significant contribution to SIGWEB research!

# Concerns and Opportunities

I have attended all of our 100%-sponsored conferences to speak with members of our community directly. The goal of these sessions is 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.

There is a tremendous opportunity to reach out to new members. As with other SIGs, the advantages of SIG membership are not well understood by many conference participants: the Web and social media are assisting them in establishing a feeling of community better than the SIG can; the financial advantages of SIG membership are not directly felt by participants (for whom conference registration is covered by grants and is only a small portion to the full travel expense of coming to a scientific meeting); the advantages of ACM DL access typically are not considered as special (since their host institutions nearly always already offer library-based institutional subscriptions).

The challenge before SIGWEB (and ACM) is to design a total benefits package that makes a compelling personal offer for new membership. This package should include sufficient financial and scientific incentives (such as having advance registration discounts only available to existing SIG members, plus unlocking special features of the DL that are available to members on top of any benefits from existing [institutional] subscriptions), and it should provide incentives for continued long-term membership (such as access to funds to support local events or perhaps scaled discounts to SIG conferences).

We also have an obligation as a major conference organizer to reduce the environmental impact of our events. As an organizer of international events, many of our member myst fly to events that are often tens of thousands of miles away. While holding closer satellite events may be a solution to this travel, we do not see reducing travel emissions as a short-term approach to reducing our overall impact. Instead, we encourage our organizers to pick venues that are reachable for many participants by train or bus. We also encourage the use of locations that are hubs that can be reached by single non-stop flights. We discourage the inclusion of often under-appreciated (and under-used) gimmicks in conference bags. We also discourage unnecessary printing of conference material. All of these are small steps. We recognize the results of many environmental surveys that state that food selection is probably the most direct way to provide a positive impact at conferences and we recommend to our organizers that events focus on vegetarian meals. We recognize that carnivores can often supplement conference food easily, thus allowing participants to skip conference menu meat for three or four days (and concentrate on program meat instead!), is a realistic approach to realizing short-term environmental progress.

We realize that these concerns are not unique to SIGWEB and look forward to actively coordinating our efforts with other SIGs.

# Closing Comments

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 future viability.

We are honored that ACM’s top honor was extended to one of our own members in 2017, when Sir Tim Burners Lee was given the 51st Turing Award. Sir Tim gave his acceptance lecture at SIGWEB’s WebScience conference in 2018 (in my home city of Amsterdam, at my own Vrije Universiteit). We also recognize the service of long-time member Dame Wendy Hall, who was at the head of ACM Europe until this year. These two members are exceptional, but they are positioned among many dedicated SIGWEB people. At the same time, we recognize the challenges of running a volunteer organization in an age of soloists. We are actively looking for ways to expand the value proposition of SIGWEB. If you have suggestions, we welcome you comments. We see the future with confidence.