Association for
Computing Machinery

ANNUAL REPORT
FISCAL YEAR
2018

A Supplement to *Communications of the ACM*

ACM, the Association for Computing Machinery, is an international scientific and educational organization dedicated to advancing the arts, sciences, and applications of information technology.

Letter from the President

This annual exercise of looking back at a year in the life of ACM never fails to amaze me in terms of how much is accomplished in a matter of months. And still, always, we manage to inch the benchmark ever higher for the following year.

FY18 was no exception. Among the many undertakings ACM finalized this year was the introduction of new curricula to prepare next generations of computing professionals for employment in the global workplace of the future. CSEC 2017 is the first set of global curriculum guidelines for cybersecurity. ACM steered this exhaustive effort, drawing on advice from more than 320 academics and practitioners from 35 countries.

In addition, we approved a revitalized Code of Ethics that fortifies ACM's role as a leading light in what it means to be a computing professional. ACM's Code of Ethics and Professional Conduct put the Association on the map 25 years ago as the first-ever document to address the responsibilities of computing professionals. Indeed, the code quickly became the de facto standard of professional conduct. As we all know, changes in computing over this quarter-century have been nothing short of profound, and over the past two years ACM's Committee on Professional Ethics has worked tirelessly to transform the code to reflect these changes. They called on professionals from around the world help rework drafts, inform decisions, and refine its final form (https://www.acm.org/code-of-ethics).

As you will read in this report, our regional councils are thriving with new initiatives that reflect computing priorities throughout their regions. ACM India, for example, is leading the charge for computational thinking in grades 1–8 with an all-encompassing enterprise called CSPathshala. ACM

Europe has been a true force in informatics policy and education at the university level. ACM China's leadership played a major role in the development of the first-ever regional special section published in a recent edition of *Communications of the ACM*.

ACM has also cemented several key partnerships that will foster new collaborations and allow us to share our rich and extensive resources on an even grander scale. ACM is now a member of Partnership on AI to benefit people and society, an industry and non-profit collaboration to formulate best practices and greater public understanding of AI. ACM continues its support and sponsorship of the esteemed annual Heidelberg Laureate Forum and the UN AI for Good Global Summit as well as other international outreach programs.

The following pages offer but a brief snapshot of some of the key events and initiatives that ACM celebrated this year. All of these accomplishments—as well as our ambitious future plans for computing practitioners, educators, and researchers—are realized by the tireless dedication and generous support of ACM volunteers, members, and industry partnerships.

It has been an honor to serve as president the last two years and to play an active role in positioning ACM to meet the challenges—and countless opportunities—of the future. I closed my term by taking a most unique exit—I moved from the presidency to the position of ACM Executive Director and Chief Executive Officer. As the first woman in ACM's history to serve in this capacity, I pledge to continue its fine work and support our devoted volunteer leadership to keep the Association moving ever forward by expanding its reach and extolling its resources to a global, diverse, and remarkable membership.

Vicki L. Hanson
ACM President
July 1, 2016–June 30, 2018

Publications Portfolio

17.3 MILLION
Number of full-text downloads in FY18

2,855 FROM 90 COUNTRIES
Number of institutional DL subscribers

482,000
Number of full-text articles in the ACM DL

4+ MILLION FROM OVER 240 COUNTRIES
Number of DL users

Publications remain one of ACM's principal activities and pivotal lines of business. The ACM Publications Board is charged with overseeing a rich portfolio, including research journals, magazines, books, and conference/workshop proceedings (in tandem with ACM SIGs and through the International Conference Proceedings Series, ICPS). The Board also oversees publication policies, ethics and plagiarism cases, author rights, as well as guides the ongoing development of the mother ship of ACM's publications offerings—the ACM Digital Library.

In FY18, over 30,000 full-text articles were added to the Digital Library, bringing the total DL holdings to 482,000 articles. ACM's *Guide to Computing Literature* is also integrated within the DL. More than 100,000 works were added to the bibliographic database in FY18, bringing the total *Guide* coverage to more than 2.80 million works.

During the year, ACM added 697 volumes of conference and related workshop proceedings to its portfolio, including 247 volumes added to ACM's ICPS, a 16% increase over FY17.

ACM's Publications Portfolio

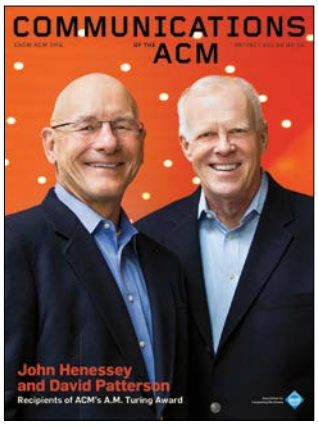
54
Journals and Transactions

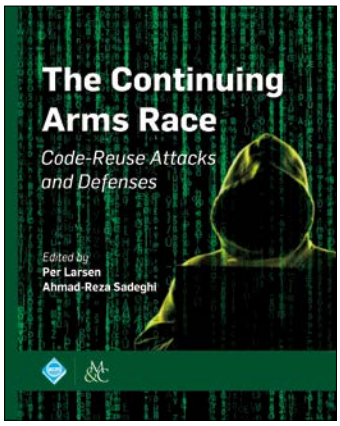
8
Magazines

28
Newsletters

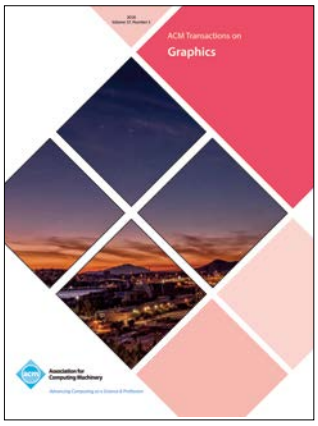
FY18 was a fruitful year in terms of publication achievements:

- The migration of the ACM's Digital Library from an in-house platform to new comprehensive publishing platform was initiated this year. This migration, once completed, will offer a wide range of features, including data and code-first objects, user interface enhancements, and preprint server in collaboration with ArXiv.
- ACM's Publications Board approved four new publications: *ACM Transactions on Data Science*, *ACM Transactions on Computing for Healthcare*, *Digital Government: Research and Practice*, and *Proceedings of the ACM on Computer Graphics and Interactive Techniques*.
- ACM Books, launched in 2014, continues to thrive. In less than four years, the series has published over 20 books and has an additional 20 books under contract.

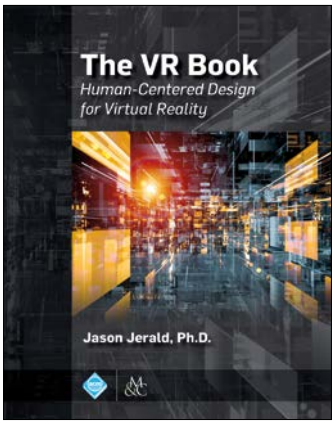

COMMUNICATIONS
OF THE
ACM
John Henessey
and David Patterson
Recipients of ACM's A.M. Turing Award


The Continuing
Arms Race
Code-Reuse Attacks
and Defenses
Edited by
Per Larsen
Ahmad-Reza Sadeghi

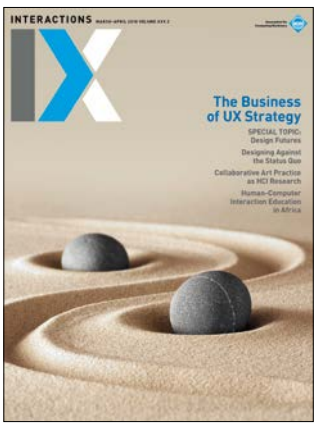

INTERACTIONS
Diversity Computing

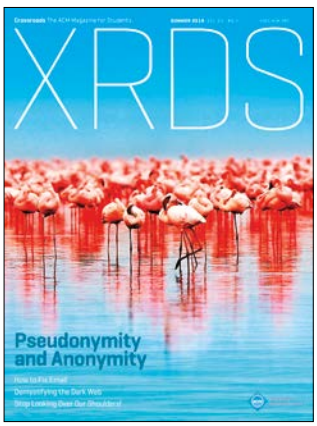

ACM Transactions on
Graphics

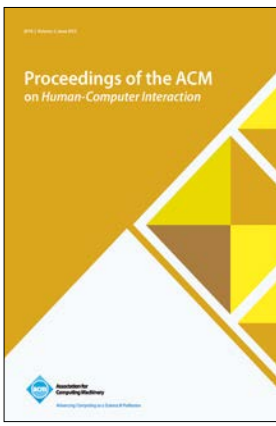

COMMUNICATIONS
OF THE
ACM
Human-Level Intelligence or Animal-Like Abilities?
High Performance Computing

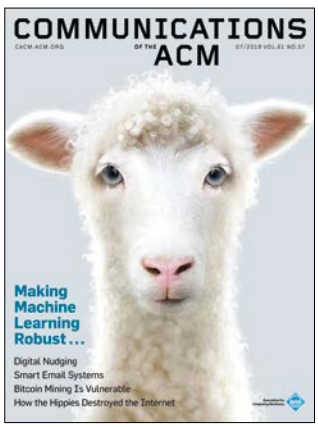

The VR Book
Human-Centered Design
for Virtual Reality
Jason Jerald, Ph.D.

DL

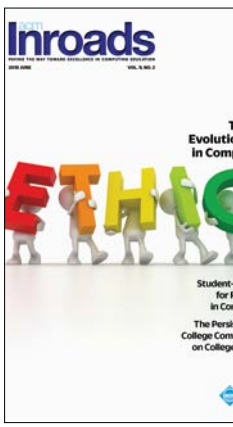

INTERACTIONS
The Business
of UX Strategy


XRDS
Pseudonymity
and Anonymity


Proceedings of the ACM
on Human-Computer Interaction


COMMUNICATIONS
OF THE
ACM
Making
Machine
Learning
Robust...
Digital Nudging
Smart Email Systems
Bitcoin Mining Is Vulnerable
How the Hippies Destroyed the Internet


INTERACTIONS
COVER STORY
Diversity computing
Inroads


Inroads

Education

ACM leads the computer science education community through the work of its ACM Education Board, the ACM Education Council, ACM SIGCSE, Computer Science Teachers Association (CSTA), and ACM Education Policy Committee.

A first-ever set of global curricular recommendations for post-secondary degree programs in cybersecurity education was released. The new set of guidelines, Cybersecurity Education Curriculum (CSEC2017), was the result of an extensive two-year project taken on by a joint task force led by ACM, IEEE Computer Society, and others.

A task force formed by ACM and the IEEE-CS issued a report outlining competencies IT majors earning baccalaureate degrees should possess. Information Technology Curricula 2017, also known as the IT2017 report, was developed in close consultation with industry-based practitioners to ensure graduates are workforce-ready.

The ACM Task Force on Data Science made steady progress toward producing a report with curriculum guidance for CS or similar departments offering data science programs at the undergraduate level. The goal is to define the computing contributions to this new field; the first draft is expected shortly.

The Education Board held its first-ever meeting in London, hosted by the British Computer Society with invited guests from the ACM Europe Council and Informatics Europe. The meeting was intended to learn more about European activities in computing education and to foster cooperation with European partners.

ACM's Education Council at work.

Members of ACM's Education Board visited Bletchley Park in Buckinghamshire, England—the central hub for British codebreakers during World War II, including Alan Turing.

CSTA Executive Director Jake Baskin speaks to members of the ACM Education Council in Portland, OR, USA.

Image by Didier Ishimwe

A young participant gets help during the Hour of Code event organized by the William Penn University ACM Student Chapter.

Professional Development

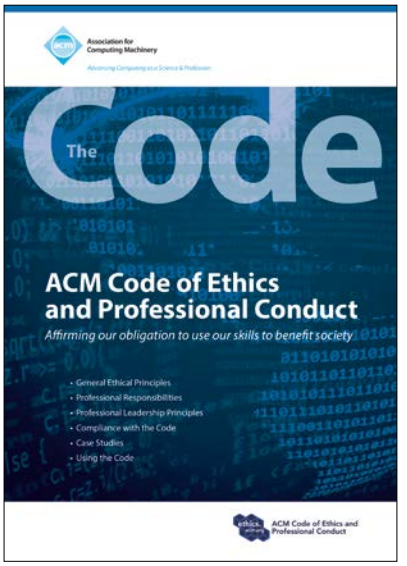
The Practitioners Board and Professional Development Committee (PDC) directed many new products and initiatives designed for computing professionals and managers. In FY18, the Board created and expanded a rich set of activities.

Professional Members	67,500+
Student Members	24,000+

The Conference Committee of the Practitioners Board held the first-of-its-kind conference in Toronto, bringing together practitioners, cryptographers, and blockchain experts. AiDecentralized explored how AI and blockchain technologies might be integrated to open new avenues of research and innovation. The response tripled expectations.

FY18	CHAPTER STATS
275	total new chapters
47	new professional chapters worldwide
228	new student chapters worldwide

The PDC's Learning Webinars continue to attract members and non-members alike. This popular series presents expert industry professionals and visionaries and is designed to keep practitioners at the forefront of technical trends and professional development techniques.



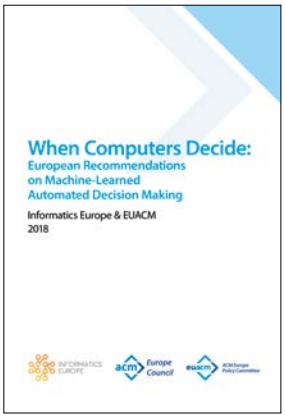
The exhaustive two-year effort to update ACM's Code of Ethics and Professional Conduct concluded at the end of FY18 with its approval by ACM Council. The revised code "expresses the conscience of the profession," say its authors, and is designed to inspire and guide the ethical conduct of anyone who uses computing technology in an impactful way.

Public Policy

ACM's U.S. Public Policy Council (USACM) and ACM's Europe Council Policy Committee (EUACM) made significant progress in delivering their mission to educate and inform legislators, the computing community, and the public about policy issues related to IT and computing.

There were many policy issues addressed by USACM in FY18, one of the most public was a letter to key U.S. legislators in advance of testimony from Facebook's CEO to the U.S. Senate and House of Representatives. The letter raised concerns about breaches of privacy and public trust resulting in Facebook's use (and misuse) of its users' data and issued a statement on the importance of preserving personal privacy.

USACM and EUACM issued a joint statement addressing existing and expected privacy and security concerns surrounding the Internet of Things ecosystem. The proposed principles in their statement offer protective approaches while ensuring the technology moves forward.



ACM Europe Policy Committee and ACM Europe Council joined with Informatics Europe to produce a white paper for policymakers and industry that outlined the technical, ethical, legal, economic, societal, and educational ramifications of automated decision making (ADM). *When Computers Decide: European Recommendations on Machine-Learned Automated Decision Making* presents 10 specific recommendations addressing the challenges posed by the increased presence of machine learning and ADM.

The Committee on Computers and Public Policy assists ACM in a variety of relevant issues pertaining to computers and public policy around the world. Most notably, CCP's respected *ACM Forum on Risks to the Public in Computers and Related Systems* continues to share and discuss potential and serious computer-related risks with a global audience.

Students

The 2018 ACM Student Research Competition offers a unique forum for undergraduate and graduate students to present their original research before a panel of judges and attendees at ACM conferences. This year's competition, sponsored by Microsoft, drew over 380 computer science students who presented research projects at 26 participating ACM conferences.

ACM's student chapters are credited as leading forces in the Hour of Code movement, an annual global event to generate excitement in young people about programming and technology. Dozens of student chapters are actively involved in organizing their own Hour of Code events each year, the number of participating ACM chapters increased 32% between 2016 and 2017. Students serve as teachers, coaches, and mentors; all working toward the common goal of achieving greater diversity in computer science education.

The University of Kentucky's ACM-W student chapter made headlines for its work with Breaking Ground, a New York City-based organization that helps the homeless find shelter. Since Fall 2017, the students have been collaborating with the organization to create an app that helps street outreach teams collect data on its clients more efficiently and effectively.

ACM student chapter members in India work with young students during the global Hour of Code in December.

© Heidelberg Laureate Forum Foundation

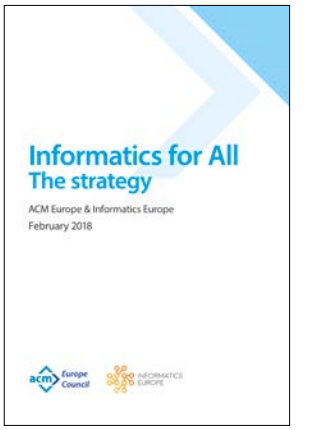
ACM's support of the annual Heidelberg Laureate Forum helps send 200 students to this much sought-after event.

Students from the University of Kentucky worked with outreach teams in New York City to create an app to assist in the collection of data on the city's homeless population.

© Heidelberg Laureate Forum Foundation

ACM's student chapters have been instrumental in the worldwide success of the annual Hour of Code, serving as coaches and mentors.

ACM Europe Council



ACM Europe Council and Informatics Europe combined efforts to develop a comprehensive strategy for providing informatics education throughout Europe. *Informatics for All: The Strategy*, is a far-reaching report aimed at establishing informatics as an essential discipline for students in Europe at all levels throughout the educational system.

In an effort to shine a spotlight on ACM conferences throughout Europe, EUACM established the ACM Europe Council Best Paper Award to recognize authors of outstanding technical contributions to ACM. The award aims to acknowledge groundbreaking research and to highlight theoretical and practical innovations likely to shape the future of computing both in Europe and worldwide.

The second ACM Europe Summer School on Data Science was a huge success, leaving memorable impressions on students and lecturers alike. The program was held in Athens and featured lectures, hands-on practical work, and special presentations from guest speakers.

The mission of ACM Women in Computing Europe (ACM-WE) is to foster women's education and careers in computing. The womENcourage Celebration of Women in Computing is a flagship event and was hosted by Universitat Politècnica de Catalunya in Barcelona, Spain.

ACM India Council

ACM India's education initiative—CSPathshala—moved into high gear, tackling the challenges of teaching computational thinking (CT) in grades 1–8 in schools throughout India. The key objectives of CSPathshala are to popularize CT and to influence education policy to enable its introduction into the curricula. A two-pronged approach has been undertaken: developing a CT curriculum and teaching aids along with working at grassroots levels with schools, training teachers, executing pilot projects, and collecting data to demonstrate the feasibility and efficacy of teaching CT.

ACM India's flagship conference was held in Nagpur in February. This annual event celebrates ACM's spirit and India's accomplishments in computing with talks from many Turing recipients and other leading lights in the field.

ACM-W continues its strong presence throughout India, with its Celebrations of Women in Computing, summer school programs, national-level wom-

en's hackathons, and professional conferences to support and advocate the engagement of women in all aspects of the computing field.

India's annual Grace Hopper and ACM-W Celebration events had a banner year. ACM-W Chennai Chapter and SRM University hosted the always-popular ACM India Celebration of Women in Computing in September. Moreover, the Grace Hopper Celebration of Women in Computing, India, drew over 3,700 female computing professionals and students to share their experiences and research in the field.

ACM and Microsoft Research (MSR) co-organized the third Academic Research Summit, in partnership with International Institute of Information Technology (IIIT) Hyderabad. The theme of the event was Artificial Intelligence: A Future with AI and attracted academic, research, industry, and government representatives from throughout India.

ACM China Council

The co-chairs of the ACM China Council served as co-organizers of the first regional special section to appear in *Communications of the ACM*. A workshop to brainstorm ideas for this editorial project was hosted at the University of Chicago Center in Beijing last March. Co-chairs Wenguang Chen and Xiang-Yang Li invited contributors from a wide range of academic and industry communities spanning Mainland China, Macau, and Hong Kong. The response to the workshop was robust as many industry and academic representatives participated in the November 2018 *Communications* section spotlighting some of the most exciting computing trends and activities in the China region.

Members of the workshop convened in Beijing to help develop content for the first regional special section for *Communications of the ACM*.

The Annual ACM Turing Celebration Conference–China (ACM TURC 2018) welcomed attendees to Shanghai last May. The turnout was outstanding as the theme of this year's event was "To Learn Artificial Intelligence, To Create Infinite Possibilities." The conference serves as a premier international forum on computer science research, with Turing Award recipients on hand to share their perspectives on cutting-edge technologies and explore the current trends in AI.

ACM China Council participated in the 17th Annual China National Computer Congress (CNCC) in Fuzhou, capital of southeast China's Fujian Province. CNCC has become the largest and most influential event in China, drawing over 6,000 attendees every year.

Conferences

SIGCSE 2018, ACM's Special Interest Group for Computer Science Educators, broke all previous attendance records. The theme for the annual meet was "CS For All" and it showcased the largest program in its history, with tracks covering a broad array of topics in K–12 and higher education.

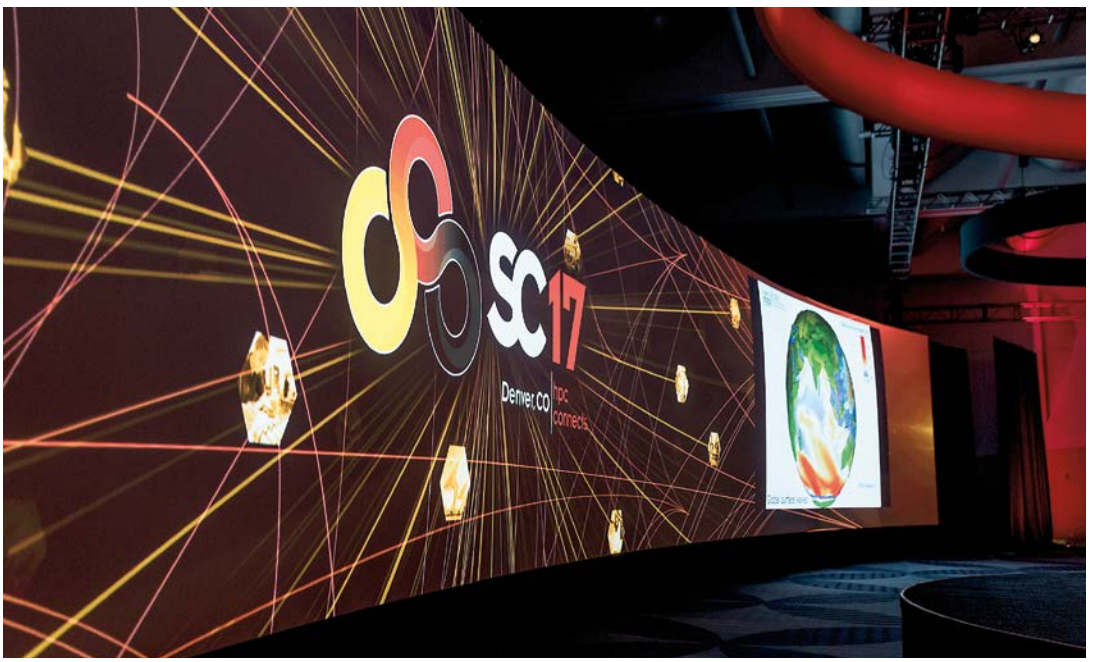
The first Asia-based Genetic and Evolutionary Computation Conference (GECCO) was a big success, recording the highest attendance in the conference's history. The meet, held in Kyoto, Japan, drew submissions from over 55 countries.

The 23rd Annual ACM SIGKDD International Conference on Knowledge and Data Discovery drew a record crowd to Halifax, Nova Scotia, as the conference is recognized worldwide as a premier event in data mining, knowledge discovery, large-scale data analytics, and big data.

The first ACM Open IoT Day, held in conjunction with SIGMOBILE's annual conference, provided a venue for industry practitioners and academics to examine the future of the Internet of Things, with particular attention to transparency, trust, and ethics.

ACM's second AI for Good Global Summit—the leading United Nations platform for dialogue on AI—met in Geneva last May. This respected meeting is designed to identify practical applications of AI and supporting strategies to improve the quality and sustainability of life on the planet.

Many ACM Turing laureates and 200 students were on hand for the fifth annual Heidelberg Laureate Forum. This high-profile weeklong event allows selected students to meet industry icons, prestigious award recipients, and to share scientific inspiration.



SC17 was held in Denver, CO, USA.

Humanoid robot Pepper made an appearance in SC17's Exhibition Hall.

The 23rd Annual ACM SIGKDD International Conference on Knowledge and Data Discovery drew a record audience.

ACM's involvement with the Heidelberg Laureate Forum celebrated its fifth year.

Recognition

John L. Hennessy and David A. Patterson were named the recipients of the 2017 ACM A.M. Turing Award for pioneering a systematic, quantitative approach to the design and evaluation of computer architectures with enduring impact on the microprocessor industry.

The ACM Fellows program recognized 54 members for their major contributions to CS, artificial intelligence, cryptography, computer architecture, high-performance computing, and programming languages.

ACM also named new Distinguished Members, of which there were 31 Distinguished Scientists, five Distinguished Educators, and three Distinguished Engineers.

ACM-W welcomed 39 new chapters and hosted 22 Celebrations of Women in Computing events worldwide over the fiscal year.

The Distinguished Speakers Program Committee finished a stellar year, posting 138 lectures (up 48% from FY17) in almost three-dozen countries. The European Union hosted the most lectures this year (39), followed by India (35) and the U.S. (31).

2017 ACM Fellows photographed at the ACM Awards Banquet in San Ftancisco last June.

Guests mingle at ACM's Annual Award Banquet.

ACM AWARD RECIPIENTS

A.M. Turing Award
John L. Hennessy, David A. Patterson

ACM Prize in Computing
Dina Katabi

ACM-AAAI Allen Newell Award
Margaret A. Boden

Grace Murray Hopper Award
Amanda Randles

Software System Award
Fernando Pérez, Brian E. Granger, Min Ragan-Kelley, Paul Ivanov, Thomas Kluyver, Jason Grout, Matthias Bussonier, Damiàn Avila, Steven Silvester, Jonathan Frederic, Kyle Kelley, Jessica Hamrick, Carol Willing, Sylvain Corlay, Peter Parente

Karl V. Karlstrom Outstanding Educator Award
Judith Gal-Ezer

Paris Kanellakis Theory and Practice Award
Scott Shenker

ACM Policy Award
William A. Wulf

Distinguished Service Award
Janice E. Cuny

ACM-W Athena Lecturer Award
Andrea Goldsmith

Outstanding Contribution to ACM Award
Steve Bourne

ACM Presidential Awards
Donald Gotterbarn, Andrew McGettrick, Fabrizio Gagliardi

2017 ACM-IEEE CS Eckert-Mauchly Award
Susan Eggers

2017 ACM-IEEE CS Ken Kennedy Award
Jésus Labarta

Doctoral Dissertation Award
Aviad Rubenstein

Honorable Mention
Mohsen Ghaffari, Stefanie Mueller

ACM India Doctoral Dissertation Award
Palash Dey

Honorable Mention
Manoj Agarwal, Swagato Sanyal

ACM China Doctoral Dissertation Award
Chao Wu and Xiaodan Liang

ACM China Rising Star Award
Xiaohua Tian, Ju Fan

ACM/CSTA Cutler-Bell Prize in High School Computing
Sreya Guha, Amy Jin, Amir Helmy, Benjamin Spector, Michael Truell

ACM-IEEE CS George Michael Memorial HPC Fellowships
Shaden Smith and Yang You

IPSJ/ACM Award for Early Career Contributions to Global Research
Yasuko Matsubara

ACM COUNCIL

President
Vicki L. Hanson

Vice President
Cherri M. Pancake

Secretary/Treasurer
Elizabeth Churchill

Past President
Alexander L. Wolf

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Jeanna Matthews

Publications Board Co-Chairs
Jack Davidson, Joseph A. Konstan

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Gabriele Anderst-Kotsis, Vinton Cerf, Susan Dumais, Elizabeth D. Mynatt, Pamela Samuelson, Eugene H. Spafford, Per Stenström

SGB Council Representatives
Paul Beame, Renée McCauley, Loren Terveen

Council Chairs
ACM Europe: Dame Professor Wendy Hall
ACM India: President: Madhavan Mukund
ACM China: Wenguang Chen and Xiang-Yang Li
ACM-W: Valerie Barr
USACM: Stuart Shapiro
Education Board: Mehran Sahami, Jane Chu Prey
Practitioners Board: Terry J. Coatta

ACM HEADQUARTERS

Acting CEO and Chief Operating Officer
Patricia M. Ryan

ACM's A.M. Turing Award recipients John L. Hennessy and David A. Patterson (2nd and 3rd from left, respectively) receive honors at the ACM Awards banquet, with ACM President Vicki L. Hanson, Google's Jeffrey Dean (2nd from right), and ACM Awards Committee co-chair John White.

Financial Statements

Statement of Activities: Year ended June 30, 2018 (in Thousands)

REVENUE	Unrestricted Net Assets	Temporarily Restricted Net Assets	Total
Membership dues	$7,101		$7,101
Publications	22,732		22,732
Conferences and other meetings	36,526		36,526
Interests and dividends	2,783		2,783
Net appreciation of investments	3,289		3,289
Contributions and grants	6,882	$1,257	8,139
Other revenue	257		257
Net assets released from restrictions	2,472	(2,472)	0
Total Revenue	**82,042**	**(1,215)**	**80,827**
EXPENSES			
Program:			
Membership processing and services	$981		$981
Publications	10,854		10,854
Conferences and other meetings	33,697		33,697
Program support and other	14,622		14,622
Total	**60,154**		**60,154**
Supporting services:			
General administration	12,349		12,349
Marketing	924		924
Total	**13,273**		**13,273**
Total expenses	**73,427**		**73,427**
Increase (decrease) in net assets	8,615	(1,215)	7,400
Net assets at the beginning of the year	107,334	8,555	115,889
Net assets at the end of the year	**$115,949**	**$7,340**	**$123,289***

* Includes SIG Fund balance of $53,550K

Balance Sheet: June 30, 2018 (in Thousands)

ASSETS	
Cash and cash equivalents	$29,210
Investments	122,436
Accounts receivable and other current assets	7,301
Deferred conference expenses and other assets	8,349
Fixed assets, net of accumulated depreciation and amortization	742
Total Assets	**$168,038**

LIABILITIES AND NET ASSETS	
Liabilities:	
Accounts payable, accrued expenses, and other liabilities	$14,111
Unearned conference, membership, and subscription revenue	30,638
Total liabilities	**$44,749**
Net assets:	
Unrestricted	115,949
Temporarily restricted	7,340
Total net assets	**123,289**
Total liabilities and net assets	**$168,038**

Optional Contributions Fund — Program Expense ($000)	
Education Board accreditation	$95
USACM Committee	20
Total expenses	**$115**

ACM's Special Interest Groups

SIGACCESS Special Interest Group on Accessibility and Computing
SIGACT Special Interest Group on Algorithms & Computation Theory
SIGAI Special Interest Group on Artificial Intelligence
SIGAPP Special Interest Group on Applied Computing
SIGARCH Special Interest Group on Computer Architecture
SIGAda Special Interest Group on Ada Programming Language
SIGBED Special Interest Group on Embedded Systems
SIGBio Special Interest Group on Bioinformatics, Computational Biology
SIGCAS Special Interest Group on Computers and Society
SIGCHI Special Interest Group on Computer-Human Interaction
SIGCOMM Special Interest Group on Data Communication
SIGCSE Special Interest Group on Computer Science Education
SIGDA Special Interest Group on Design Automation
SIGDOC Special Interest Group on Design of Communication
SIGECOM Special Interest Group on Electronic Commerce
SIGEVO Special Interest Group on Genetic and Evolutionary Computation
SIGGRAPH Special Interest Group on Computer Graphics
SIGHPC Special Interest Group on High Performance Computing
SIGIR Special Interest Group on Information Retrieval
SIGITE Special Interest Group on Information Technology Education
SIGKDD Special Interest Group on Knowledge Discovery in Data
SIGLOG Special Interest Group on Logic and Computation
SIGMETRICS Special Interest Group on Measurement and Evaluation
SIGMICRO Special Interest Group on Microarchitecture
SIGMIS Special Interest Group on Management Information Systems
SIGMM Special Interest Group on Multimedia Systems
SIGMOBILE Special Interest Group on Mobility of Systems, Users, Data and Computing
SIGMOD Special Interest Group on Management of Data
SIGOPS Special Interest Group on Operating Systems
SIGPLAN Special Interest Group on Programming Languages
SIGSAC Special Interest Group on Security, Audit and Control
SIGSAM Special Interest Group on Symbolic & Algebraic Manipulation
SIGSIM Special Interest Group on Simulation
SIGSOFT Special Interest Group on Software Engineering
SIGSPATIAL Special Interest Group on Spatial Information
SIGUCCS Special Interest Group on University & College Computing Services
SIGWEB Special Interest Group on Hypertext, Hypermedia and Web

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