

# ANNUAL REPORT 2021 FISCAL YEAR

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



Association for  
Computing Machinery

# From the ACM President



**“Because computing is vital on the macro level, on the micro level, it was important that the work of ACM continue smoothly. I’m happy to convey that we, as a community, made sure ACM didn’t miss a beat.”**

**—ACM President  
Gabriele Kotsis**

At ACM, we see a world where computing helps solve tomorrow’s problems—where we use our knowledge and skills to advance the profession and make a positive impact. Computing’s power to solve problems and make a positive impact has certainly been on display during the past two years. As the COVID pandemic spread, both longstanding and recent advances achieved by computing professionals have helped to ensure that many areas of commercial and social life continued functioning.

Computer networks allowed for remote work, school, shopping and entertainment. Cloud computing and data storage played an important role in keeping the global supply chain moving. In healthcare, computing resources not only helped track the disease, but improved collaboration, communication, and the delivery of essential services at hospitals and healthcare providers.

Because computing is vital on the macro level, on the micro level, it was important that the work of

ACM continue smoothly. I’m happy to convey that we, as a community, made sure ACM didn’t miss a beat. What may be most noteworthy about this year’s annual report is how much it resembles reports from past years. Yes, there were some bumps in the road, but thanks to ACM’s membership, volunteers and staff, we provided the same level of services and resources to the community that we always have.

A broad range of new research was published and disseminated through ACM conference proceedings and journals. *Communications of the ACM* and ACM’s magazines were continuously issued. The ACM Digital Library, the leading repository of computing literature, was accessed by researchers and students everywhere. We launched new journals and released educational curricula. We celebrated the luminaries of the field through our awards program. And we undertook new initiatives in our efforts to foster diversity, equity and inclusion in the field. In the following pages, you’ll

learn about these and our other successes in 2021.

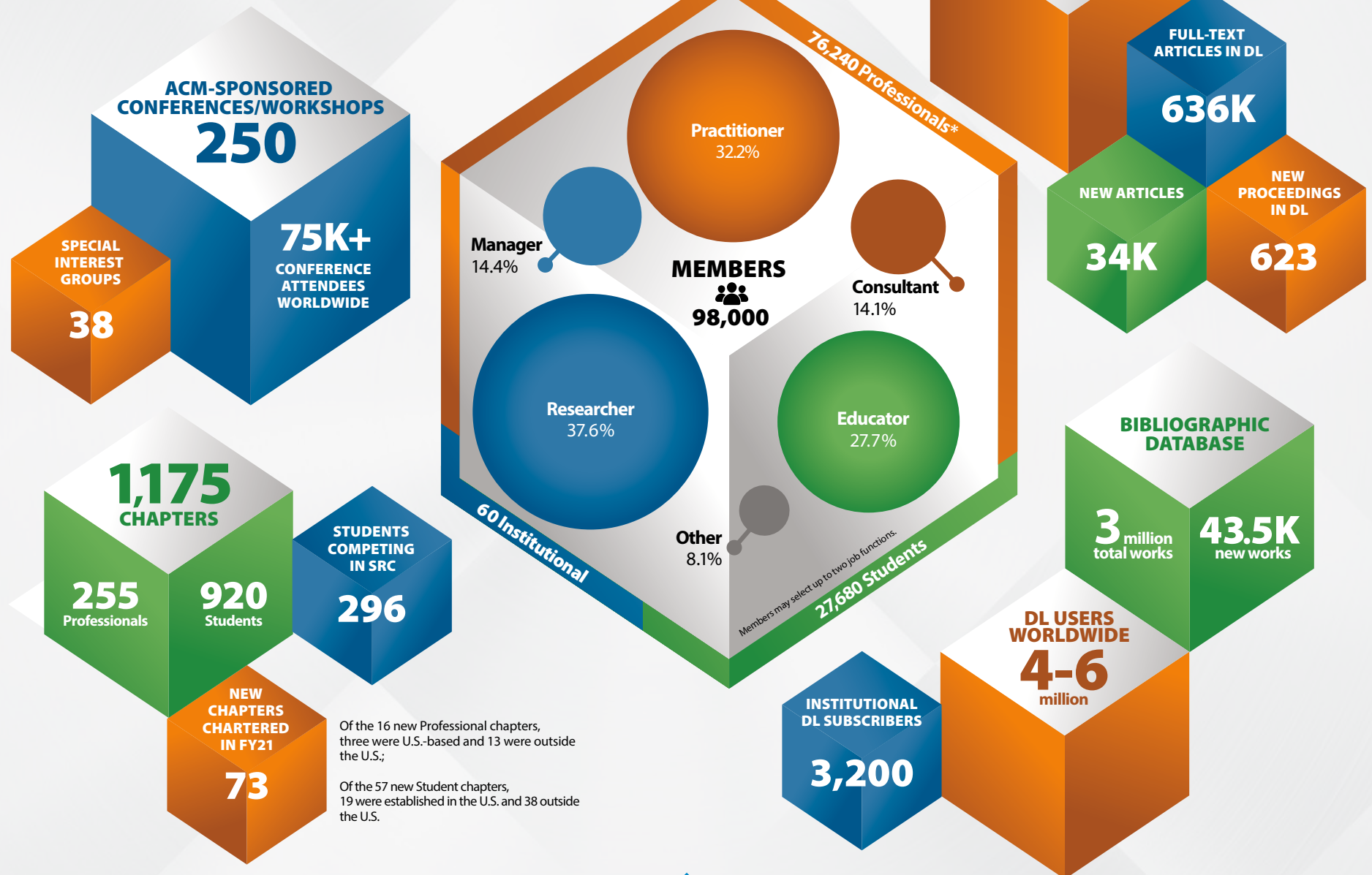
One area where we saw the most change was in how many ACM conferences had to pivot to an entirely online format. On behalf of all the ACM Executive Leadership, I want to thank the volunteers and SIG leaders for organizing these online conferences.

Many believe that the kind of digital interaction we had with the world because of COVID was only a dress rehearsal for the “digital everything” revolution that is already underway. If this forecast is accurate, ACM members will play a lead role in this ongoing transformation.

As professionals who work in research and innovation on a daily basis, we know that we learn by trial and error. And we refine with each step. This is the approach we will use to keep ACM growing and innovating in 2022 and beyond.

**—Gabriele Kotsis  
ACM President,  
July 2020–June 2022**

# FY21 @ ACM





# Publications Portfolio

Publications remain one of ACM's principal activities and pivotal lines of business.

Significant progress was made in the roll-out of ACM Open, an ambitious strategy for transforming ACM to a fully open access model by 2025. Launched in January 2020, ACM Open provides affordable predictable pricing for open access publication in the ACM Digital Library and full institutional access to DL subscription content. By the end of FY21, 111 institutions have signed ACM Open licenses. Approximately 12.5% of research articles published by ACM are open as a result of

authors paying Article Process Charges or through ACM Open licenses.

The Publications Board developed and implemented policies and procedures to support name changes in published works. The new policy was motivated by the challenges faced by individuals who change names in circumstances where use of their prior names can be harmful or hurtful.

ACM publications policies and practices were updated to ensure that all ACM authors are able to comply with Plan S requirements when publishing their work with ACM.

To improve ACM's author name normalization process and to improve DL publication data, the Publications Board approved a new policy to mandate the use of Open Research and Contributor IDs (ORCID) for all ACM journals and conferences.

Two new ACM journals were launched during FY21, *ACM Transactions on Evolutionary Learning and Optimization* and *ACM Transactions on Quantum Computing*.

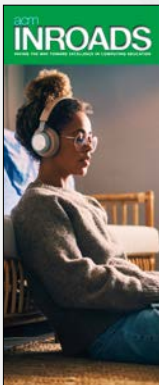
The Proceedings of the ACM journal series reached a significant milestone with the indexing of its first titles by Clarivate, and progress towards

further indexing and Impact Factor assignments.

ACM's DL continues to be the primary channel for delivering and reading ACM publications worldwide. In FY21, there were 36.9 million full-text downloads from the ACM DL, an increase of 23% from FY20. This large increase is likely due to ACM's decision to open the entire DL for free from April 1 - July 31, 2020 in response to the COVID pandemic.

During FY21, 34,516 full-text articles were added to the ACM DL, bringing ACM's total DL holdings to 636,128 full-text articles. ACM's *Guide to Computing Literature* is integrated with the ACM Digital Library, providing an increasingly comprehensive and freely available index to the top-tier literature of computing. During FY21, approximately 43,500 works were added to the bibliographic database, bringing the total Guide coverage to 2.99 million works.

During FY21, ACM added 623 volumes of conference and related workshop proceedings to its portfolio; this included 248 volumes added to ACM's International Conference Proceedings Series (ICPS).



62 Journals and Transactions

7 Magazines

29 Newsletters



# Publications Portfolio

ACM magazines continue to generate an enormous number of downloads from the DL. FY21 proved a record-setting year for downloads from *Communications of the ACM*, the Association's flagship publication, with almost 4 million reported. In addition, traffic on [cacm.acm.org](http://cacm.acm.org) site grew to 3.8 million pageviews (up from 3.4 million in FY20).

*Queue*, ACM's bimonthly online magazine for practicing software engineers, continues to attract content from industry leaders. *Queue* recorded more than 2 million article downloads last year, significantly more than the 1.5 million downloads the prior year.

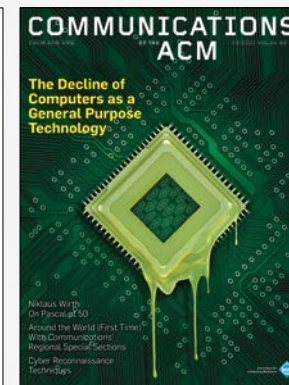
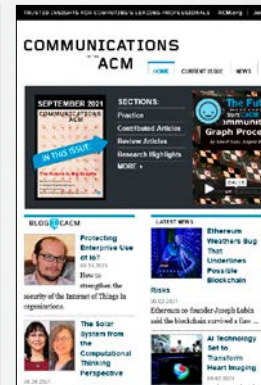
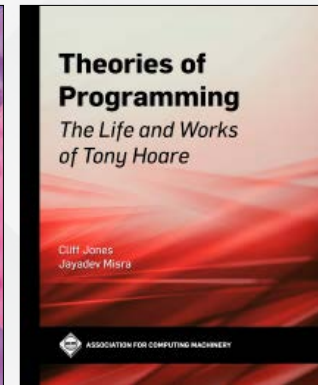
*Interactions*, ACM's magazine serving the disciplines within human-computer interaction, recorded over 700,000 downloads, almost triple that of FY20. The publication has expanded its coverage in the last 18 months to include such issues of social justice, gender/global inequities, and sustainability concerns—giving a platform to new voices for change within the HCI community. *Interactions'* website logged over 355,000 pageviews from almost 220,000 unique visitors, an increase of 28% over FY20.

Other ACM magazines also continue to draw impressive, expansive audiences

online. *eLearn* magazine, ACM's online publication for e-learning research and practice, continues to attract educators and training professionals from around the world. In FY21, *eLearn* served almost 505,000 DL downloads, and its website recorded over 277,000 pageviews and 177,300 users. *Ubiquity*, an online-only publication dedicated to advancing critical analysis and commentary on issues linked to the IT profession, counted almost 418,000 downloads, and logged almost 230,000 pageviews and over 173,000 users in FY21.

Also of note was a new partnership with the Research4Life program, which provides free access to online resources to institutions in developing nations. Through this new partnership, ACM is providing free access to the ACM DL to approximately 1,450 institutions across 72 nations.

As FY 2021 came to a close, preparations were well underway for the launch of a new ACM Digital Library Board, with responsibility for the DL platform, and the associated restructuring of staff and volunteer realignments in place to enable that Board to launch successfully on July 1, 2021.





# Education

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

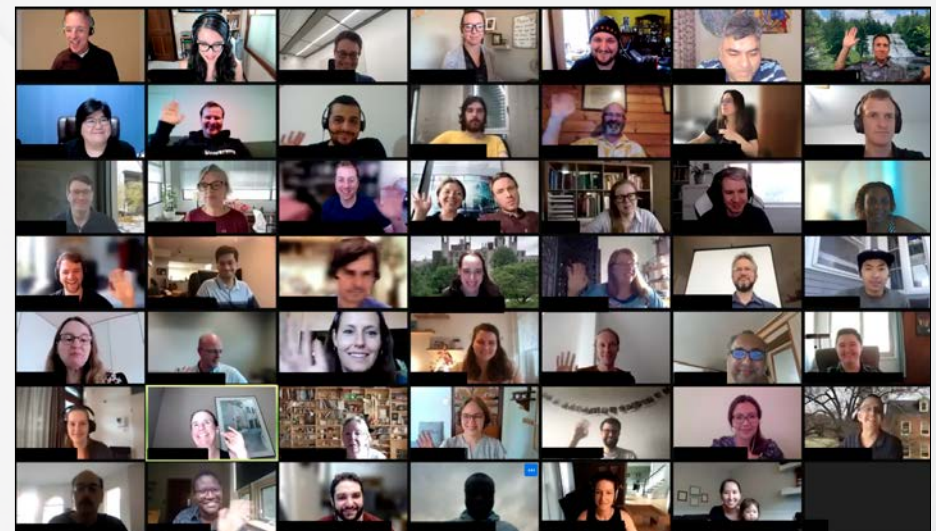
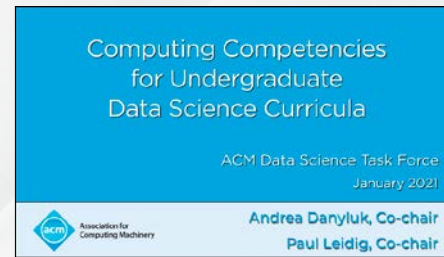
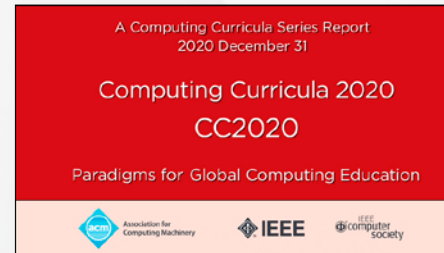
[“Computing Curricula 2020: Paradigms for Global Computing Education”](#) (CC2020) was released in January 2021. CC2020, an international joint project of multiple professional computing societies, examines the current state of curricular guidelines for academic programs granting degrees in computing. In addition to the report, an online visualization tool is planned that will compare the guidelines to situate and contextualize them in the landscape of computing education. The visualization of the curricula is expected during FY22.

Also released in January 2021 was the [“CCDS2021: Computing Competencies for Undergraduate Data Science Curricula.”](#) This

report defines the computing/computational contributions to the new field of Data Science and provides guidance for computer science or similar departments offering data science/analytic programs of study at the undergraduate level.

[EngageCSEdu](#) is a collection of faculty-contributed, peer-reviewed introductory computer science course materials, which ACM acquired from NCWIT. The transfer of materials to the DL is complete, an editorial board and reviewer group have been established, and submissions for review and publication are being received.

The [Learning at Scale](#) (L@S) conference was created by the Education Board in 2014. Having demonstrated a robust community, high-quality research, and financial viability, the meeting became an annual conference. Because of the continuing impact on travel from the COVID pandemic, the 2021 installment of the conference was held online in June with 244 virtual attendees.

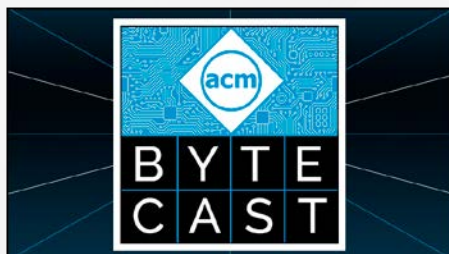


ICER 2021: The 17th ACM International Computing Education Research Conference

# Professional Development



The Practitioner Board and Professional Development Committee (PDC) directed many new products and initiatives designed for computing practitioners and managers. In FY21, the Board created and expanded a rich set of activities.



The PDC's popular webinar series, [ACM TechTalks](#), continues to be one of the most exciting programs from ACM Learning. Focused on keeping busy practitioners at the forefront of technical trends, TechTalks feature expert industry professionals, ACM award recipients, and researchers from industry and academia. Registration is free and the TechTalks can be attended both live and viewed on-demand. During the year, 16 webinars were produced on a variety of topics ranging from code reviews to cognitive AI assistants, which attracted a total audience of nearly 24,000 computing professionals and students.



The Practitioner Board's new podcast series, [ACM ByteCast](#), presents interviews with



researchers, practitioners, and innovators who are at the intersection of computing research and practice. Guests share their experiences, the lessons they have learned, and their visions for the future of computing. Launched in April 2020, 15 interviews were released in FY21; downloads and listeners grew steadily.

The Practitioner Board successfully launched [ACM Selects](#) in September 2020. Selects are themed shortlists of learning resources curated by subject matter experts with the goal of helping busy professionals discover computing in an easily digestible format. During FY22, 25 Selects were released on topics ranging from "Getting Started in Computer Science" to a "Spotlight on Computing in Bangladesh."

ACM Focus was launched in April in response to requests from members for content customized to their technical interests. ACM Focus is a set of AI-curated custom feeds by subject, each serving up a tailored set of the latest relevant ACM content, including papers,

proceedings, blog posts, videos, and more.

Launched in September 2020, ACM-W's [Celebrating Technology Leaders](#) webinar series highlights the stories of successful women in technology who are leading diverse careers in computing. The series, which is free and open to the public, conducted five webinars during the year featuring women in robotics, data science, UI/UX, and entrepreneurs.

ACM's Committee on Professional Ethics worked to facilitate the adoption of the [ACM Code of Ethics and Professional Conduct](#) by other organizations. In September 2020, the International Federation for Information Processing (IFIP) adopted a new Code of Ethics adapted from the ACM Code. Established in 1960 under the auspices of UNESCO, IFIP is made up of nearly 50 national and international societies and academies of science to conduct research, develop standards and promote information sharing.



# Diversity, Equity, and Inclusion

Anyone, from any background, should feel encouraged to participate and contribute to ACM. ACM is committed to creating an environment that welcomes new ideas and perspectives, and where hostility or other antisocial behaviors are not tolerated. Diversity, equity, and inclusion are among ACM's core values, and any form of discrimination is a violation of ACM's Code of Ethics and Professional Conduct.

To ensure that ACM's governance and activities involve people from diverse backgrounds and perspectives, ACM created the Diversity, Equity, and Inclusion Council in 2019 as a cross-cutting group to coordinate and promote diversity, equity, and inclusion efforts throughout the organization.

During the past year, ACM was among many institutions whose commitment to diversity, equity, and inclusion were questioned. ACM's Diversity, Equity, and Inclusion Council responded by forming the [Committee on](#)

[Systemic Change](#) to reexamine whether there are systemic issues within the organization that perpetuate exclusionary practices and disadvantage members of the computing community.

The Diversity, Equity, and Inclusion Council continues its efforts to replace offensive or exclusionary terminology in the computing field through maintaining [Words Matter](#), a living list of computing terms to be avoided in professional writing and presentations along with alternative language.

SIGACCESS initiated a [Diversity and Inclusion Scholarship](#) for the ASSETS 2020 conference and awarded 42 scholarships. The program aims to reach out to diverse communities that are underrepresented in the accessibility research field. Covering registration for the virtual conference, the program is intended to support practitioners, researchers, members of advocacy groups, and individuals with disabilities or neurological difference who are interested in the field of computers and accessibility.

SIGCAS surveyed its members, which revealed a lack of diversity in terms of race, gender, and geographical distribution of members worldwide. In response to the results, SIGCAS is launching a Justice, Equity, Diversity and Inclusion project to develop specific activities that will attract a more diverse set of new members to the SIG.

SIGCHI held a series of ten [Equity Talks](#) on a variety of topics focused on making SIGCHI more accessible and inclusive of a broader group of people. The sessions were recorded, with captioning and sign language support, and uploaded to SIGCHI's YouTube channel. They are also summarized in blog posts on the newly launched [SIGCHI Medium](#) publication, an effort to bring together diverse voices from different parts of the world.

SIGMM launched a strategy called "25 in 25" to increase the participation of women in the SIG

and all its activities to at least 25% by 2025.

SIGSAC sponsored the [iMentor workshop](#) at CCS 2020, which aims at attracting, mentoring, and career advising early-stage graduate students from underrepresented communities who want to pursue a career in computer security.

SIGGRAPH held a two-day DEI Summit before the SIGGRAPH 2020 conference and has moved to fully integrate the summit into the 2021 conference, expanding the previously separate event throughout the conference.

SIGHPC hosted its Immersion program for the first time at SC20 as a virtual program with the goal of fully engaging students in the SC conference and providing them with a variety of guides and mentors to support and engage them during the conference. The program targets undergraduate students from communities traditionally underrepresented in HPC from smaller four-year institutions and community colleges.



# Public Policy

The ACM Technology Policy Council (TPC) sets the agenda for ACM's international policy activities. The Association's U.S. Technology Policy Committee (USTPC) serves as the hub for ACM's interaction with U.S. government organizations, the computing community, and the public on matters of public policy and technology. The Europe Technology Committee (Europe TPC) informs technology and computing policy issues with the European Commission and other governmental bodies in Europe, and the informatics and computing communities. Both



committees will work closely with each other and with the ACM TPC to extend the impact of its work around the world.

USTPC submitted a [court brief](#) with the U.S. Supreme Court in the landmark case of *Van Buren v. United States*—the first time it has reviewed the Computer Fraud and Abuse Act, a 1986 law that was originally intended to punish hacking. USTPC noted the questions posed in this case have broad implications for data and computing scientists, as well as other professionals who use the Internet and computing technology, particularly to access online information.

USTPC successfully launched its HotTopics webinar series, dedicated to exploring today's most relevant and important computing-related technology policy issues. HotTopics sessions take attendees inside a pressing topic in the headlines with a focus on its implications for US law and policy. During FY21, USTPC produced four, covering the [Supreme Court's ruling on the Computer Fraud and Abuse Act](#), [mega-hacks and the future of US cybersecurity](#), [voting in the electronic age](#), and [Section 230 of the Communications Decency Act](#).

During FY21, Europe TPC issued a "[Statement on the Development and Deployment of Digital Green Certificates](#)," "[Comments to European Commission in Digital Services Act Consultation](#)," and "[Comments on the UK National Data Strategy](#)."

At the request of the European Parliament, the Committee also produced a white paper on "[Gender Bias in Automated Decision Making Systems](#)."

[ACM TechBriefs](#) is a series of short technical bulletins by ACM's Technology Policy Council that aims to present scientifically grounded perspectives on the impact of specific developments or applications of technology. Designed to complement ACM's activities in the policy arena, the primary goal is to inform rather than advocate for specific policies. Topics under consideration include computing and climate change, facial recognition, election security, smart cities, and encryption, among others. The committee made significant progress during the year and several TechBriefs are planned for publication in FY22.



# Students

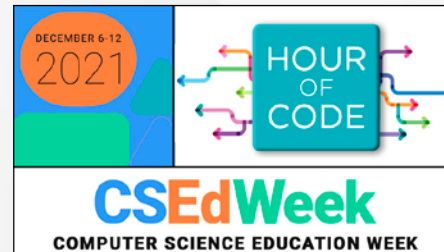
The 2021 [ACM Student Research Competition](#) offers a unique forum for undergraduate and graduate students to present their original research before a panel of judges and attendees at ACM conferences. This year, 296 students participated in competitions held at 21 major ACM conferences, advancing to compete in the Grand Finals where research contributions were evaluated by the ACM SCR Committee.

During Computer Science Education Week in December, 21 ACM Student Chapters participated in the Hour of Code, a global movement designed to generate excitement in young people about programming and technology. Games, tutorials, and other events were organized during Computer Science Education Week around the world, inspiring the next generation of computer scientists.

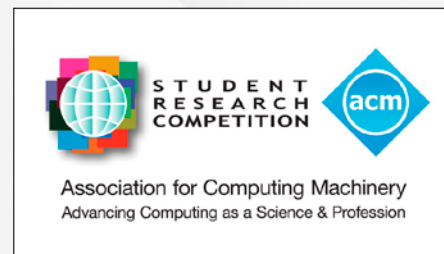
SIGARCH continued their “Meet a Senior Architect” mentoring program at ISCA and expanded the program to ASPLOS and MICRO. The program matches students with mentors,

providing students the opportunity to meet one-on-one with a senior architect for meetings. This year the program attracted 140 mentors and 182 students and moved to a virtual format.

SIGHPC, ACM’s Special Interest Group on High Performance Computing, selected 21 undergraduates to take part in its third annual Computing4Change program. Co-located with the SC conference, Computing4Change introduces students to the potential of computing to create positive change in our society. Students learn to work as part of a team, applying data analysis and computational thinking to a social challenge while experiencing the latest tools and techniques from computing and data science. Due to the pandemic, the SC20 conference and the Computing4Change program were held virtually.



A Past Computing4Change Winning Team





# News From...

## ACM Europe Council

The ACM Europe Council focuses on a wide range of ACM activities and on encouraging greater participation of Europeans in all dimensions of ACM.

One of the goals of the ACM Europe Council is to make ACM more visible to European researchers. To this end, the Council recently established the ACM Fellows working group which aims to increase the number of successful nominations from Europe for the ACM Fellows and Distinguished Member grades.

Another priority of the Council is to strengthen participation of the younger generation in ACM Europe activities. The Council sponsors two annual summer schools, the ACM Europe Summer School on Data Science in Athens and the ACM Europe

Summer School on HPC Architectures for AI and Dedicated Applications in Barcelona. Due to the COVID pandemic, the summer schools did not take place in FY21. The Summer School on HPC took place in September 2021 in virtual mode.

The ACM Europe Council established the [ACM Europe Research Visibility working group \(RAISE\)](#) with the aim of increasing the visibility of European research and ensure a higher degree of recognition for the achievements of European researchers within the scope of ACM.

[Informatics for All](#) was formed by the ACM Europe Council along with the Council of European Professional Informatics Societies (CEPIS) and Informatics Europe to advocate for the inclusion of Informatics as a foundational discipline in schools across Europe.

Informatics for All participated to the consultation phase of the European Commission's renovation of the

Digital Education Action Plan in September 2020 by submitting a [position paper](#). To advance informatics education in Europe, the coalition has been working to produce an Informatics Curriculum Framework and has produced an interim report, "Informatics Curriculum Framework for School," which is expected to be released next year.

The annual womENCourage conference, the main activity of ACM-W Europe, is focused on mentoring and exploring career opportunities for women in computer science and related disciplines. The [7th womENCourage](#) was hosted virtually by ADA University in Baku, Azerbaijan in September. The event was a great success as the first virtual womENCourage and welcomed more than 200 attendees from 40 countries.



# News From...

## ACM India Council

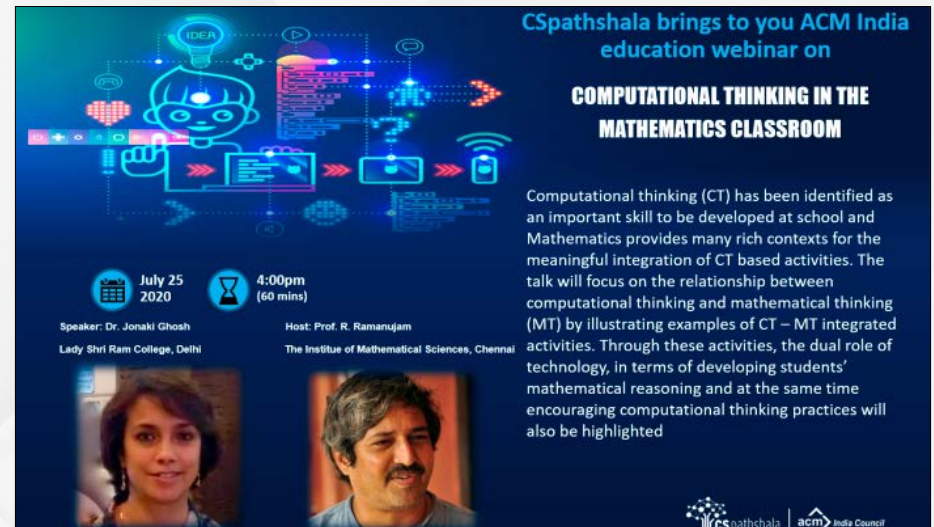
The 2021 edition of the ACM India Annual Event was held in virtually in February and hosted by PSG College of Technology, Coimbatore. The event was held over an entire day to accommodate the various time zones of the keynote speakers, and was open to the public and free to attend. This year's award ceremony recognized the inaugural recipients of three new ACM India Council awards, the Outstanding Contribution to Computing Education Award, the Outstanding Contributions in Computing by a Woman Award, and the Early Career Researcher Award.

The [Academic Research and Careers for Students \(ARCS\) Symposium](#) (formerly IRISS) was held virtually in February 2021 in Coimbatore. The ARCS Symposium provides a forum for research scholars in computer science to present their published research work to researchers from

academia and industry, potential recruiters, and fellow research scholars. The program included invited presentations by the winners of the ACM India Early Career Researcher Awards and the ACM India Doctoral Dissertation Awards.

The annual [COMPUTE](#) symposium was held virtually in Maharashtra in December 2020. COMPUTE this year was focused on the theme of improving the quality of computing education in the country and featured an invited lecture by the recipient of the inaugural ACM India Outstanding Contribution to Computing Education Award.

The ACM India Council started the education initiative, [CSpathshala](#), in 2016 with the key objectives to popularize Computational Thinking and to influence education policy to incorporate it into the curricula. During FY21, CSpathshala trained more than 7,000 teachers through 18 virtual programs consisting of webinars, awareness workshops and training programs.



**CSpashshala brings to you ACM India education webinar on**

### COMPUTATIONAL THINKING IN THE MATHEMATICS CLASSROOM

Computational thinking (CT) has been identified as an important skill to be developed at school and Mathematics provides many rich contexts for the meaningful integration of CT based activities. The talk will focus on the relationship between computational thinking and mathematical thinking (MT) by illustrating examples of CT – MT integrated activities. Through these activities, the dual role of technology, in terms of developing students' mathematical reasoning and at the same time encouraging computational thinking practices will also be highlighted

July 25 2020 4:00pm (60 mins)

Speaker: Dr. Jonaki Ghosh  
Lady Shri Ram College, Delhi

Host: Prof. R. Ramanujam  
The Institute of Mathematical Sciences, Chennai

CSpathshala | ACM India Council





# News From...

## ACM China Council

In April, the ACM China Council sponsored the 2nd China Spatial Data Intelligence Academic Conference in Hangzhou. The event was co-organized by the ACM China SIGSPATIAL chapter, the International Chinese Geographic Information Science Association (GPGIS), and the China Geographic Information Industry Association Theory and Method Working Committee.

The 5th International Future Intelligent Computing Conference High-end Forum and ACM China Xiamen Chapter Inaugural Conference was successfully held in April. The conference served as one of the academic activities of Xiamen University's 100th Anniversary.

In March, the ACM China Council held the Internet of Things and Unmanned System Security and Intelligence Forum in Hefei. At the meet-



The 2nd China Spatial Data Intelligence Academic Conference



The 5th International Future Intelligent Computing Conference High-end Forum



ACM TURC'20: the ACM Turing Celebration Conference—China

ing, ACM SIGBED China was formally established. ACM SIGBED China focuses on embedded system-related embedded software and hardware, embedded intelligence, embedded system design automation, Internet of Things, cyber-physical systems, and other fields, and is committed to serving the Greater China region.

ACM TURC'20: the ACM Turing Celebration Conference - China was held in May in Hefei. The theme of the conference was "Intelligent Industrial Internet," and explored current trends in Artificial Intelligence. This conference featured a comprehensive high-quality technical program including 10 symposia, an attractive industry program aimed at practitioners, and a variety of tutorials and workshops.



# Conferences

SIG and Conference leadership continued to face conference format decisions as a result of COVID19. All events in 2021 were held virtually. While pivoting to virtual events certainly created a great deal of work for organizers, many ACM conferences reported record-breaking attendance levels, participation, and paper submissions.

With the COVID pandemic sending ACM conferences online, it became critical to understand how to make virtual conferences accessible and share that knowledge across ACM. SIGACCESS created a new resource for ACM conference organizers: [Accessible Virtual Conferences](#). This comprehensive guide reviews the aspects of disability and assistive technology that are relevant to online events, and provides practical guidance covering planning, technical setup and presentations, with links to useful resources.

[SIGGRAPH 2020](#), the 47th Annual International Conference and Exhibition on Computer Graphics and

Interactive Techniques, was held for the first time virtually. The conference launched online on August 17 and concluded a full week of live sessions with nearly 400,000 streams worldwide. The conference remained open for registration through September 11, with content accessible to participants through October 27.

[SC20](#), the International Conferences for High Performance Computing, Networking, Storage, and Analysis was held virtually November 9 - 19. The SIGHPC conference was broadcast in U.S. Eastern Time, and then rebroadcast in Japan Standard Time. All of the program and exhibitor content will be available via the Virtual Event Platform for six months.

The [SIGCSE Technical Symposium 2021](#) was held virtually March 13 - 20. The online format presented the opportunity to engage those who have previously been unable to attend in-person events for various reasons. SIGCSE created a new steering committee for the conference charged to work on plans for growing the volunteer base for running the event and to ensure that newer

members are being recruited and trained to take on larger responsibilities for both the conference and SIG.

CHI 2021, the Conference on Human Factors in Computing Systems, was held May 8 - 13 and was planned as fully virtual event from the onset. The conference, whose theme this was "Making Waves, Combining Strengths," benefited from a series of panel discussions for organizers of all SIGCHI-sponsored conferences to facilitate knowledge sharing of best practices for virtual events.

Usually held in June of each year, the [58th Design Automation Conference \(DAC\)](#), SIGDA's flagship event, was postponed to December 5 - 9 due to the pandemic. DAC2021 was held as a hybrid event, with both in-person and virtual components, at the Moscone West Convention Center in San Francisco and was co-located with the RISC-V Summit and SEMICON West.





# Recognition

Alfred Aho and Jeffrey Ullman were the recipients of the 2020 ACM A.M. Turing Award for their fundamental algorithms and theory underlying programming language implementation and for synthesizing these results and those of others in their highly influential books, which educated generations of computer scientists.



Alfred Aho and Jeffrey Ullman

The [ACM Fellows](#) program inducted 95 new members bringing the number of ACM Fellows to 1,310.

ACM named 64 new Distinguished Members in 2020 for outstanding contributions to the field. All [2020 inductees](#) are longstanding ACM members and were selected by their peers for a range of accomplishments that have contributed to technologies that move the computing field forward. Of the 64, 56 were recognized for Outstanding Scientific Contributions to Computing, four for Outstanding Educational Contributions, and four for Outstanding Engineering Contributions.

ACM established a new award named in memory of 2006 A.M. Turing Award laureate Fran Allen. The [ACM Frances E. Allen Award for Outstanding Mentoring](#) will be presented biennially to an individual who has exemplified excellence and/or innovation in mentoring with particular attention to recognition of individuals who have shown outstanding leadership in promoting diversity, equity, and inclusion in computing. The award will be accompanied by a prize of \$25,000 to the awardee, and an ad-

ditional \$10,000 cash contribution to an approved charity of the awardee's choice. Financial Support is provided by Microsoft Research.

ACM instituted a new policy for ACM awards, advanced member grades and SIG awards to ensure the individuals ACM honors express its core values and abide by the ACM Code of Ethics. The new policy has resulted in procedures for informing award committees of relevant information regarding a nominee's ethical behavior, which will allow for fair and appropriate treatment of nominations. The new policy and procedures outline the process by which ACM may revoke a previously granted honor.

SIGACT, the ACM Special Interest Group on Algorithms and Computation Theory, added several new Test of Time Awards for papers presented at STOC: The Annual ACM Symposium on Theory of Computing. The inaugural awards were announced this year for papers published approximately 30, 20 and 10 years ago with significant impact over that period.



ACM's [History Committee](#) fosters collection, preservation, and interpretation of the history of ACM and its role in the development of computing. The committee launched an effort to extract short video segments from interviews with A. M. Turing Award laureates. Each clip, ranging from two to eight minutes in length, highlights the work and technical outlook of the laureates, providing insights into the perspectives of the recipients of ACM's most prestigious award. Currently, 157 clips drawn from interviews with 35 laureates are available on the [Turing Awardee Clips YouTube channel](#) and embedded in the laureate's webpage on the [A.M. Turing Award website](#).

# Recognition



Scott Aaronson



Shyamanth Gollakota



Ayanna Howard



Margaret Martonosi

## ACM AWARD RECIPIENTS

### 2020 ACM A.M. Turing Award

Alfred Aho  
Jeffrey Ullman

### ACM Prize in Computing

Scott Aaronson

### ACM Charles P. “Chuck” Thacker Breakthrough in Computing Award

Michael Franz

### ACM/AAAI Allen Newell Award

Hector Levesque  
Moshe Vardi

### ACM Grace Murray Hopper Award

Shyamanth Gollakota

### ACM Software System Award

Margo Seltzer, for Berkeley DB  
Michael Olson  
Keith Bostic

### ACM Karl V. Karlstrom Outstanding Educator Award

Andrew McGettrick

### ACM Paris Kanellakis Theory and Practice Award

Yossi Azar  
Andrei Broder  
Anna Karlin  
Michael Mitzenmacher  
Eli Upfal

### ACM Eugene L. Lawler Award for Humanitarian Contributions within Computer Science and Informatics

Richard Anderson

### ACM Distinguished Service Award

Jennifer Tours Chayes

### 2021-2022 ACM Athena Lecturer Award

Ayanna Howard

### Outstanding Contribution to ACM Award

Chris L. Hankin

### ACM Policy Award

Marc Rotenberg

### 2021 ACM/IEEE CS Eckert-Mauchly Award

Margaret Martonosi

### ACM-IEEE CS Ken Kennedy Award

Vivek Sarkar

### ACM Gordon Bell Prize

Team from the University of California, Berkeley; the Institute of Applied Physics and Computational Mathematics (Beijing, China); Peking University; the Lawrence Berkeley National Laboratory; and Princeton University

### ACM Gordon Bell Special Prize for High Performance Computing-Based COVID-19 Research

Team from the University of California, San Diego; the Argonne National Laboratory; NVIDIA; the University of Illinois at Urbana-Champaign; the University of Pittsburgh; and Rutgers University

### ACM IEEE CS George Michael Memorial HPC Fellowship

Kazem Cheshmi  
Madhurima Vardhan  
Keren Zhou

### 2021 SIAM/ACM Prize in Computational Science and Engineering

George Karniadakis

### IPSJ/ACM Award for Early Career Contributions to Global Research

Jun Kato

### ACM Doctoral Dissertation Award

Chuchu Fan

### Honorable Mention

Ralf Jung  
Henry Corrigan-Gibbs

### 2021 ACM India Doctoral Dissertation Award

Shikhar Vashishth

### Honorable Mention

Roohani Sharma

### ACM India Early Career Researcher Award

Saket Saurabh

### ACM India Outstanding Contributions in Computing by a Woman Award

Ranjita Bhagwan

### ACM India Outstanding Contribution to Computing Education

Sridhar Iyer

### ACM China Doctoral Dissertation Award

Pengfei Zuo  
Chengliang Chai

### ACM China Rising Star Award

Quanshi Zhang  
Xin Wang

### 2020-2021 ACM/CSTA Cutler-Bell Prize in High School Computing

Sahithi Ankireddy  
Maurice Korish  
Brian Minnick  
Emily Yuan



# Financial Statements

## Consolidated Statement of Operational Activities: Year ended June 30, 2021 (in Thousands)

	Without Donor Restrictions	With Donor Restrictions	Total
<b>REVENUE</b>			
Membership dues	\$7,259	\$—	\$7,259
Publications	23,914	—	23,914
Conferences and other meetings	11,693	—	11,693
Interests and dividends	3,526	—	3,526
Net investment return	19,310	—	19,310
Contributions and grants	7,185	2,325	9,510
Other revenue	2,915	—	2,915
Net assets released from restrictions	1,914	(1,914)	—
<b>Total Revenue</b>	<b>77,716</b>	<b>411</b>	<b>78,127</b>
<b>EXPENSES</b>			
<b>Program:</b>			
Membership processing and services	1,166	—	1,166
Publications*	24,002	—	24,002
Conferences and other meetings	11,230	—	11,230
Program support and other	4,585	—	4,585
<b>Total Program Expenses</b>	<b>40,983</b>	<b>—</b>	<b>40,983</b>
<b>Support services:</b>			
General administration	5,019	—	5,019
Membership development	831	—	831
<b>Total Support Services Expenses</b>	<b>5,850</b>	<b>—</b>	<b>5,850</b>
<b>Total Expenses</b>	<b>46,833</b>	<b>—</b>	<b>46,833</b>
Change in net assets	30,883	411	31,294
Net assets at the beginning of the year	137,657	7,073	144,730
<b>Net Assets at the End of the Year**</b>	<b>\$168,540</b>	<b>\$7,484</b>	<b>\$176,024</b>

\* Publications expense includes SIG distribution relating to Digital Library content.

\*\* Includes SIG Fund balance of \$69,479.

# Financial Statements

**Consolidated  
Balance Sheet:  
June 30, 2021  
(in Thousands)**

<b>ASSETS</b>	
Cash and cash equivalents	\$42,045
Investments	154,997
Accounts Receivable, net	7,644
Deferred Conferences Expenses and Other Assets	6,017
Prepaid and other assets	2,478
Fixed Assets, net of accumulated depreciation and amortization	1,149
<b>Total Assets</b>	<b>\$214,330</b>
<b>LIABILITIES AND NET ASSETS</b>	
<b>Liabilities:</b>	
Accounts Payable, accrued expenses, and other liabilities	\$12,401
Unearned membership, and subscription revenue	20,418
Unearned conference revenue	5,487
<b>Total Liabilities</b>	<b>\$38,306</b>
<b>Net assets:</b>	
Without Donor Restrictions	168,540
With Donor Restrictions	7,484
<b>Total Net Assets</b>	<b>\$176,024</b>
<b>Total Liabilities and Net Assets</b>	<b>\$214,330</b>
<b>OPTIONAL CONTRIBUTIONS FUND — Program Expense (in Thousands)</b>	
Education Board accreditation	\$95
US Technology Policy Committee	2
<b>Total Expenses</b>	<b>\$97</b>



# ACM's Special Interest Groups

- SIGACCESS** Special Interest Group on Accessibility and Computing
- SIGACT** Special Interest Group on Algorithms and 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 Economics and Computation
- SIGEnergy** Special Interest Group on Energy Systems and Informatics
- 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

## ACM COUNCIL

### President

Gabriele Kotsis

### Vice President

Joan Feigenbaum

### Secretary/Treasurer

Elisa Bertino

### Past President

Cherri Pancake

### SIG Governing Board Chair

Jens Palsberg

### Publications Board Co-Chairs

Jack Davidson, Joseph A. Konstan

### Members-at-Large

Nancy Amato; Tom Crick; Susan Dumais;  
Claudia Bauzer Medeiros; Mehran Sahami;  
Alejandro Saucedo; Theo Schlossnagle

### SGB Council Representatives

Pankaj Jalote; Jeanna Neeffe Matthews;  
Thomas Zimmermann

### Council Chairs

*ACM Europe:* Panagiota Fatourou

*ACM India:* Jayant Haritsa

*ACM China:* Xinbing Wang

*Diversity, Equity & Inclusion:*

Natalie Enright Jerger and John West

*TecUology Policy:* Lorraine Kisselburgh

*Education Board:*

Elizabeth Hawthorne and Chris Stephenson

*Practitioners Board:* Terry J. Coatta

## ACM HEADQUARTERS

### Executive Director and Chief Executive Officer

Vicki L. Hanson

### Deputy Executive Director and Chief Operating Officer

Patricia M. Ryan



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