



The Association for Computing Machinery  
*Advancing Computing as a Science & Profession*

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## **ACM RECOGNIZES LEADERS WHO SHAPED FUTURE FOR COMPUTER AND ENGINEERING PROFESSIONALS, EDUCATORS, POLICYMAKERS**

### **Doctoral Dissertation Award Honors Innovator of Scientific Discovery through Video Games**

**NEW YORK, May 2, 2012** – ACM (the Association for Computing Machinery) [www.acm.org](http://www.acm.org) today announced the winners of two awards whose recipients set the stage for advances in computing that influenced practitioners, researchers, educators and policymakers throughout the world. William Wulf of the University of Virginia and Kelly Gotlieb of the University of Toronto touched a broad range of computer disciplines with their focus on building information infrastructures, promoting recognition of innovation and achievement, and initiating educational and funding opportunities to sustain the growth of computational thinking. ACM also announced the winner of the ACM Doctoral Dissertation Award, Seth Cooper of the University of Washington, for his research on video games to solve scientific problems. Wulf, Gotlieb, and Cooper will be honored at the ACM Awards Banquet on June 16 in San Francisco, CA.

#### **The awards include:**

The **Distinguished Service Award** [http://awards.acm.org/distinguished\\_service](http://awards.acm.org/distinguished_service) to William A. Wulf for distinguished service as a leader of the National Science Foundation's Computer & Information Science & Engineering (CISE) Directorate, and as president of the National Academy of Engineering (NAE). The only computer scientist to serve in both of these leading organizations, Wulf helped develop the High Performance Computing and Communication Initiative to spur the construction of a national information infrastructure. At NSF, he oversaw the merger and conversion of ARPANET (Advanced Research Projects Agency Network) from the US Defense Department to the National Research and Education Network (NREN), a critical step that evolved into the Internet. At NAE, he advocated for engineering education and technical literacy, overseeing the publication of two influential reports that urged educators to prepare for the future of engineering in a dynamic technology-driven global environment. He promoted NAE's technology literacy movement to illuminate the potential for teaching engineering concepts at the K-12 level. He also created the Center on Engineering, Ethics and Society (CEES) at NAE to raise the importance of ethics in the profound impact of engineering on our society. Wulf is the AT&T professor of Computer Science at the University of Virginia. He is a member of the National Academy of Engineering, a Fellow of the American Academy of Arts and Sciences, and a Fellow of ACM, IEEE, and AAAS.

The **Outstanding Contribution to ACM Award** [http://awards.acm.org/outstanding\\_contribution](http://awards.acm.org/outstanding_contribution) to Calvin C. (Kelly) Gotlieb as the leading light of ACM Awards committee. During his 20-year stewardship, as chair and then co-chair with James Horning of the ACM Awards Committee, Gotlieb helped define the program

and raise its prestige and recognition worldwide, allowing ACM to play a major role in promoting excellence and achievement across the computing community. He chaired the ACM A.M. Turing Award Committee, and promoted the Turing Award, propelling its visibility globally, which helped increase the award's cash prize from \$1,000 two decades ago to the current \$250,000. He helped establish the Advanced Member Grades program [http://awards.acm.org/html/amg\\_call.cfm](http://awards.acm.org/html/amg_call.cfm) to recognize the accomplishments of a broader segment of ACM members. An active ACM member for more than 60 years, he was editor-in-chief of *Communications of the ACM* (1962-1965) and *Journal of the ACM* (1966-1968). A Professor Emeritus at the University of Toronto, he co-founded the university's computation center and created the first university courses on computing in Canada. He was on the first team in Canada to build computers and provide computing services. He is a member of the Order of Canada, a Fellow of the Royal Society of Canada, an ACM Fellow, and a founding Fellow of the Canadian Information Processing Society. He also received the International Federation for Information Processing (IFIP) Isaac L. Auerbach Medal, and the ACM Presidential Award.

The **Doctoral Dissertation Award** [http://awards.acm.org/doctoral\\_dissertation](http://awards.acm.org/doctoral_dissertation) to Seth Cooper for his dissertation "A Framework for Scientific Discovery through Video Games." Cooper, a computer scientist at the University of Washington, explores how the video game environment can be used for solving difficult scientific problems. He is the co-creator and lead designer and developer of Foldit, a crowdsourcing, scientific discovery game, which demonstrated the potential for solving intractable scientific problems by using games as an architecture. Employing the collective efforts of tens of thousands of gamers, Cooper's team helped solve the structure of a key protein in the fight against HIV, putting the combined power of humans and computers toward solving problems that neither could solve alone. Cooper, nominated by the University of Washington, is creative director at the University's Center for Game Science.

**Honorable Mention** winner Aleksander Madry, nominated by the Massachusetts Institute of Technology for his dissertation "From Graphs to Matrices, and Back: New Techniques for Graph Algorithms." Madry addresses the growing need to deal efficiently with massive computing tasks that arise in the context of graphs. He developed a set of novel algorithmic tools that allowed him to advance the state of the art on several fundamental graph problems. He is a Postdoctoral Researcher at Microsoft Research New England, and will join École Polytechnique Fédérale de Lausanne in July.

**Honorable Mention** winner David Steurer, nominated by Princeton University for his dissertation "On the Complexity of Unique Games and Graph Expansion." Steurer uses a novel algorithm for expansion of graphs across different scales that sheds light on an optimization problem called Unique Games, and applications beyond this hard-to-approximate problem. He is a Postdoctoral Researcher at Microsoft Research New England and will join the computer science department at Cornell University this summer.

The Doctoral Dissertation Award is presented annually to the author(s) of the best doctoral dissertation(s) in computer science and engineering. The Doctoral Dissertation Award is accompanied by a prize of \$20,000 and the Honorable

Mention Award is accompanied by a prize totaling \$10,000. Financial sponsorship of the award is provided by Google, Inc.

**About ACM**

*ACM, the Association for Computing Machinery [www.acm.org](http://www.acm.org), is the world's largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.*

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