



Association for  
Computing Machinery

*Advancing Computing as a Science & Profession*

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## ACM SIGACT Announces 2017 Awards

### Gödel, Knuth and Distinguished Service Prizes Recognize Contributions to Algorithms and Computation Theory Community

**NEW YORK, June 19, 2017** – The Association for Computing Machinery’s Special Interest Group on Algorithms and Computation Theory (SIGACT) recently announced the recipients of three significant awards. The 2017 Gödel Prize is awarded to Cynthia Dwork, Frank McSherry, Kobbi Nissim and Adam Smith for their work on differential privacy in their paper “Calibrating Noise to Sensitivity in Private Data Analysis.” The 2017 Donald E. Knuth Prize is awarded to Oded Goldreich of the Weizmann Institute of Science for fundamental and lasting contributions to many areas of theoretical computer science, including cryptography, probabilistically checkable proofs, inapproximability, property testing, and several other areas in complexity theory. Also this year, Alistair Sinclair of the University of California, Berkeley is the recipient of the 2017 ACM SIGACT Distinguished Service Prize for his role in the spectacular success of The Simons Institute for the Theory of Computing. These awards will be presented at the [49th Annual ACM Symposium on the Theory of Computing \(STOC 2017\)](#), to be held June 19-23, in Montreal, Canada.

#### 2017 Gödel Prize

Differential privacy is a powerful theoretical model for dealing with the privacy of statistical data. The intellectual impact of differential privacy has been broad, influencing thinking about privacy across many disciplines. The work of Cynthia Dwork (Harvard University), Frank McSherry (independent researcher), Kobbi Nissim (Harvard University), and Adam Smith (Harvard University) launched a new line of theoretical research aimed at understanding the possibilities and limitations of differentially private algorithms. Deep connections have been exposed in other areas of theory (including learning, cryptography, discrepancy, and geometry) and have created new insights affecting multiple communities.

[The Gödel Prize](#) is named in honor of Kurt Gödel, who was born in Austria-Hungary (now the Czech Republic) in 1906. Gödel’s work has had immense impact upon scientific and philosophical thinking in the 20<sup>th</sup> century. The award is presented annually by [ACM’s Special Interest Group on Algorithms and Computation Theory \(SIGACT\)](#) and the [European Association for Theoretical Computer Science \(EATCS\)](#).

It recognizes major contributions to mathematical logic and the foundations of computer science and includes an award of \$5,000.

### **2017 Donald E. Knuth Prize**

In establishing novel directions for research, contributing to outstanding results and creating new basic definitions, Oded Goldreich has been one of the driving forces in the theoretical computer science community for three decades. Goldreich's work within cryptography has addressed several fundamental issues. With colleagues Shafi Goldwasser and Silvio Micali, he formulated the concept of a pseudorandom function. In further work with Micali and Avi Wigderson, Goldreich introduced the ideas of zero-knowledge as the basis for secure cryptographic protocols, and later showed the power of secure multi-party computation. More recently, in joint research with Mihir Bellare and Madhu Sudan, Goldreich significantly advanced the technology of creating probabilistically checkable proofs. Goldreich's textbooks, including *Foundations of Cryptography*, as well as numerous surveys, have also been instrumental in educating the next generation of researchers.

The [Donald E. Knuth Prize](#) is named in honor of Donald Knuth of Stanford University, who has been called the "father of the analysis of algorithms." The annual award is presented by ACM SIGACT and recognizes outstanding contributions to the foundations of computer science by individuals for their overall impact in the field over an extended period, and includes a \$5,000 award.

### **2017 ACM SIGACT Distinguished Service Prize**

Alistair Sinclair has played an indispensable role in making The Simons Institute for the Theory of Computing at UC Berkeley the world's leading venue for collaborative research in theoretical computer science. As Associate Director of The Simons Institute since 2011, Sinclair has built the Calvin Lab at the UC Berkeley Campus into a beautiful and functional space, increased and supervised a superb administrative staff, organized an intensive scientific program that both fosters growth at the core of the theoretical computer science discipline while expanding boundaries, and attracted a vibrant and diverse community of researchers from around the world. Under Sinclair's leadership The Simons Institute has become an incubator for Best Papers at STOC and FOCS, as well as a magnet for a broad range of activities.

The [ACM SIGACT Distinguished Service Prize](#) is given annually to an individual who has made substantial service contributions to the Theoretical Computer Science community. It is presented at the ACM Symposium on the Theory of Computing (STOC), and comes with a \$1,000 prize, a travel grant of up to \$700 to attend the conference, and complimentary conference registration.

### **About SIGACT**

The ACM Special Interest Group on Algorithms and Computation Theory (<http://sigact.acm.org>) fosters and promotes the discovery and dissemination of high quality research in the domain of theoretical computer science. The field includes 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.

#### **About ACM**

ACM, the Association for Computing Machinery (<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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