NEWS RELEASE

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LEADING AUTHORITY ON
CRYPTOGRAPHY AND DATA PRIVACY RECEIVES KNUTH PRIZE

Dwork Honored for Breakthrough Work on Cryptography in Network Environments, Privacy, and Foundational Contributions to Theoretical Computer Science

New York, NY, June 2, 2020 – The 2020 Donald E. Knuth Prize is awarded to Cynthia Dwork of Harvard University and Microsoft Research for her sustained record of contributions to theoretical computer science over the past four decades. The Knuth Prize is jointly given by the ACM Special Interest Group on Algorithms and Computation Theory (SIGACT) and the IEEE Computer Society Technical Committee on the Mathematical Foundations of Computing (TCMF). It will be presented at the 61st Annual Symposium on Foundations of Computer Science (FOCS 2020) in Durham, North Carolina, November 16-19.

Dwork's research has transformed several fields, most notably distributed systems, cryptography, and data privacy, and, more recently, fairness in algorithmic decision making. She is widely known for the introduction and development of differential privacy, and for her work on nonmalleability, lattice-based encryption, concurrent composition, and proofs of work. She also made foundational contributions in many other areas including distributed systems with her work on consensus, and in algorithmic fairness with her work on the formalization of the "treat like alike" principle.

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 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 $10,000 cash prize, in addition to a $1,000 travel stipend for the recipient to attend the award ceremony.

Dwork is the Gordon McKay Professor of Computer Science at Harvard University in Cambridge, Massachusetts and a Distinguished Scientist at Microsoft Research. She received her BS from Princeton University (1979), her MSc from Cornell University (1981), and her PhD from Cornell

University (1983). Dwork's honors include receiving the Dijkstra Prize (jointly with Nancy Lynch and Larry Stockmeyer) for her work on consensus problems; the Gödel Prize (jointly with Frank McSherry, Kobi Nissim, and Adam Smith) for their seminal paper that introduced differential privacy; and the IEEE Richard W. Hamming Medal for her work in privacy, cryptography, and distributed computing, and for her leadership in developing differential privacy.

About SIGACT
The ACM Special Interest Group on Algorithms and Computation Theory 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, 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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