

Responsible Computing Research: Ethics and Governance of Computing Research and its Applications

Committee

Barbara J. Grosz

Chair

Barbara J. Grosz (NAE) is Higgins Research Professor of Natural Sciences in the Paulson School of Engineering and Applied Sciences at Harvard University. Dr. Grosz has made groundbreaking contributions to the field of Artificial Intelligence (AI) through her pioneering research in natural language processing and in theories of multi-agent collaboration and their application to human-computer interaction. Her recent research has explored ways to use models developed in this research to improve health care coordination and science education. Dr. Grosz is also known for her role in the establishment and leadership of multidisciplinary institutions and is widely respected for her many contributions to the advancement of women in science. She co-founded Harvard's Embedded Ethics program, which integrates teaching of ethical reasoning into core computer science courses. As founding dean of science and then dean of Harvard's Radcliffe Institute for Advanced Study, she designed and launched the Institute's science program and subsequently its "Academic Ventures" program. She was founding Chair of the Standing Committee for Stanford's One Hundred Year Study on Artificial Intelligence and has served on the boards of several scientific, scholarly and academic institutions, including serving on the CSTB 1994-98. A member of the National Academy of Engineering and the American Philosophical Society, Dr. Grosz is a fellow of the American Academy of Arts and Sciences, the Association for the Advancement of Artificial Intelligence, the Association for Computing Machinery, and the American Association for the Advancement of Science, and a corresponding fellow of the Royal Society of Edinburgh. She received the 2009 ACM/AAAI Allen Newell Award, the 2015 IJCAI Award for Research Excellence, and the 2017 Association for Computational Linguistics Lifetime Achievement Award. In 2017, Grosz received an Everett Mendelsohn Excellence in Mentoring Award from Harvard's Graduate Student Council. Professor Grosz received an A.B. in Mathematics from Cornell University and a Ph.D. in Computer Science from the University of California, Berkeley.

Mark Ackerman

Member

Mark Ackerman is the George Herbert Mead Collegiate Professor of Human-Computer Interaction and a professor in the School of Information and in the Department of Electrical Engineering and Computer Science at the University of Michigan, Ann Arbor. His major research area is Human-Computer Interaction (HCI), primarily Computer-Supported Cooperative Work (CSCW). He has published widely in HCI and CSCW, investigating collaborative information access in online knowledge communities, medical settings, expertise sharing, and most recently, pervasive environments. Mark is a member of the CHI Academy (HCI Fellow) and an ACM Fellow. Previously, Mark was a faculty member at the University of California, Irvine, and a research scientist at MIT's Laboratory for Computer Science (now CSAIL). Before becoming an academic, Mark led the development of the first home banking system, had three Billboard Top-10 games for the Atari 2600, and worked on the X Window System's first user-interface widget set. Mark has degrees from the University of Chicago, Ohio State, and MIT. Dr. Ackerman received his M.S. in Computer Science from the Ohio State University and his Ph.D. from Massachusetts Institute of Technology in Information Technologies.

Steven M. Bellovin

Member

Steven Bellovin, (NAE), is the Percy K. and Vidal L. W. Hudson Professor of Computer Science at Columbia University, member of the Cybersecurity and Privacy Center of the university's Data Science Institute, and an affiliate faculty member at Columbia Law School. He does research on security and privacy and on related public policy issues. He received a B.A. degree from Columbia University, and an MS and Ph.D. in Computer Science from the University of North Carolina at Chapel Hill. Bellovin has served as Chief Technologist of the Federal Trade Commission and as the Technology Scholar at the Privacy and Civil Liberties Oversight Board. He is a member of the National Academy of Engineering and has served on the Computer Science and Telecommunications Board of the National Academies of Sciences, Engineering, and Medicine. In the past, he has been a member of the Department of Homeland Security's Science and Technology Advisory Committee, and the Technical Guidelines Development Committee of the Election Assistance Commission.

Mariano-Florentino Cuellar

Member

Mariano-Florentino Cuéllar is a justice on the Supreme Court of California. Previously, he was the Stanley Morrison Professor of Law, Professor (by courtesy) of Political Science, and Director of the Freeman Spogli Institute for International Studies at Stanford University. A fellow of the American Academy of Arts and Sciences, Cuéllar is a scholar of public law, complex organizations, and institutions whose research explores problems in administrative law and legislation, cyberlaw and artificial intelligence, criminal justice, public health and safety, and international affairs. As director of the Freeman Spogli Institute, Cuéllar led Stanford's principal institution for the study of international affairs, with centers and programs focused on governance and development, international security, health and environmental policy, and education. He grew the Institute's faculty, launched university-wide initiatives on global poverty and cyber security, expanded nuclear security research, and increased support for undergraduate and graduate students. In the Obama administration, Justice Cuéllar led the White House Domestic Policy Council's teams responsible for civil and criminal justice, public health, and immigration, as well as its efforts to repeal the military's Don't Ask/Don't Tell policy and enact bipartisan public health, food safety, and sentencing reform legislation (2009-2010). He also led the Presidential Transition Task Force on Immigration (2008-2009), and co-chaired the U.S. Department of Education's Equity and Excellence Commission (2011-2013). He serves on the boards of Harvard University (the President & Fellows of Harvard College), the Hewlett Foundation, and the American Law Institute, and chairs the boards of the Center for Advanced Study in the Behavioral Sciences, AI Now, and Stanford Seed. Within the California judiciary, he led the statewide Language Access Implementation Task Force (2015-2019) to improve services for California's millions of limited-English speakers. Dr. Cuellar graduated from Harvard and Yale Law School, and received his Ph.D in political science from Stanford.

David Danks

Member

David Danks is L.L. Thurstone Professor of Philosophy & Psychology, and head of the Department of Philosophy, at Carnegie Mellon University (CMU). He is also the chief ethicist of CMU's Block Center for Technology & Society; co-director of CMU's Center for Informed Democracy and Social Cybersecurity (IDeaS); and an adjunct member of the Heinz College of Information Systems and Public Policy, and the Carnegie Mellon Neuroscience Institute. His research interests are at the intersection of philosophy, cognitive science, and machine learning, using ideas, methods, and frameworks from each to advance our understanding of complex, interdisciplinary problems. Danks has examined the ethical, psychological, and policy issues around AI and robotics in transportation, healthcare, privacy, and security. He has also done significant research in computational cognitive science, culminating in his *Unifying the Mind: Cognitive Representations as Graphical Models* (2014, The MIT Press), and he has developed multiple novel causal discovery algorithms for complex types of observational and experimental data. Danks is the recipient of a James S. McDonnell Foundation Scholar Award, as well as an Andrew Carnegie Fellowship. He received an A.B. in Philosophy from Princeton University, and a Ph.D. in Philosophy from University of California, San Diego.

Megan Finn

Member

Megan Finn is an assistant professor at the University of Washington Information School. She published the monograph, *Documenting Aftermath: Information Infrastructures in the Wake of Disasters*, about postearthquake communication practices. Her newer projects examine ethical research practices in the field of computer security, and investigate the implications of novel information policies on a transnational scale. She brings together perspectives and approaches from information studies, science and technology studies, and the history of media, information, and communication. In addition to her research and teaching, she is an advisor for the Science, Technology, & Society Studies Graduate Certificate program, a member of the iSchool's DataLab, and starting in 2019, a core faculty in Data Science Studies at the eScience Institute. Finn has an undergraduate degree in computer science from University of Michigan, completed her Ph.D. at UC Berkeley, and spent time at Microsoft Research New England in Cambridge, MA with the Social Media Collective as a postdoctoral researcher.

Mary L. Gray

Member

Mary L. Gray is senior principal researcher at Microsoft Research and faculty associate at Harvard University's Berkman Klein Center for Internet and Society. She also maintains a faculty position in the School of Informatics, Computing, and Engineering with affiliations in Anthropology and Gender Studies at Indiana University. Mary, an anthropologist and media scholar by training, focuses on how everyday uses of technologies transform people's lives. Gray is the author, with computer scientist Siddharth Suri, of *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass* published by Houghton Mifflin Harcourt in 2019. It was named a Financial Times' Critic's Pick and awarded the McGannon Center for Communication Research Book Prize in 2019. Her other books include *In Your Face: Stories from the Lives of Queer Youth*, *Queering the Countryside: New Directions in Rural Queer Studies*, a 2016 Choice Academic Title co-edited with Colin Johnson and Brian Gilley, and *Out in the Country: Youth, Media, and Queer Visibility in Rural America*, which looked at how young people in rural Southeast Appalachia use media to negotiate their sexual and gender identities, local belonging, and connections to broader, imagined queer communities. Mary received her Ph.D. in Communications for the University of California, San Diego.

John L. Hennessy

Member

John L. Hennessy (NAS/NAE) is the chair of Alphabet, Inc.; professor of Electrical Engineering and Computer Science at Stanford University; and director of Stanford's Knight-Hennessy Scholars Program. Dr. Hennessy served as president of Stanford University from September 2000 until August 2016. Dr. Hennessy, a pioneer in computer architecture, joined Stanford's faculty in 1977 as an assistant professor of electrical engineering. In 1981, he drew together researchers to focus on a technology known as RISC (Reduced Instruction Set Computer), which revolutionized computing by increasing performance while reducing costs. Dr. Hennessy helped transfer this technology to industry cofounding MIPS Computer Systems in 1984. His subsequent research focused on multiprocessor systems, including the DASH and FLASH projects, both of which pioneered concepts now used in industry. He is the co-author (with David Patterson) of two internationally used textbooks in computer architecture. His honors include the 2012 Medal of Honor of the Institute of Electrical and Electronics Engineers, the 2017 ACM Turing Award (jointly with David Patterson), the 2001 Eckert-Mauchly Award of the Association for Computing Machinery, the 2001 Seymour Cray Computer Engineering Award, and the 2004 NEC C&C Prize for lifetime achievement in computer science and engineering. He is an elected member of the National Academy of Engineering, the National Academy of Sciences, the American Academy of Arts and Sciences, the Royal Academy of Engineering, and the American Philosophical Society and has served on number NASEM board and committees. Dr. Hennessy earned a Ph.D. in computer science from Stony Brook University.

Ayanna M. Howard

Member

Ayanna Howard is the Linda J. and Mark C. Smith Professor and Chair of the School of Interactive Computing in the College of Computing at Georgia Institute of Technology. She also holds a faculty appointment in the School of Electrical and Computer Engineering where she functions as the Director of the Human-Automation Systems Lab (HumAnS). In 2015, she founded and now directs the \$3M traineeship initiative in healthcare robotics and functions as the lead investigator on the NSF undergraduate summer research program in robotics. To date, her unique accomplishments have been highlighted through a number of awards and articles, including highlights in TIME Magazine, Black Enterprise, and USA Today, as well as being recognized as one of the 23 most powerful women engineers in the world by Business Insider and one of the Top 50 U.S. Women in Tech by Forbes. In 2013, she also founded Zyrobotics as a university spin-off and holds a position in the company as Chief Technology Officer (CTO). Zyrobotics, LLC is currently licensing technology derived from her research and has released their first suite of mobile therapy and educational products for children with differing needs. From 1993-2005, Dr. Howard was at NASA's Jet Propulsion Laboratory, California Institute of Technology, where she was a senior robotics researcher and deputy manager in the Office of the Chief Scientist. She has also served as the Associate Director of Research for the Georgia Tech Institute for Robotics and Intelligent Machines, Chair of the multidisciplinary Robotics Ph.D. program at Georgia Tech, and the Associate Chair for Faculty Development in the School of Electrical and Computer Engineering. She received her B.S. in Engineering from Brown University, her M.S.E.E. from the University of Southern California, her Ph.D. in Electrical Engineering from the University of Southern California, and her M.B.A. from Claremont University, Drucker School of Management.

Jon M. Kleinberg

Member

Jon Kleinberg, (NAS, NAE), is a professor in both computer science and information science at Cornell University. His research focuses on issues at the interface of networks and information, with an emphasis on the social and information networks that underpin the Web and other on-line media. His work has been supported by an NSF Career Award, an ONR Young Investigator Award, a MacArthur Foundation Fellowship, a Packard Foundation Fellowship, a Sloan Foundation Fellowship, and grants from Google, Yahoo!, and the NSF. He is a member of the National Academy of Sciences, the National Academy of Engineering, and the American Academy of Arts and Sciences. Dr. Kleinberg received a B.S. in computer science from Cornell University in 1993 and a Ph.D., also in computer science, from the Massachusetts Institute of Technology in 1996.

Seth Lazar

Member

Seth Lazar is a professor in the School of Philosophy at the Australia National University, lead investigator on the Australian Research Council grant 'Ethics and Risk', director of a Templeton World Charity Foundation project on 'Moral Skill and Artificial Intelligence', and project leader of the major interdisciplinary research project: Humanising Machine Intelligence. In 2019, he was awarded the ANU Vice Chancellor's award for excellence in research. His first book, *Sparing Civilians* (Oxford, 2015), aims to preserve the protection of civilians in war against political and philosophical threats that have arisen in recent years. A central focus of his early work on the ethics of war was the necessity of taking an approach more grounded in political philosophy than in moral philosophy—the same redirection is necessary for work on the morality, law and politics of data and AI. He has published papers in many top journals, including *Ethics* (2009, 2015, 2017), *Philosophy & Public Affairs* (2010, 2012, 2018), *Australasian Journal of Philosophy* (2015), *Nous* (2017), *Synthese* (2019), *Philosophical Quarterly* (2018), *Philosophical Studies* (2017), *Oxford Studies in Political Philosophy* (2017), and others. Dr. Lazar received his Ph.D. in Political Theory from Oxford University in 2009.

James Manyika

Member

James Manyika is a senior partner at McKinsey & Company and chairman and director of McKinsey Global Institute. At MGI, James has led research on technology, future of work, productivity and economic growth. He published a book on AI and robotics another on the economic trends, and articles and reports. He was appointed vice chair of the Global Development Council at the White House by President Obama and appointed by U.S. Commerce Secretaries to serve on the National Innovation Advisory Board from and the Commerce Department's Digital Economy Board of Advisors. He serves on the boards of Council on Foreign Relations, MacArthur Foundation, Hewlett Foundation, the Broad Institute of MIT and Harvard, and research advisory boards at MIT, Harvard, Oxford and Stanford, including as a member of the steering committee of the 100-year study on Artificial Intelligence. He earned DPhil, MSc and MA degrees in AI and robotics, mathematics and computer science from Oxford as a Rhodes Scholar. He is a fellow of the American Academy of Arts and Sciences, a fellow of the Royal Society of Arts, a Distinguished Fellow of Stanford's AI Institute, a fellow of DeepMind. He was a visiting scientist at NASA Jet Propulsion Labs, and a faculty exchange fellow at MIT. At Oxford, he was a member of the Programming Research Group, the Robotics Research Lab, and elected a research fellow of Balliol College.

James Mickens

Member

James Mickens is the Gordon McKay Professor of Computer Science at Harvard University's John A. Paulson School of Engineering and Applied Sciences. His research focuses on distributed systems, such as large-scale services, and ways to make them more secure. He joined the Distributed Systems group at Microsoft Research in 2009, and Harvard's School of Engineering and Applied Sciences in 2015, where he was awarded tenure in 2019. Dr. Mickens received a Ph.D. in Computer Science and Engineering from the University of Michigan in 2008 and his B.S. degree in Computer Science from the Georgia Institute of Technology in 2001.

Amanda Stent

Member

Amanda Stent is a natural language processing architect at Bloomberg LP. Previously, she was a director of research and principal research scientist at Yahoo Labs, a principal member of technical staff at AT&T Labs - Research, and an associate professor in the Computer Science Department at Stony Brook University. Her research interests center on natural language processing and its applications, in particular topics related to text analytics, discourse, dialog and natural language generation. She is co-editor of the book Natural Language Generation in Interactive Systems (Cambridge University Press), has authored over 90 papers on natural language processing and is co-inventor on over twenty patents and patent applications. She is president emeritus of the ACL/ISCA Special Interest Group on Discourse and Dialog, treasurer of the ACL Special Interest Group on Natural Language Generation and one of the rotating editors of the journal Dialogue & Discourse. She holds a Ph.D. in computer science from the University of Rochester.