

Evidence: An Interdisciplinary Conversation about Knowing and Certainty

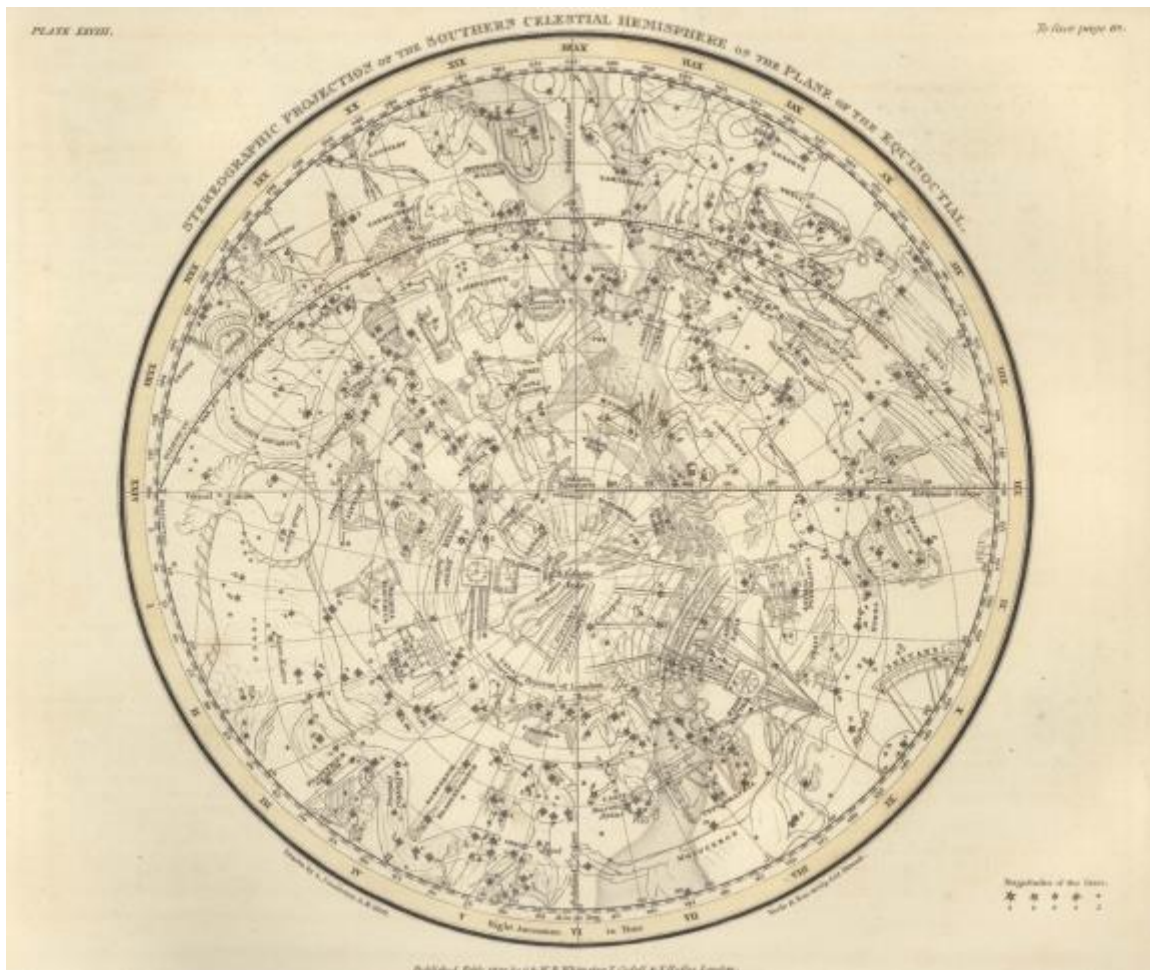
April 21-22, 2017

Columbia Law School, Jerome Greene Hall, Room 103

435 West 116th Street

New York City

Organizers: Pamela Smith (History, Columbia), Stuart Firestein (Biology, Columbia), Jeremy Kessler (Law, Columbia)



Alexander Jamieson, Plate 28, A celestial atlas comprising a systematic display of the heavens in a series of thirty maps illustrated by scientific description of their contents and accompanied by catalogues of the stars and astronomical exercises, (1822: United States Naval Observatory Library)

Sponsored by: The Center for Science and Society (CSS) and the Institute for Social and Economic Research and Policy (ISERP) at Columbia University

Introduction:

The conference will examine the use of evidence – from massive data sets to individual case studies – within and across the disciplines. What counts as evidence in different fields? Why do some disciplines have explicit and broadly-shared norms of evidence gathering and use, while other disciplines are guided by more implicit evidentiary customs? Why do evidentiary norms change over time in a given discipline, and are these changes better explained by internal, theoretical developments or external, social factors? What happens when new theories outpace a discipline’s current evidentiary practices? For instance, the recognition that many accurate descriptions of the universe are not deterministic but rather probabilistic has altered natural scientists’ basic conception about what counts as evidence – and about the sheer quantity of evidence needed to prove or disprove hypotheses. Yet even the most advanced tools for evidence-gathering (statistical, computational, and experimental) have not kept pace with this turn to probabilistic models in the natural sciences. Meanwhile, scholars in the humanities, social sciences, and law are adopting – or transforming – these same tools in an effort to expand the evidence base, rigor of proof, and public appeal of their disciplines (e.g., “big” history, “distant reading,” digital humanities, quantitative sociology, experimental philosophy, law and cognition).

Format:

The conference will bring together academic scholars, public policy makers, non-governmental advocates, and media experts to discuss the state of “evidence” today. In addition to two keynote lectures, the conference will include twelve hour-long panels over the course of two days. Each panel has been organized around two primary speakers, representing a particular discipline or sub-discipline, and two to three panelists with contrasting disciplinary backgrounds. Each of the two primary speakers will offer ten minutes of introductory remarks about evidentiary problems they have encountered in their particular area of expertise, raising practical and theoretical questions about the uses of evidence they have encountered in their own work, and referring to specific case studies. Twenty minutes of discussion among speakers and panelists will follow. After the introductory remarks and panel discussion, the floor will be opened to the audience.

Day 1, Friday, April 21, 2017

Time	Topic	Speakers	Chair	Panelists
8:30-9:00	<i>Breakfast</i>			
9:00-9:15	Welcome	Pamela Smith (History, Columbia) Stuart Firestein (Biology, Columbia) Jeremy Kessler (Law, Columbia)		
9:15-10:45	Reproducibility	Veronica Vieland (Pediatrics and Statistics, Ohio State University) Niall Bolger (Psychology, Columbia) Shai Silberberg (Extramural Research Program, NIH/NINDS)	Hasok Chang (History and Philosophy of Science, Cambridge)	Jeremy Kessler (Law, Columbia) Jennifer Manly (Neurology, Columbia)
10:45-11:00	<i>Break</i>			
11:00-12:00	Regulatory Policy	Wendy Wagner (Law, UT Austin) David Adelman (Law, UT Austin) Naomi Schrag (Office of the Executive Vice President for Research, Columbia)	Jennifer Mnookin (Law, UCLA)	Paul Appelbaum (Psychiatry and Law, Columbia) Frances Champagne (Psychology, Columbia)
12:00-1:00	<i>Lunch</i>			
1:00-2:00	Humanities	Barbara Shapiro (Rhetoric, UC Berkeley, Emerita) Jenny Davidson (English and Comparative Literature, Columbia)	Nick Lemann (Journalism, Columbia)	Stuart Firestein (Biology, Columbia) Jeffrey Fagan (Law, Columbia)
2:00-3:00	Federal Funding	Frances Champagne (Psychology, Columbia) Stuart Firestein (Biology, Columbia) Shai Silberberg (Extramural Research Program, NIH/NINDS)	Matt Connelly (History, Columbia)	Niall Bolger (Psychology, Columbia) Kristin Underhill (Law, Columbia)
3:00-3:30	<i>Break</i>			

Time	Topic	Speakers	Chair	Panelists
3:30-4:30	Medicine and Public Health	Paul Appelbaum (Psychiatry and Law, Columbia) Kristen Underhill (Law, Columbia)	Pamela Smith (History, Columbia)	Kavita Sivaramakrishnan (Sociomedical Sciences, Columbia) Wendy Wagner (Law, UT Austin)
4:30-5:30	Journalism	Meehan Crist (Writer-in-Residence, Biology, Columbia) Nick Lemann (Journalism, Columbia)	Matteo Farinella (Presidential Scholar in Society and Neuroscience, Columbia)	Jenny Davidson (English and Comparative Literature, Columbia) Shai Silberberg (Extramural Research Program, NIH/NINDS)
5:30-6:00	<i>Break</i>			
6:00-7:00	Public Keynote: The Paradox of Evidence: Lessons from the Poker Table	Annie Duke (World Series of Poker Champion, Author, Decision Strategist)	Stuart Firestein (Biology, Columbia)	
7:00-8:00	Reception (304 Jerome Greene Hall)			

Day 2, Saturday April 22, 2017

Time	Topic	Speakers	Chair	Panelists
8:30-9:00	<i>Breakfast</i>			
9:00-10:00	Philosophy	Hasok Chang (History and Philosophy of Science, Cambridge) John Krakauer (Neurology, Johns Hopkins) Christia Mercer (Philosophy, Columbia)	Stuart Firestein (Biology, Columbia)	Dan Kahan (Law and Psychology, Yale) Veronica Vieland (Pediatrics and Statistics, Ohio State University)
10:00-11:00	Law and evidence	Dan Kahan (Law and Psychology, Yale) Jeffrey Fagan (Law, Columbia)	Veronica Vieland (Pediatrics and Statistics, Ohio State University)	Nick Lemann (Journalism, Columbia) Barbara Shapiro (Rhetoric, UC Berkeley, Emerita) Jeremy Kessler (Law, Columbia)
11:00-11:15	<i>Break</i>			
11:15-12:15	Economics	Alessandra Casella (Economics, Columbia) Suresh Naidu (Economics, Columbia)	Niall Bolger (Psychology, Columbia)	Hasok Chang (History and Philosophy of Science, Cambridge) Matt Connelly (History, Columbia)
12:15-2:15	<i>Working lunch</i>			
2:15-3:30	Keynote: Expert evidence, science policy and the law	Jennifer Mnookin (Law, UCLA)	Jeremy Kessler (Law, Columbia)	
3:30-4:30	History/Social Sciences	Kavita Sivaramakrishnan (Sociomedical Sciences, Columbia) Zoe Crossland (Anthropology, Columbia)	John Krakauer (Neurology and Neuroscience, Johns Hopkins)	Pamela Smith (History, Columbia) David Adelman (Law, UT Austin)
4:30-5:30	Big Data	Matt Connelly (History, Columbia) David Madigan (Statistics, Columbia)	Suresh Naidu (Economics, Columbia)	Stuart Firestein (Biology, Columbia) Alessandra Casella (Economics, Columbia)

Conference Participants

David Adelman, Harry Reasoner Regents Chair in Law, University of Texas at Austin

Paul Appelbaum, Elizabeth K. Dollard Professor of Psychiatry, Medicine, and Law, Columbia University

Niall Bolger, Professor of Psychology, Columbia University

Alessandra Casella, Professor of Economics, Columbia University

Frances Champagne, Associate Professor of Psychology, Columbia University

Hasok Chang, Hans Rausing Professor of History and Philosophy of Science, University of Cambridge

Matthew Connelly, Professor of History, Columbia University

Meehan Crist, Writer-in-residence in Biological Sciences, Columbia University

Zoe Crossland, Associate Professor of Anthropology, Columbia University

Jenny Davidson, Professor of English and Comparative Literature, Columbia University

Annie Duke, World Series of Poker Champion, Author, Decision Strategist

Jeffrey Fagan, Isidor and Seville Sulzbacher Professor of Law, Columbia University

Stuart Firestein, Professor of Biological Sciences, Columbia University

Dan Kahan, Elizabeth K. Dollard Professor of Law and Professor of Psychology, Yale University

Jeremy Kessler, Associate Professor of Law, Columbia University

John Krakauer, John C. Malone Professor of Neurology and Neuroscience, Johns Hopkins University

Nicholas Lemann, Joseph Pulitzer II and Edith Pulitzer Moore Professor of Journalism, Columbia University

David Madigan, Executive Vice President and Dean of Faculty of Arts and Sciences, Professor of Statistics, Columbia University

Jennifer Manly, Associate Professor of Neurology, Columbia University

Christia Mercer, Gustave M. Berne Professor of Philosophy, Columbia University

Jennifer Mnookin, Dean & David G. Price and Dallas P. Price Professor of Law, University of California, Los Angeles

Suresh Naidu, Professor of Economics, Columbia University

Naomi Schrag, Associate Vice President for Research Compliance, Columbia University

Barbara Shapiro, Emerita Professor of Rhetoric, University of California, Berkeley

Shai Silberberg, Director of Research Quality, Extramural Research Program, National Institute of Neurological Disorders and Stroke (NINDS), NIH

Kavita Sivaramakrishnan, Assistant Professor of Sociomedical Sciences, Columbia University

Pamela Smith, Seth Low Professor of History, Columbia University

Kristen Underhill, Associate Professor of Law, Columbia University

Veronica Vieland, Battelle Professor of Quantitative and Computational Biology, The Research Institute at Nationwide Children's Hospital and the Ohio State University

Wendy Wagner, Joe A. Worsham Centennial Professor, University of Texas at Austin

PARTICIPANT BIOS

David Adelman

Harry Reasoner Regents Chair in Law, University of Texas at Austin

David E. Adelman holds the Harry Reasoner Regents Chair in Law at the University of Texas School of Law. He teaches and writes in the areas of environmental law, intellectual property law, and law & science. Professor Adelman's research focuses on the many interfaces between law, science, and innovation. His articles have addressed such topics as the tensions between legal and scientific evidentiary standards in regulatory decision making, development of effective policies for promoting innovation relevant to addressing climate change, and more recently empirical studies of clean air regulations and environmental litigation. Professor Adelman received a B.A. from Reed College, a Ph.D. in chemistry from Stanford University, and a J.D. from Stanford Law School. Following law school, he clerked for the Honorable Samuel Conti of the United States District Court for the Northern District of California. Prior to entering academia, Professor Adelman was a Senior Attorney with the Natural Resources Defense Council and an associate with the law firm Covington & Burling in Washington, D.C.

Paul Appelbaum

Elizabeth K. Dollard Professor of Psychiatry, Medicine, and Law, Columbia University

Paul S. Appelbaum, MD, is the Elizabeth K. Dollard Professor of Psychiatry, Medicine, and Law, and Director, Division of Law, Ethics, and Psychiatry, Department of Psychiatry, College of Physicians and Surgeons of Columbia University. He directs Columbia's Center for Research on Ethical, Legal, and Social Implications of Psychiatric, Neurologic, and Behavioral Genetics, and heads the Ethics Resource for the Irving Institute for Clinical and Translational Research, Columbia's CTSA program. He is the author of many articles and books on law and ethics in clinical practice and research. Dr. Appelbaum is a Past President of the American Psychiatric Association (APA) and the American Academy of Psychiatry and the Law, and twice served as Chair of the Council on Psychiatry and Law and of the Committee on Judicial Action for APA. He now chairs APA's DSM Steering Committee. Dr. Appelbaum has been elected to the National Academy of Medicine. He is a graduate of Columbia College, received his M.D. from Harvard Medical School, and completed his residency in psychiatry at the Massachusetts Mental Health Center/Harvard Medical School in Boston.

Niall Bolger

Professor of Psychology, Columbia University

Niall Bolger, PhD, is Professor of Psychology and former Chairperson of the Department of Psychology at Columbia University. He teaches a graduate statistics sequence on linear and mixed models as tools for psychological research. He also teaches an undergraduate research methods class and a graduate class on psychophysiological methods and analysis. His main research interests include the study of adjustment processes in close relationships using intensive longitudinal methods; laboratory-based studies of dyadic behavior, emotion and physiology; and personality processes as they are revealed in patterns of behavior, emotion, and physiology in daily life. He is also interested in statistical methods for analyzing longitudinal and multilevel data, and was co-author with J-P Laurenceau of *Intensive*

Longitudinal Methods (Guilford, 2013). Dr. Bolger is a Charter Member and Fellow of the Association for Psychological Science (APS), was admitted to membership in the Society for Multivariate Experimental Psychology (SMEP), and is a Fellow of the Society of Experimental Social Psychology (SESP) and of the Society for Personality and Social Psychology (SESP). He has served on National Institutes of Health and National Science Foundation grant review panels, and as Associate Editor of the *Journal of Personality and Social Psychology: Interpersonal Relations and Group Processes* (JPSP:IRGP).

Alessandra Casella

Professor of Economics, Columbia University

Alessandra Casella is professor of Economics and professor of Political Science at Columbia University and a fellow of the National Bureau of Economic Research (Cambridge, MA), and the Center for Economic Policy Research (London, UK). She is a graduate of Università Bocconi and received her PhD in Economics from MIT in 1989, taught at UC Berkeley before moving to Columbia in 1993, and held the position of Directeur d' Etudes at the Ecole des Hautes Etudes in Sciences Sociales (EHESS) (Paris and Marseilles) from 1996 to 2010. Her main research interests are political economy, public economics, and international economics. Casella has been the recipient of numerous fellowships: she has been a Guggenheim fellow, a member of the Institute of Advanced Studies in Princeton, a Russell Sage fellow and a Straus fellow at the NYU Law School. Her articles have appeared in leading economic journals—*American Economic Review*, *Journal of Political Economy*, *Review of Economic Studies*—and her book *Storable Votes. Protecting the Minority Voice* was published by Oxford University Press in 2012. Casella is the director of the Columbia Experimental Laboratory for the Social Sciences.

Frances Champagne

Associate Professor of Psychology, Columbia University

Frances A. Champagne, PhD, is an Associate Professor and Vice Chair in the Department of Psychology at Columbia University, a faculty member of the Columbia Population Research Center (CPRC), a Sackler Scientist within the Sackler Institute for Developmental Psychobiology, a mentoring faculty for the Doctoral Program in Neurobiology and Behavior, and steering committee member for the Columbia Center for Research on Ethical, Legal & Social Implications of Psychiatric, Neurologic & Behavioral Genetics and the Columbia Center for Integrative Animal Behavior. Dr. Champagne is a world leader within the evolving field of behavioral epigenetics – the study of how life experiences lead to behavioral and neurobiological variation through epigenetic factors. In 2007, Dr. Champagne received an NIH Director's New Innovator Award and is currently funded by the NIMH, NIEHS, and EPA. Champagne also teaches a variety of undergraduate/graduate courses, including: "The Developing Brain", "Inheritance", "Neurobiology of Reproductive Behavior" and "Ethics, Genetics and the Brain". Champagne obtained her M.Sc. in Psychiatry and a Ph.D. in Neuroscience, followed by a post-doctoral fellowship at the University of Cambridge, UK.

Hasok Chang

Hans Rausing Professor of History and Philosophy of Science, University of Cambridge

Hasok Chang is the Hans Rausing Professor of History and Philosophy of Science at the University of Cambridge. Previously he taught for 15 years at University College London, after receiving his PhD in Philosophy at Stanford University following an undergraduate degree at the California Institute of Technology. He is the author of *Is Water H₂O? Evidence, Realism and Pluralism* (Springer, 2012), winner of the 2013 Fernando Gil International Prize, and *Inventing Temperature: Measurement and Scientific Progress* (Oxford University Press, 2004), joint winner of the 2006 Lakatos Award. He is also co-editor (with Catherine Jackson) of *An Element of Controversy: The Life of Chlorine in Science, Medicine, Technology and War* (British Society for the History of Science, 2007), a collection of original work by undergraduate students at University College London. He is a co-founder of the Society for Philosophy of Science in Practice (SPSP), and the Committee for Integrated History and Philosophy of Science. He has recently been the President of the British Society for the History of Science.

Matthew Connelly

Professor of History, Columbia University

Matthew Connelly, Professor of History, specializes in 20th century world politics, with publications on the history of transnational insurgencies, global social movements, and intelligence estimates and war planning. Like many historians of U.S. foreign relations, he has spent years working in declassified documents and interviewing former government officials. Unlike most historians, he also works with data scientists to amass virtual archives and explore them through natural language processing and machine learning. He is the principal investigator of History Lab, an NSF-funded project which aims to make out the broad patterns of official secrecy and provide government officials with tools to automate and accelerate the declassification process. He received his BA from Columbia (1990) and his PhD from Yale (1998).

Meehan Crist

Writer-in-Residence in Biological Sciences, Columbia University

Meehan Crist is writer-in-residence in Biological Sciences at Columbia University. Previously she was editor-at-large at *Nautilus* and reviews editor at the *Believer*. Her work has appeared in publications such as the *New York Times*, the *Los Angeles Times*, *Lapham's Quarterly*, *Tin House*, *New Republic*, *Nautilus*, the *Believer*, *Bookforum*, *Scientific American*, and *Science*. Awards include the 2015 Rona Jaffe Foundation Writer's Award, the 2016 AOA Award for excellence in Health Journalism, the Olive B. O'Connor Fellowship and fellowships from MacDowell, The Blue Mountain Center, Ucross, and Yaddo.

Jenny Davidson

Professor of English and Comparative Literature, Columbia University

Jenny Davidson received her AB from Harvard-Radcliffe (1993) and her PhD from Yale (1999). She writes about eighteenth-century literature and culture; other interests include British cultural and intellectual

history and the contemporary novel in English. She is the author of four novels, *Heredity* (2003), *The Explosionist* (2008), *Invisible Things* (2010), and *The Magic Circle* (2013); and three books of literary criticism, *Hypocrisy and the Politics of Politeness: Manners and Morals from Locke to Austen* (Cambridge, 2004), *Breeding: A Partial History of the Eighteenth Century* (Columbia, 2009), and *Reading Style: A Life in Sentences* (Columbia, 2014). Forthcoming from Cambridge is *Reading Jane Austen*. She is currently working on a new book about the Enlightenment historian Edward Gibbon. Honors include a Lenfest Distinguished Teaching Award (2005), a Guggenheim Fellowship (2005-2006) and the Mark Van Doren Teaching Award (2010). In 2016-2017 she was the Oliver Smithies Visiting Lecturer at Balliol College and held the Columbia/Sovern Affiliated Fellowship at the American Academy in Rome.

Annie Duke – KEYNOTE SPEAKER

World Series of Poker Champion, Author, Decision Strategist

Annie Duke is an experienced corporate speaker and consultant on the behavior of decision making. As a former professional poker player, she won more than \$4 million in tournament poker. She has won a World Series of Poker bracelet, the World Series of Poker Tournament of Champions, and the NBC National Poker Heads-Up Championship. She has written four books (with a fifth on the way, about learning and decision making), raised four children, raised \$18 million for charities, and navigated on-screen dramas with Donald Trump and Joan Rivers while setting fundraising records on *Celebrity Apprentice*. Annie is a cofounder of HowIDecide.org and a member of the National Board of After-School All-Stars. She recently joined the board of directors of the Franklin Institute, one of America's oldest and greatest museums, an honor and responsibility her four-year-old self would have loved but never imagined possible. She has also won a televised championship in rock-paper-scissors.

Jeffrey Fagan

Isidor and Seville Sulzbacher Professor of Law, Columbia University

Jeffrey Fagan is the Isidor and Seville Sulzbacher Professor of Law at Columbia Law School and Professor of Epidemiology at the Mailman School of Public Health at Columbia University. He also a Senior Research Scholar at Yale Law School. His research and scholarship examines policing, the legitimacy of the criminal law, capital punishment, legal socialization of adolescents, neighborhoods and crime, and juvenile crime and punishment. He served on the Committee on Law and Justice of the National Academy of Science from 2000-2006. From 1996-2006, he was a member of the MacArthur Foundation's Research Network on Adolescent Development and Juvenile Justice. He was a member of the 2004 National Research Council panel that examined policing in the U.S. He is a Fellow of the American Society of Criminology, and served on its Executive Board for three years. He is past Editor of the *Journal of Research in Crime and Delinquency*, and serves on the editorial boards of several journals in criminology and law. He currently is a consultant and expert witness on capital punishment to the UN Office of the High Commissioner for Human Rights.

Stuart Firestein

Professor of Biological Sciences, Columbia University

Stuart Firestein is former Chair of Columbia University's Department of Biological Sciences where his colleagues and he study the vertebrate olfactory system, possibly the best chemical detector on the face of the planet. His laboratory seeks to answer the fundamental human question: How do I smell? Dedicated to promoting the accessibility of science to a public audience, Dr. Firestein seeks to reach broader audiences through nonscientific writing, public appearances, and his support of science in the arts. Dr. Firestein also serves as an advisor for the Alfred P. Sloan Foundation's program for the Public Understanding of Science. He was awarded the 2011 Lenfest Distinguished Columbia Faculty Award for excellence in scholarship and teaching. His book on the workings of science for a general audience, *Ignorance: How it Drives Science*, was released by Oxford University Press in the spring of 2012. The book captures the hard work of science, the informed curiosity found among scientists, and the exhilaration of discovery. Dr. Firestein's second book, *Failure: Why Science is So Successful*, was published by Oxford in 2015.

Dan Kahan

Elizabeth K. Dollard Professor of Law and Professor of Psychology, Yale University

Dan Kahan is the Elizabeth K. Dollard Professor of Law at Yale Law School. He is a member of the Cultural Cognition Project (<http://www.culturalcognition.net/>), an interdisciplinary team of scholars who use empirical methods to examine the impact of group values on perceptions of risk and related facts. In studies funded by the National Science Foundation, the Project has investigated public disagreement over climate change, public reactions to emerging technologies, and conflicting public impressions of scientific consensus. The Project's research has been featured in articles published in a variety of peer-reviewed scholarly journals including the *Journal of Empirical Legal Studies*, the *Journal of Risk Research*, *Nature Nanotechnology*, and *Nature*.

Jeremy Kessler

Associate Professor of Law, Columbia University

Jeremy K. Kessler, Associate Professor of Law and Milton Handler Fellow at Columbia Law School, is a legal historian whose scholarship focuses on First Amendment law, administrative law, and constitutional law generally. His forthcoming book, *Fortress of Liberty: The Rise and Fall of the Draft and the Remaking of American Law* (Harvard) explores how the contested development of the military draft transformed the relationship between civil liberties law and the American administrative state. Kessler's articles on First Amendment law, administrative law, legal history, and constitutional theory have appeared or are forthcoming in the *Harvard Law Review*, the *Columbia Law Review*, the *University of Chicago Law Review*, and the *Texas Law Review*, among other publications. He serves on the ABA's Committee on the History of Administrative Law, and is co-director of Columbia University's 20th Century Politics and Society Workshop and Columbia Law School's Legal History Workshop.

John Krakauer

John C. Malone Professor of Neurology and Neuroscience, Johns Hopkins University

Dr. Krakauer is John C. Malone Professor, Professor of Neurology, Neuroscience, and Professor of Physical Medicine and Rehabilitation. He is Co-Director of the Brain, Learning, Animation, and Movement Lab, and Co-Director of the creative engineering Hopkins-based project KATA. In addition, Dr. Krakauer is co-founder of the video gaming company Max and Haley. He received his BA from Cambridge University, and his MD from Columbia University College of Physicians and Surgeons. He completed his internship in Internal Medicine at The Johns Hopkins Hospital and his residency in neurology at The Neurological Institute of New York at Columbia University. He subsequently completed a research fellowship in motor control at Columbia's Center for Neurobiology and Behavior and a clinical fellowship in stroke at the Neurological Institute at Columbia University Medical Center. Dr. Krakauer is nationally and internationally recognized for his study of the human motor system in health and disease. His scientific achievements to date include bringing a motor learning paradigm called visuomotor rotation into the neuroscience mainstream, discovering the proportional recovery rule for stroke, characterizing a sensitive period of heightened plasticity after stroke, developing new conceptions of motor skill, and coming up with the notion of implicit motor motivation. Dr. Krakauer is also very interested in the interface between neuroscience and the areas of philosophy, sport, and art. In the case of philosophy, he has co-written papers on the notion of motor skill and its relation to the rest of cognition. He has also written about the brains of elite athletes and is frequently interviewed by the media on this topic.

Nicholas Lemann

Joseph Pulitzer II and Edith Pulitzer Moore Professor of Journalism, Columbia University

Nicholas Lemann is the Pulitzer-Moore Professor of Journalism at Columbia, and former Dean of the Graduate School of Journalism. He has worked at the *Washington Monthly*, as an associate editor and then managing editor; at *Texas Monthly*, as an associate editor and then executive editor; at *The Washington Post*, as a member of the national staff; at *The Atlantic Monthly*, as national correspondent, for sixteen years; and, since 1999, at *The New Yorker*, as Washington correspondent and as a staff writer. On September 1, 2003, he became Dean of the Graduate School of Journalism at Columbia University. He stepped down as dean in 2013, following two five-year terms. He also directs a new project at the university called Columbia Global Reports, which publishes six book-length works of journalism a year on aspects of globalization. He has published five books, most recently *Redemption: The Last Battle of the Civil War* (2006) and written widely for such publications as *The New York Times*, *The New York Review of Books*, *The New Republic*, and *Slate*. Lemann has served on the boards of the Authors Guild, the National Academy of Sciences' Division of Behavioral and Social Sciences and Education, the Academy of Political Science, the Society of American Historians, the Thomson Reuters Founders Share Company, the University of Michigan School of Education, and the Russell Sage Foundation, and is a member of the New York Institute for the Humanities. He was elected a fellow of the American Academy of Arts and Sciences in April 2010.

David Madigan

Executive Vice President and Dean of Faculty of Arts and Sciences, Professor of Statistics, Columbia University

David Madigan serves as the ninth Executive Vice President for the Arts and Sciences and Dean of the Faculty, a position he assumed on September 3, 2013. Since March 2013, he had served as the interim Executive Vice President. He is a professor of statistics at Columbia University, and served as the department chair from 2007 to 2013. Before coming to Columbia in 2007, Professor Madigan was Dean of Physical and Mathematical Sciences at Rutgers University. He is a Fellow of the American Statistical Association, the Institute of Mathematical Statistics, and the American Association for the Advancement of Science. He received a bachelor's degree in Mathematical Sciences and a PhD in Statistics, both from Trinity College Dublin. He has previously worked for AT&T Inc., Soliloquy Inc., the University of Washington, Rutgers University, and SkillSoft, Inc. He has over 150 publications in such areas as Bayesian statistics, text mining, Monte Carlo methods, pharmacovigilance and probabilistic graphical models.

Jennifer Manly

Associate Professor of Neurology, Columbia University

Jennifer J. Manly, PhD, is an Associate Professor of Neuropsychology in Neurology at the G.H. Sergievsky Center and the Taub Institute for Research in Aging and Alzheimer's disease at Columbia University. She completed her graduate training in neuropsychology at the San Diego State University / University of California at San Diego Joint Doctoral Program in Clinical Psychology, a clinical internship at Brown University, and a postdoctoral fellowship at Columbia University. Her research on early life determinants of cognitive aging, and social and biological risks for cognitive impairment among racially and ethnically diverse middle aged and older adults has been funded by the National Institute on Aging and the Alzheimer's Association. She has authored over 175 peer-reviewed publications and 9 chapters. Dr. Manly has served the American Psychological Association Division 40 (Society for Clinical Neuropsychology) and the International Neuropsychological Society in several leadership roles. She received Early Career Awards from both Division 40 of the American Psychological Association and from the National Academy of Neuropsychology, was the 2014 recipient of the Tony Wong Diversity Award for Outstanding Mentorship, and is a Fellow of APA. She served on the US Department of Health and Human Services Advisory Council on Alzheimer's Research, Care and Services from 2011 – 2015, and is a current member of the Alzheimer's Association Medical & Scientific Research Board.

Christia Mercer

Gustave M. Berne Professor of Philosophy, Columbia University

Christia Mercer is the Gustave M. Berne Professor of Philosophy at Columbia University. She received her PhD from Princeton University (1989). The author of *Leibniz's Metaphysics: Its Origins and Development* (CUP, 2001), she now works on late medieval and early modern women. She is the general editor of *Oxford Philosophical Concepts*, and co-editor of *Oxford New Histories of Philosophy*, a book series devoted to making philosophy more inclusive. Professor Mercer has become increasingly involved in activist causes with special interest in rethinking criminal justice and access to higher education. She was the first professor to teach in prison as part of Columbia University's Justice-in-Education Initiative

and publishes regularly on the need to make higher education more widely available and on justice reform. Among other awards, she is the recipient of Guggenheim, ACLS and Humboldt Fellowships. She has been honored with Columbia's two most prestigious teaching awards, the 2008 Columbia College Great Teacher Award, and the 2012 Mark van Doren Award, which annually recognizes a professor for "commitment to undergraduate instruction, as well as for humanity, devotion to truth and inspiring leadership."

Jennifer Mnookin – KEYNOTE SPEAKER

Dean & David G. Price and Dallas P. Price Professor of Law, University of California, Los Angeles

Jennifer L. Mnookin, David G. Price and Dallas P. Price Professor of Law, became dean of the UCLA School of Law in August 2015. A member of the UCLA Law faculty since 2005, she served as Vice Dean for Faculty and Research from 2007 to 2009, and Vice Dean for Faculty Recruitment and Intellectual Life in 2012-13. A leading evidence scholar, Dean Mnookin is founder and faculty co-director of PULSE @ UCLA Law (the Program on Understanding Law, Science & Evidence). She is a co-author of two major evidence treatises, *The New Wigmore, A Treatise on Evidence: Expert Evidence* and *Modern Scientific Evidence: The Law and Science of Expert Testimony*. She has published extensively on issues relating to forensic science, including latent fingerprint identification, handwriting expertise and DNA evidence, and has advocated for the need for a "research culture" in these areas. Dean Mnookin is also known for her scholarship on expert evidence, evidence theory, the Confrontation Clause, and visual and photographic evidence. Dean Mnookin is a member of the National Academy of Sciences' Committee on Science, Technology and Law. She co-chaired a group of senior advisors for a President's Council of Advisors on Science and Technology report on use of forensic science in criminal courts; and is on the steering committee of the Association of American Law Schools' Deans Forum. She was elected to the American Law Institute in 2011. Prior to joining UCLA Law, Dean Mnookin was professor of law and Barron F. Black Research Professor at the University of Virginia School of Law, and visiting professor of law at Harvard Law School. She received her A.B. from Harvard University, her J.D. from Yale Law School, and a Ph.D. in History and Social Study of Science and Technology from M.I.T.

Suresh Naidu

Associate Professor of Economics, Columbia University

Suresh Naidu is Associate Professor of Economics and Public Affairs. He works on political economy of democratic transitions, economic history of labor markets, and development economics, particularly migration.

Naomi Schrag

Associate Vice President for Research Compliance, Columbia University

Naomi Schrag is the Associate Vice President for Research Compliance and Training in the Office of the Executive Vice President for Research, and the University's Research Integrity Officer (RIO). She oversees work on issues such as research misconduct, conflict of interest, export controls and international research compliance, and collaborates closely with other offices across the University to develop integrated approaches to compliance and training. Before joining Columbia in January 2006, Ms. Schrag

practiced law for nine years, focusing on regulatory compliance and litigation involving biomedical research, with clients including pharmaceutical companies and not-for-profit organizations. Ms. Schrag also clerked in the Court of Appeals for the Second Circuit. Ms. Schrag graduated from New York University School of Law in 1995. Before entering law school, she worked on an oral history of the Holocaust for the Museum of Jewish Heritage.

Barbara Shapiro

Emerita Professor of Rhetoric, University of California, Berkeley

Barbara Shapiro has researched and written extensively about English intellectual and cultural history, legal and political discourse, and legal reform from 1500-1700. Her books include *Probability and Certainty in Seventeenth Century England: A Study of the Relationships between Science Religion, History, Law and Literature* (Princeton, 1983); *'Beyond Reasonable Doubt' and 'Probable Cause: Historical Perspectives on the Anglo-American Law of Evidence* (University of California, 1991); *A Culture of Fact: England 1550-1720* (Cornell, 2000), *Political Communication and Political Culture: England 1558-1688* (Stanford, 2012). Among her recent articles are "Presumption and Circumstantial Evidence in the Anglo-American Legal System," in the *Law of Presumptions: Essays in Comparative Legal History*, (2009) "Oaths, Credibility and the Legal Process in Early Modern England," *Law and Humanities*, (2012 & 2013) "Beyond Reasonable Doubt: The Neglected Eighteenth Century Context," *Law and Humanities*, (2014) and "The Restoration Chapter in the History of Law Reform" *Law and Humanities*, (2015).

Shai Silberberg

Director of Research Quality, Extramural Research Program, National Institute of Neurological Disorders and Stroke (NINDS), NIH

Dr. Shai D. Silberberg is the Director of Research Quality at the NIH National Institute of Neurological Disorders and Stroke (NINDS) leading the Institute efforts to increase the excellence of science and the completeness of research reporting. In addition, Dr. Silberberg is a Program Director in the Channels Synapses and Circuits cluster at NINDS with a focus on the molecular structure, function, and regulation of ion channels and transporters as well as an Adjunct Investigator in the Intramural Research Program of NINDS studying the molecular mechanism of action of ATP-gated receptor channels (P2X receptors). Dr. Silberberg obtained a Ph.D. in Neurophysiology from the Hebrew University in Jerusalem. Prior to joining NINDS, Dr. Silberberg was an Associate Professor at Ben-Gurion University of the Negev in Israel, investigating the biophysical functions and physiological roles of various ion channels.

Kavita Sivaramakrishnan

Assistant Professor of Sociomedical Sciences, Columbia University

Kavita Sivaramakrishnan is an Assistant Professor of Sociomedical Sciences at the Mailman School of Public Health, Columbia University. She has been trained in history, political theory and in population health at Trinity College, Cambridge University, the Jawaharlal Nehru University and at the Center for Population and Development Studies at Harvard University, and was awarded a Balzan award to work with Sir Michael Marmot, a leading social epidemiologist at the University College London. She has also worked for several years at the Public Health Foundation of India, New Delhi. She has published a book

on Ayurvedic medicine and its revival in late colonial Punjab in India titled, *Old Potions, New Bottles* (2006) and on the politics of epidemics in India. Her current interests are focused on histories of medicine and science in post-colonial South Asia, and she has been researching and publishing work on the politics of global health, on comparative histories of chronic disease in Asia and Africa and the making of knowledge and expertise on global population aging. Her book, *Coming of Age: Experts and the Global Science and Politics of Aging* is currently in preparation. At Columbia University, she is on the board of the Society of Fellows and on Executive Committee of the Institute for African Studies, and the steering committee of the Center for Science and Society and she leads the Arthur D. Vislitzear History of Public Health Prize committee at the Mailman School (affiliated with the Medical Section of the American Public Health Association). She is also on the editorial board of the Global Histories of Health and Disease series published by Cambridge University Press, of the journal *Bulletin of the History of Medicine* and book reviews editor for the journal, *Global Public Health*.

Kristen Underhill

Associate Professor of Law, Columbia University

Kristen Underhill is an Associate Professor of Law at Columbia Law School. Her scholarship focuses on health law, with a particular interest in how the law influences individual decisions about risk and health behavior. Kristen received her JD from Yale Law School in 2011, where she was Editor-in-Chief of the *Yale Journal of Health Policy, Law and Ethics*. Prior to law school, Kristen completed a DPhil in evidence-based social intervention from the University of Oxford, where she focused on behavioral HIV prevention. She has also completed an NIH-funded postdoctoral research fellowship at Brown University's Center for Alcohol and Addiction Studies. Underhill studies how laws and regulations affect individual choices by arranging incentives, shaping opportunities, influencing underlying preferences, and communicating information about social norms. Recent projects have focused on how financial incentives influence attitudes about organ donation; the influence of implicit racial bias in altruistic decisions; dispute resolution for injuries and complaints related to biomedical research; and relationships between harm reduction and risk behavior. She is also currently completing a five-year study of access to new HIV prevention technologies, funded by the NIH. Her past public health work has included scholarship on abstinence-based HIV prevention, sex work and HIV risk, experiences of health care discrimination and medical mistrust, HIV prevention among youth and adults with criminal justice involvement, and access to prevention services among sexual minority populations."

Veronica Vieland

Battelle Professor of Quantitative and Computational Biology, The Research Institute at Nationwide Children's Hospital and the Ohio State University

Veronica J. Vieland holds the Battelle Endowed Chair in Quantitative and Computational Biology at The Research Institute at Nationwide Children's Hospital in Columbus, Ohio, where she serves as the Vice President for Computational Research and as Director of the Battelle Center for Mathematical Medicine. She is also a Professor in the Departments of Pediatrics and Statistics at The Ohio State University. Dr. Vieland trained at Columbia University, receiving her BA (Barnard College, 1979) and Ph.D. (1986) in Philosophy with specialization in mathematical logic and the philosophy of science. She also completed an MS in Biostatistics (1988) and a Postdoctoral Fellowship in the Columbia Department of Child Psychiatry (1988-1990). Dr. Vieland has worked since 1990 in the field of statistical genetics. Her research focuses on the measurement of statistical evidence from mathematical and philosophical

perspectives, with a particular focus on evidence measurement in human genetics and genomics. She has been the recipient of two NIH Career Development Awards and she is an elected fellow of the American Psychopathological Association and the American Association for the Advancement of Science.

Wendy Wagner

Joe A. Worsham Centennial Professor, University of Texas at Austin

Wendy Wagner is the Joe A. Worsham Centennial Professor at the University of Texas School of Law. She earned her law and masters (environmental studies) degrees from Yale Law School, clerked for the Honorable Albert Engle of the U.S. Sixth Circuit Court of Appeals, and served as an honors attorney in the environmental enforcement section of the Department of Justice before joining academia in 1992. Wagner's research focuses on the intersection of law and science, with particular attention to environmental policy. She has authored two books and dozens of articles on the general topic of regulatory science, including *Bending Science* (Harvard, 2008), with colleague Tom McGarity. In addition to her work on science-policy, Wagner is engaged in an ongoing empirical study of the administrative process with grant support from the National Science Foundation. Outside of her academic duties, Wagner has served on several National Academies of Science committees, the Bipartisan Policy Center Committee on Regulatory Science, and as a consultant to the Administrative Conference of the U.S. (ACUS) on a study of the agencies' use of science. Wagner has also served on the governing councils of the ABA Administrative Law Section, the National Conference of Scientists and Lawyers, and the Society for Risk Analysis. Wagner is a member scholar of the Center for Progressive Reform.

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