

Bio Book of Participants

Learning Health System Workshop

Sponsored by the National Science Foundation

The Washington Marriott

Washington, DC

April 11-12, 2013



Jesse Berlin

Johnson & Johnson
JBerlin@its.jnj.com

After spending 15 years as a faculty member at the University of Pennsylvania, in the Center for Clinical Epidemiology and Biostatistics, under the direction of Dr. Brian Strom, Jesse left Penn to join Janssen Research & Development, where he is currently Vice President of Epidemiology. He has authored or coauthored over 230 publications in a wide variety of clinical and methodological areas, including papers on the study of meta-analytic methods as applied to both randomized trials and epidemiology.

He served on an Institute of Medicine Committee that developed recently-released recommendations for the use of systematic reviews in clinical effectiveness research, and currently serves on the Scientific Advisory Committee to the Observational Medical Outcomes Partnership, a public-private partnership aimed at understanding methodology for assessing drug safety in large, administrative databases.

He serves as a member of working group X for CIOMS (The Council for International Organizations of Medical Sciences), which is developing guidelines for meta-analysis of drug safety data in the regulatory context. He is also a fellow of the American Statistical Association.



Elisa Bertino

Purdue University
bertino@cs.purdue.edu

Elisa Bertino is professor of computer science at Purdue University, and serves as Director of Purdue Cyber Center and Research Director of the Center for Information and Research in Information Assurance and Security (CERIAS). Prior to joining Purdue in 2004, she was a professor and department head at the Department of Computer Science and Communication of the University of Milan.

She has been a visiting researcher at the IBM Research Laboratory (now Almaden) in San Jose, at the Microelectronics and Computer Technology Corporation, at Rutgers University, at Telcordia Technologies.

Her recent research focuses on database security, digital identity management, policy systems, and security for web services. She is a Fellow of ACM and of IEEE. She received the IEEE Computer Society 2002 Technical Achievement Award and the IEEE Computer Society 2005 Kanai Award. She is a member of the editorial board of IEEE Transactions on Dependable and Secure Computing, and IEEE Security & Privacy. She is currently serving as chair of the ACM Special Interest Group on Security, Audit and Control (ACM SIGSAC).



Phillip Bourne

University of California, San Diego
pbourne@ucsd.edu

Philip E. Bourne PhD is Associate Vice Chancellor for Innovation and Industrial Alliances, a Professor in the Department of Pharmacology and Skaggs School of Pharmacy and Pharmaceutical Sciences at the University of California San Diego, Associate Director of the RCSB Protein Data Bank and an Adjunct Professor at the Sanford Burnham Institute.

Bourne's professional interests focus on relevant biological and educational outcomes derived from computation and scholarly communication. This implies algorithms, text mining, machine learning, metalanguages, biological databases, and visualization applied to problems in systems pharmacology, evolution, cell signaling, apoptosis, immunology and scientific dissemination. He has published over 300 papers and 5 books, one of which sold over 150,000 copies.

Bourne is committed to maximizing the societal benefit derived from university research. He has co-founded 4 companies: ViSoft Inc., Protein Vision Inc., a company distributing independent films for free and most recently SciVee.

Bourne is a Past President of the International Society for Computational Biology, an elected fellow of the American Association for the Advancement of Science (AAAS), the International Society for Computational Biology (ISCB) and the American Medical Informatics Association (AMIA).

Personal interests are hiking, flying and motor bikes.



Jeffrey Brown

Harvard Medical School &
Harvard Pilgrim Health Care
Institute
jeff_brown@harvardpilgrim.org

Dr. Brown is an Assistant Professor in the Department of Population Medicine (DPM) at Harvard Medical School and the Harvard Pilgrim Health Care Institute. He is Research Director of the Therapeutics Research and Infectious Disease program at DPM and Director of Scientific Operations for the FDA's Mini-Sentinel project.

Dr. Brown is a health services researcher with expertise in pharmacoepidemiology and drug safety, with primary research activities involving the development of new methodologies and techniques to facilitate multi-institutional drug and vaccine safety surveillance using automated healthcare administrative and claims data, including the application of sequential analytic and data mining methodologies. Dr. Brown is the lead architect of PopMedNet, an open-source software platform that facilitates the creation and operation large-scale distributed health data networks. He is co-chair of the Informatics Core of the NCI Cancer Research Network and of the EHR Core of the NIH Health Care System Research Collaboratory.

Dr. Brown holds a Master's degree in Economics from Tufts University and a PhD in Social Policy from Brandeis University. Jeff is a 7-time national champion and 3-time world champion in Ultimate Frisbee.



Melinda Buntin

Congressional Budget Office
mbbuntin@gmail.com

Melinda Buntin is Deputy Assistant Director for Health at Congressional Budget Office, where she is responsible for managing and directing studies of health care and health care financing issues in the Health, Retirement, and Long-term analysis Division. CBO analyzes health issues and policies that affect the federal budget, including Medicare, Medicaid, subsidies for the purchase of private insurance, public health, and private health insurance markets.

Dr. Buntin was previously deputy director of RAND Health's Economics, Financing, and Organization Program, director of Public Sector Initiatives for RAND Health, and co-director of the Bing Center for Health Economics. Her research at RAND focused on insurance benefit design, health insurance markets, provider payment, and the care use and needs of the elderly.

More recently, she was on detail from RAND to the Office of the National Coordinator for Health IT, where she established and directed the economic analysis, evaluation, and modeling group. She has an A.B. from the Woodrow Wilson School at Princeton and a Ph.D. in Health Policy with a concentration in economics from Harvard.



Michael Cantor

Pfizer
michael.cantor@pfizer.com

Michael Cantor is currently Senior Director, Information Strategy and Analytics, in Pfizer's Clinical Informatics and Innovation group. His work focuses on leveraging data reuse and integration to support future horizons of scientific decision support for precision medicine. He is currently co-leading several initiatives around the secondary use of clinical data, including Pfizer's ePlacebo/eControls database, as well as its comprehensive Clinical Lab Data Catalog. He created and co-leads the MEDIC (Multisite Electronic Data Infectious Disease Consortium) project, which aims to partner with academic medical centers to perform observational studies using data from electronic medical record (EMR) systems. He has served as an advisor to programs across each of Pfizer's Business Units, as well as the Worldwide Research and Development organization, on the role of healthcare IT in advancing their strategic priorities.

Dr. Cantor previously lead Pfizer Business Technology's "Data Without Borders" strategy, with the aim of advancing data sharing and reuse, both internally and externally, to advance Precision Medicine. Outside of Pfizer, he has been a member of AMIA's public policy committee for six years, and led the committee's initiative to update its positions around data stewardship and reuse.

Prior to joining Pfizer, Michael was the Chief Medical Information Officer for the South Manhattan Healthcare Network of the New York City Health and Hospitals Corporation, based at Bellevue Hospital in Manhattan. His work there focused on developing the network's EMR system to improve patient safety and on using the network's clinical data warehouse for research. He continues to see patients 1 day/week at Bellevue, and is a Clinical Assistant Professor of Medicine at NYU School of Medicine.

Michael completed his residency in internal medicine and informatics training at Columbia, has an M.D. from Emory University, and an A.B. from Princeton.



Carolyn Clancy

Agency for Healthcare
Research and Quality
carolyn.clancy@ahrq.hhs.gov

Carolyn M. Clancy, M.D., was appointed Director of the Agency for Healthcare Research and Quality (AHRQ) on February 5, 2003, and reappointed on October 9, 2009. Prior to her appointment, Dr. Clancy was Director of AHRQ's Center for Outcomes and Effectiveness Research.

Dr. Clancy, a general internist and health services researcher, is a graduate of Boston College and the University of Massachusetts Medical School. Following clinical training in internal medicine, Dr. Clancy was a Henry J. Kaiser Family Foundation Fellow at the University of Pennsylvania. Before joining AHRQ in 1990, she was also an assistant professor in the Department of Internal Medicine at the Medical College of Virginia.

Dr. Clancy holds an academic appointment at the George Washington University School of Medicine (Clinical Associate Professor, Department of Medicine) and serves as Senior Associate Editor for the journal *Health Services Research*. She serves on multiple editorial boards, including *Annals of Internal Medicine*, *Annals of Family Medicine*, *American Journal of Medical Quality*, and *Medical Care Research and Review*.

Dr. Clancy is a member of the Institute of Medicine and was elected a Master of the American College of Physicians in 2004. In 2009, she was awarded the William B. Graham Prize for Health Services Research.

Dr. Clancy's major research interests include improving health care quality and patient safety and reducing disparities in care associated with patients' race, ethnicity, gender, income, and education. As Director of AHRQ, she launched the first annual report to Congress on health care disparities and health care quality.

Dr. Clancy lives in the Maryland suburbs of Washington, DC, with her husband, Bill. She enjoys jogging, movies, and spending time with her extended family, especially her four nieces, who live in Virginia.



Lori Clarke

University of Massachusetts
clarke@cs.umass.edu

Lori A. Clarke is chair the School of Computer Science at the University of Massachusetts, Amherst, and co-director of the Laboratory for Advanced Software Engineering Research (LASER). She is a Fellow of the ACM and IEEE, and a board member of the Computing Research Association's Committee on the Status of Women in Computing Research (CRA-W). She is a former vice chair of the Computing Research Association (CRA), co-chair of CRA-W, IEEE Publication Board member, associate editor of ACM TOPLAS and IEEE TSE, member of the CCR NSF advisory board, ACM SIGSOFT secretary/treasurer, vice-chair and chair, IEEE Distinguished Visitor, and ACM National Lecturer.

She received the 2012 ACM SIGSOFT Outstanding Researcher Award, 2011 University of Massachusetts Outstanding Accomplishments in Research and Creative Activity Award, 2009 College of Natural Sciences and Mathematics Outstanding Faculty Service Award, 2004 University of Colorado, Boulder Distinguished Engineering Alumni Award, 2002 SIGSOFT Distinguished Service Award, 1993 University Faculty Fellowship, and 1991 University of Massachusetts Distinguished Faculty Chancellor's Medal. She has written numerous papers, served on many program committees, and was program co-chair of the 14th and general chair of the 25th International Conference on Software Engineering. She has been a Principal Investigator on a number of NSF, DoD, and DARPA projects.

Dr. Clarke's research is in the area of software engineering, primarily focusing on analysis of concurrent systems and requirements engineering. Recently she has been investigating applying software engineering technologies to detect errors as well as security and other types of vulnerabilities in complex, human-intensive processes in domains such as healthcare, scientific workflow, and digital government. She is also involved in several efforts to increase participation of underrepresented groups in computing research.



Marc Cohen

Archimedes Inc.
marc.cohen@archimedesmodel.com

Marc-david Cohen is Chief Science Officer at Archimedes Inc. since 2008. He is responsible for scientific methods, products development, and consulting operations. This includes responsibility for the Archimedes model and the IndiGO individualized guideline clinical application both core assets of the company.

In 2004 Marc joined Fair Isaac (FICO) as Vice President of Research and Development where he was responsible for core analytic capabilities and new product offerings and directions in risk prediction.

In 1981 Marc joined SAS Institute, a privately held software company. He worked in numerous fields including supply chain analytics and optimization, inventory analytics, marketing optimization, network simulation, and novel data visualization and insight generation. He focused on leveraging the cross-fertilization of methodologies and approaches to innovate product ideas.

He has more than 20 years of professional experience in the field of operations research and is an expert in management science techniques and applications. He has a B.A. in mathematics from Brandeis University and a PhD. in Operations Research and Systems Analysis from the University of North Carolina at Chapel Hill. Marc has served on the editorial board of the Journal of Mathematical Modelling and Algorithms published by Kluwer Academic Publishers and on the editorial board of the International Institute of Innovation, Industrial Engineering and Entrepreneurship (I4E2). He has also served on the Management Science Roundtable of INFORMS and was a member of the Global Supply Chain Management Executive Board at the University of North Carolina Kenan-Flagler Business School. He is currently serves on the Institutional Council of the International Society for Pharmacoeconomics and Outcomes Research. This is a leadership forum and advisory board for the ISPOR board.



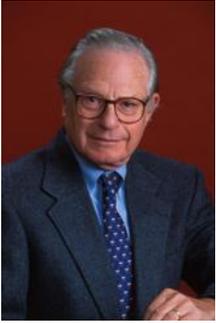
Greg Cooper

University of Pittsburgh
gfc@pitt.edu

Dr. Gregory Cooper is a Professor of Biomedical Informatics and of Intelligent Systems at the University of Pittsburgh. He received a B.S. in Computer Science from MIT in 1977, a Ph.D. in Medical Information Science from Stanford University in 1985, and an M.D. from Stanford in 1986. He was elected as a Fellow into the American College of Medical Informatics in 1991. In 2006 he was elected as a Fellow into the Association for the Advancement of Artificial Intelligence.

Dr. Cooper has been pursuing research in biomedical informatics since 1974. His research focuses on the application of Bayesian statistics, decision theory, and artificial intelligence to biomedical informatics problems. Current research projects include machine-learning-based clinical alerting, causal modeling and discovery from clinical data and high-throughput biological data, computer-aided medical diagnosis and prediction, and biosurveillance of disease outbreaks. He has over 130 peer-reviewed research publications related to biomedical informatics and associated computer science methods. He is best known for his research on Bayesian networks, especially his work on learning Bayesian networks from data; a paper he published with Edward H. Herskovits in 1992 on learning Bayesian networks has been cited in over 2900 papers, according to Google Scholar.

Dr. Cooper and his colleagues have developed, implemented, evaluated, and published a number of algorithms based on their research, including the following: (1) a machine-learning-based method for raising an alert when clinical care is unusual, as indicated by the information in an electronic medical record system, (2) an algorithm for learning Bayesian networks from observational data, (3) an algorithm for learning causal relationships from observational and experimental data, (4) a Bayesian system that detects new outbreaks of infectious disease, based on information contained in electronic, free-text emergency department reports, (5) a decision-theoretic system that assists biologists in designing DNA microarray experiments and in analyzing their results, and (6) a Bayesian algorithm for learning biological patterns and pathways from high-throughput data.



Milton Corn

U.S. National Library of
Medicine
cornm@mail.nih.gov

Dr. Corn is a graduate of Yale College and Yale Medical School. He completed his residency in internal medicine at Harvard's Peter Bent Brigham Hospital, and his fellowship in hematology at Johns Hopkins.

Prior to his service at NLM, Dr. Corn served as Professor of Medicine at Georgetown University, where he held a number of leadership positions, including Medical Director of Georgetown University Hospital and Dean of the School of Medicine. He joined NLM in 1990 as Director of the Extramural Programs Division, with responsibility for all aspects of NLM's grant programs. As Deputy Director for Research and Education, he serves as principal medical advisor on research and development and medical education priorities for NLM, and provides direction and advice on the full range of NLM's intramural and extramural research portfolio.



Deborah Estrin

Cornell University
destrin@cs.cornell.edu

Deborah Estrin is a Professor of Computer Science at the new Cornell Tech campus in New York City and a Professor of Public Health at Weill Cornell Medical College. She is co-founder of the non-profit startup, Open mHealth (<http://openmhealth.org/>). She was previously on faculty at UCLA and Founding Director of the NSF Center for Embedded Networked Sensing (CENS).

Estrin is a pioneer in networked sensing, which uses mobile and wireless systems to collect and analyze real time data about the physical world and the people who occupy it. Estrin's current focus is on mobile health (mhealth), leveraging the programmability, proximity, and pervasiveness of mobile devices and the cloud for health management. She is an elected member of the American Academy of Arts and Sciences and the National Academy of Engineering.



Lynn M. Etheredge

Rapid Learning Project,
George Washington
University
lyneth1@mac.com

Lynn Etheredge is an independent consultant on health care and social policy issues and heads the Rapid Learning Project at George Washington University. His career started at the White House Office of Management and Budget (OMB), where he was OMB’s principal analyst for Medicare and Medicaid and led its staff work on national health insurance proposals.

Lynn headed OMB’s professional health staff in the Carter and Reagan administrations overseeing more than \$70 billion of federal health spending, including its leading research, regulatory, and healthcare financing activities. In the 1990’s he was one of the principal architects of the “managed competition” proposals for healthcare reform to address coverage, quality, and cost issues using integrated delivery systems, government regulation, and economic incentives. Lynn has been active in developing proposals to cover the uninsured over more than four decades in key federal staff positions, academia, and non-partisan think tanks, and was a founding member of the National Academy for Social Insurance His work and contributions have ranged broadly across key national issues in Medicare, Medicaid, health insurance coverage, retirement and pension policies, national tax policy, budget policy, physician, hospital, and prescription drug payments, quality, healthcare economics, public administration, long term care, information technology, and consumer health.

Lynn Etheredge proposed the concept of the “rapid-learning health system” in a special issue of *Health Affairs* in 2007, and is collaborating widely in developing this approach as a major theme of national and international health initiatives, e.g. in comparative effectiveness research, a national system of learning networks and research registries, national biobanks with linked electronic health record and genomic data, a new Medicare and Medicaid Innovation Center (with \$10 billion of funds), and in rapid-learning systems for cancer care and pediatrics.



Stephen Fihn

University of Washington
sfihn@u.washington.edu

Dr. Fihn is a general internist and serves as Director of the Office of Analytics and Business Intelligence in the Veterans Health Administration and staff physician and at VA Puget Sound Health Care System (VAPSHCS). He received his medical training at St. Louis University and completed an internship, residency and chief residency in the Department of Medicine at the University of Washington (UW). He was a Robert Wood Johnson Clinical Scholar and earned a masters degree in public health at UW where he has been on the faculty since 1979 and presently holds the rank of Professor in the departments of Medicine and of Health Services. He has served as Head of the Division of General Internal Medicine at UW For 17 years.

From 1993 to 2011, Dr. Fihn directed the Northwest VA Health Services Research & Development Center of Excellence at VAPSHCS. His research has addressed a broad range of topics related to developing strategies for improving the efficiency and quality of primary medical care and understanding the epidemiology of common medical problems. He received the Department of Veteran Affairs Undersecretary’s Award for Outstanding Contributions in Health Services Research in 2002. He served as Acting Chief Research and Development Officer for the Department of Veterans Affairs in 2004-5. He has published more than 250 original articles and book chapters.

Dr. Fihn is active in several academic organizations including the Society of General Internal Medicine [SGIM] (past-president), the American College of Physicians (fellow), American Heart Association (fellow) and AcademyHealth. In 2012 he received the Robert J. Glaser Award for outstanding contributions to research, education, or both in generalism in medicine from SGIM

He is married and has three adult children.



Douglas Fridsma

Office of the National
Coordinator for Health
Information Technology
doug.fridsma@hhs.gov

Dr. Fridsma is the Chief Science Officer and Director of the Office of Science and Technology in the Office of the National Coordinator for Health Information Technology. Prior to arriving at ONC, Dr. Fridsma was on the teaching staff in the Department of Biomedical Informatics at Arizona State University and, as a practicing internal medicine physician, had a clinical practice at Mayo Clinic Scottsdale.

Dr. Fridsma completed his medical training at the University of Michigan in 1990, and his PhD in Biomedical Informatics from Stanford University in 2003. In his role at ONC, Dr. Fridsma is responsible for all programs that are focused on providing a foundation for interoperable health information exchange.

He served on the Clinical Data Interchange Standards Consortium (CDISC) Board of Directors from 2005-2008, as well as the Health IT Standards Committee from 2009-2010. Dr. Fridsma currently serves as a board member of HL7 and the National e-Health Collaborative.



Charles P. Friedman

University of Michigan
cpfried@umich.edu

Charles Friedman is Professor and Director of the health informatics program in the School of Information and the School of Public Health.

Most recently, Dr. Friedman held executive positions at the Office of the National Coordinator for Health IT (ONC) in the U.S. Department of Health and Human Services. From 2007 to 2009 he was Deputy National Coordinator and from 2009 to 2011 he was ONC's Chief Scientific Officer. While at ONC, Friedman oversaw a diverse portfolio of nationwide activities that included a "learning health system" supporting research, public health, and quality improvement; the health IT workforce development program; the SHARP health IT research program; initiatives in usability and clinical decision support; evaluation of ONC's programs; and international cooperation for eHealth. He was the lead author of the first national health IT strategic plan which was released in June of 2008.

From 2003 to 2006 he was a senior scholar at the National Library of Medicine and from 2006 to 2007, he served as Associate Director for Research Informatics and Information Technology of the National Heart, Lung and Blood Institute, also serving as the Institute's chief information officer.

Prior to his work in the government, Dr. Friedman was Professor, Associate Vice Chancellor for Biomedical Informatics, and Founding Director of the Center for Biomedical Informatics at the University of Pittsburgh. He was responsible for management of information resources across the university's six schools of the health sciences. The center Friedman established at Pitt subsequently became an academic department.

He also served for many years in a range of faculty and administrative roles at the University of North Carolina at Chapel Hill. He was a professor in the departments of biomedical engineering and family medicine in the School of Medicine; he directed the Office of Educational Development and served as Assistant Dean for Medical Education and Medical Informatics.



Dana Goldman

University of Southern
California
dpgoldma@usc.edu

Dana Goldman is a Professor and the Leonard D. Schaeffer Chair at the University of Southern California, where he is also the founding director of the Leonard D. Schaeffer Center for Health Policy and Economics. Prior to this appointment, he held the Chair in Health Economics at the RAND Corporation and was the first director of RAND's program in Health Economics, Finance, and Organization and the Bing Center for Health Economics.

Dr. Goldman is the author of over 100 articles and book chapters, and his research has been published in leading medical, economic, health policy, and statistics journals. He is a health policy advisor to the Congressional Budget Office, and is a frequent speaker on health care issues.

Dr. Goldman has received numerous awards and recognition for his research. In 2009, he was elected to the Institute of Medicine (IOM) in recognition of his professional achievement and commitment to service. He also was the inaugural recipient of the MetLife Foundation Silver Scholar Award, honoring his work in helping to clearly define the value of healthy aging and medical innovations that help individuals live healthier and longer lives. He was a 2009 recipient of the Eugene Garfield Economic Impact Prize, recognizing outstanding research demonstrating how medical research impacts the economy. He is a past recipient of the National Institute for Health Care Management Research Foundation award for excellence in health policy, and the Alice S. Hersh New Investigator Award recognizing contributions of a young scholar to the field of health services research.

Dr. Goldman is also an Adjunct Professor of Health Services at UCLA, a research associate with the National Bureau of Economic Research (the nation's leading economic research organization), and a director of the RAND/UCLA Health Services Research Postdoctoral Training Program. He received his B.A. *summa cum laude* from Cornell University and a Ph.D. in Economics from Stanford University.



Susan Graham

University of California,
Berkeley
graham@cs.berkeley.edu

Susan L. Graham is the Pehong Chen Distinguished Professor of Electrical Engineering and Computer Science Emerita and a Professor in the Graduate School at the University of California, Berkeley. Her research spans many aspects of programming language implementation, software tools, software development environments, and high-performance computing. As a participant in the Berkeley Unix project, she and her students built the Berkeley Pascal system and the widely used program profiling tool gprof. She has done seminal research in compiler code generation and optimization. She and her students have built several interactive programming environments, yielding a variety of incremental analysis algorithms. Her most recent projects are the Titanium system for language and compiler support of explicitly parallel programs and the Harmonia framework for high-level interactive software development.

Professor Graham received an A.B. in mathematics from Harvard University and M.S. and Ph.D. degrees in Computer Science from Stanford University. She is a member of the National Academy of Engineering and a fellow of the Association for Computing Machinery, the American Association for the Advancement of Science, and the American Academy of Arts and Sciences. She was the founding editor-in-chief of the ACM Transactions on Programming Languages and Systems. Among her awards are the ACM SIGPLAN Career Programming Language Achievement Award (2000), the ACM Distinguished Service Award (2006), the Harvard Medal (2008), the IEEE von Neumann Medal (2009), and the Berkeley Citation (2009).



William Griswold

University of California, San Diego
wgg@cs.ucsd.edu

William Griswold is a Professor of Computer Science and Engineering at UC San Diego. He received his Ph.D. in Computer Science from the University of Washington in 1991. His research interests include ubiquitous computing and software engineering, as well as educational technology.

Griswold is a pioneer in the area of software refactoring. Later he built ActiveCampus, one of the early mobile location-aware systems. His current CitiSense project is investigating technologies for low-cost ubiquitous real-time air-quality sensing. He is a member of the ACM and the IEEE Computer Society.



Carl Gunter

University of Illinois
cgunter@illinois.edu

Carl A. Gunter received his BA from the University of Chicago in 1979 and his PhD from the University of Wisconsin at Madison in 1985. He worked as a postdoctoral researcher at Carnegie-Mellon University and the University of Cambridge in England before joining the faculty of the University of Pennsylvania in 1987 and the University of Illinois in 2004 where he is now a professor in the Computer Science Department and a professor in the College of Medicine. He serves as the director of Illinois Security Lab, the Health Information Technology Center (HITC), and the Strategic Advanced Research Projects on Security (SHARPS).

Professor Gunter has made research contributions in the semantics of programming languages, formal analysis of networks and security, and privacy. His contributions to the semantics of programming languages include the interpretation of subtypes using implicit coercions, type inference for continuations and prompts, the use of Grothendieck fibrations as a model of parametric polymorphism, the mixed powerdomain, and the use of Petri nets as a model of linear logic. His 1992 textbook and his chapter in the Handbook of Theoretical Computer Science are standard references on the semantics of programming languages. He has also served extensively as research consultant and expert witness on programming languages and software. Professor Gunter's contributions to the formal analysis of networks and security include the Packet Language for Active Networks (PLAN), the WRSPM reference model for requirements and specifications, the first formal analyses of Internet and ad hoc routing protocols, the Verisim system for analyzing network simulations, and exploiting bandwidth contention as a DoS countermeasure. His work on privacy includes the first research on certificate retrieval for trust management and the formal analysis of regulatory privacy rules. Professor Gunter founded Probaris Technologies, a company in the Philadelphia area that provides credentials for employees of government agencies such as the Social Security Administration and the Patent and Trade Office. His recent research focuses on security and privacy issues for the electric power grid and healthcare information technologies.



Bradford Hesse

National Institutes of Health
hesseb@mail.nih.gov

Bradford (Brad) Hesse is Chief of the National Cancer Institute's Health Communication and Informatics Research Branch. Dr. Hesse received his degree in social psychology from the University of Utah in 1988 with an accompanying internship in the nascent field of medical informatics. After completing his degree, he served as a postdoctoral fellow within the Department of Social and Decision Sciences at Carnegie Mellon University. For more than two decades since that time, he has been conducting research in the interdisciplinary fields of social cognition, health communication, health informatics, and user-centered design.

Dr. Hesse was recruited to the National Cancer Institute in 2003 and has since been focusing his energies on bringing the power of evidence-based health communication to bear on the problem of eliminating death and suffering from cancer. He continues to direct the Health Information National Trends Survey, a biennial general population survey aimed at monitoring the public's use of health information during a period of enhanced capacity at the crest of the information revolution; and he serves as program director for the Centers of Excellence in Cancer Communication Research, a cutting-edge research initiative aimed at expanding the knowledge base underlying effective cancer communication strategies. Dr. Hesse has authored or co-authored over 150 publications, including peer-reviewed journal articles, technical reports, books, and book chapters. In 2009, his coauthored book titled "Making Data Talk: Communicating Public Health Data to the Public, Policy Makers, and the Press" was named Book of the Year by the American Journal of Nursing.



Lucia Hindorff

National Human Genome
Research Institute
hindorffl@mail.nih.gov

Dr. Lucia Hindorff is an epidemiologist and Program Director in the Division of Genomic Medicine at the National Human Genome Research Institute (NHGRI), National Institutes of Health. She received her M.P.H. and Ph.D. degrees from the University of Washington, where her research focused on cardiovascular genetic epidemiology and motivating factors for using genetic tests in clinical care.

At NHGRI, Dr. Hindorff is the project scientist for the Population Architecture using Genomics and Epidemiology (PAGE) program, a cooperative agreement to better characterize promising genetic variants from genome-wide association studies in large and well-phenotyped population-based cohorts. She also leads the online NHGRI Genome-wide Association Study catalog and is a NHGRI Staff team member of the Clinical Sequencing Exploratory Research (CSER) Program, which explore the integration of genomic sequence results into clinical care. Her interests include racial and ethnic differences in the architecture of complex diseases, translational and clinical bioinformatics, and the integration of genetic tests into clinical care.

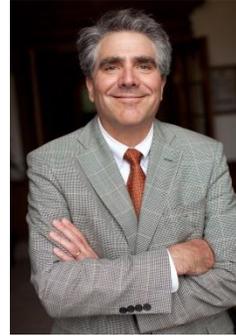


Holly Jimison

Oregon Health & Science
University
jjimisonh@ohsu.edu

Holly B. Jimison, PhD is an IPA technology advisor for NIH's Office of Behavioral and Social Science Research, on loan part time from Oregon Health & Science University where she serves as an Associate Professor in the Department of Medical Informatics & Clinical Epidemiology. She received her Doctorate in Medical Information Sciences at Stanford University, with dissertation work on using computer decision models to tailor patient education materials to individuals.

Dr. Jimison has both academic and industry experience in the design and evaluation of medical technologies. Her research is focused on consumer health informatics, with an emphasis on in-home monitoring and technology for successful aging. Her current projects include Big Data analytics for health behavior monitoring, technology for cognitive health coaching, and platforms to facilitate tailored home health interventions. Dr. Jimison is a Fellow of the American College of Medical Informatics, Past President of the Oregon Chapter of Health Information Management Systems Society, and serves on the Executive Council for Oregon's Roybal Center for Aging & Technology.



Eric Johnson

Dartmouth College
m.eric.johnson@tuck.dartmouth.edu

M. Eric Johnson is Associate Dean at the Tuck School of Business, Dartmouth College. In that role he is responsible for the MBA program and Tuck's research centers and initiatives. Johnson is also Director of Tuck's Glassmeyer/McNamee Center for Digital Strategies and the Benjamin Ames Kimball Professor of the Science of Administration. His teaching and research focuses on the impact of information technology on the extended enterprise. Through grants from the National Science Foundation, Department of Homeland Security, and the National Institute of Standards and Technology, he is studying how information technology improves process execution but also how security failures create friction throughout the extended enterprise.

His recent book, *The Economics of Financial and Medical Identity Theft* (Springer 2012) examines the security failures and economic incentives that drive identity theft. He holds patents on interface design and has testified before the US Congress on information security. He is particularly interested in the supply chain challenges faced by industries with short product life cycles such as computers, toys, and apparel. Recently, he has been applying lessons from those industries to the delivery problems found in healthcare and humanitarian relief.

Before joining Tuck, Johnson taught at the Owen Graduate School of Management, Vanderbilt University. He was previously employed by Hewlett-Packard Co. and Systems Modeling Corp. He holds a B.S. in Engineering, B.S. in Economics, an M.S. in Engineering and Operations Research from Penn State University, and a Ph.D. in Engineering from Stanford University.



Brigitte Jordan

Lifescapes
gitti.jordan@gmail.com

Brigitte Jordan is an anthropologist with two careers: the first was based in academic medical anthropology; the second in industry-based research on technologies and knowledge production in corporate workscapes and lifescapes.

During her academic period (graduate studies at UC Irvine and subsequent teaching at Michigan State University) she carried out research on cross-cultural birthing practices and obstetric technologies, previously untread territory. She had the opportunity to become an apprentice to a Maya village midwife in the Yucatan/Mexico and learned from her and other native as well as biomedical health professionals in the area over 15 years. She went on from there to do comparative research on obstetric practices in other countries, sometimes in high-tech hospitals, sometimes in women's homes or birthing clinics.

She left academia as a full professor and went to the Xerox Palo Alto Research Center (Xerox PARC) in Silicon Valley to pursue my interests in types of technologies and knowledge ecologies. She held a joint appointment between PARC (a highly respected industrial research lab, famous for inventing the personal computer and much of the technical infrastructure for the digital revolution), and the Institute for Research on Learning (IRL, a radical thinktank - now defunct - devoted to rethinking the nature of learning in all of its forms).

Officially retired, she pretty much does the same work now as before, both in the area of women's health and corporate issues, but only on strategic projects that are of interest to me. She also does a fair amount of mentoring, advising and writing, much of which is available on my website www.lifescapes.org. There you can also find (pieces of) her latest book: ***Advancing Ethnography in Corporate Settings: Challenges and Emerging Opportunities***, just published by Left Coast Press.



Robert Kaplan

National Institutes of Health
robert.kaplan@nih.gov

In February of 2011, *Robert M. Kaplan, Ph.D.* joined the National Institutes of Health (NIH) Office of the Director as Associate Director for Behavioral and Social Sciences and Director of the Office of Behavioral and Social Sciences Research (OBSSR). Prior to working for government, Kaplan was Distinguished Professor of Health Services at UCLA and Distinguished Professor of Medicine at the UCLA David Geffen School of Medicine where he was PI of the California Comparative Effectiveness and Outcomes Improvement Center. He led the UCLA/RAND health services training program and the UCLA/RAND CDC Prevention Research Center.

He was Chair of the Department of Health Services from 2004 to 2009. From 1997 to 2004 he was Professor and Chair of the Department of Family and Preventive Medicine, at the University of California, San Diego. He is a past President of several organizations, including the American Psychological Association Division of Health Psychology, Section J of the American Association for the Advancement of Science (Pacific), the International Society for Quality of Life Research, the Society for Behavioral Medicine, and the Academy of Behavioral Medicine Research. He is a Past Chair of the Behavioral Science Council of the American Thoracic Society.

Dr. Kaplan is a former Editor-in-Chief of two different academic journals: *Health Psychology* and the *Annals of Behavioral Medicine*. He is the author, co-author or editor of more than 18 books and approximately 490 articles or chapters. His work has been cited in more than 25,000 papers and the ISI includes him in the listing of the most cited authors in his field (defined as above the 99.5th percentile). In 2005 he was elected to the Institute of Medicine of the National Academies of Sciences.



Isaac Kohane

Harvard Medical School
isaac_kohane@harvard.edu

Isaac Kohane, MD, PhD, co-directs the Center for Biomedical Informatics at Harvard Medical School. He applies computational techniques, whole genome analysis, and functional genomics to study human diseases through the developmental lens, and particularly through the use of animal model systems.

Kohane has led the use of whole healthcare systems, notably in the i2b2 project, as “living laboratories” to drive discovery research in disease genomics (with a focus on autism) and pharmacovigilance (including providing evidence for the cardiovascular risk of hypoglycemic agents which ultimately contributed to “black box”ing by the FDA) and comparative effectiveness with software and methods adopted in over 84 academic health centers in the internationally.



Carl Lagoze

University of Michigan
clagoze@umich.edu

Carl Lagoze is an Associate Professor at the University of Michigan School of Information. He received his PhD in information science at Cornell University where he held numerous research positions and subsequently served on the faculty of the Information Science Department. The overarching theme of his research for the past two decades is interoperability of information systems, spanning the full spectrum of technical and human components that are critical to create networked information systems that really work. Although the results of this research apply across a variety of information contexts, the primary thread of his research explores information systems to support scholarship and knowledge production. The results of this research career are manifested in a number of widely used applications, protocols, and standards in areas such as metadata harvesting, ontology definition, and repository architecture.



Carl Landwehr

Independent consultant,
cybersecurity research and
development
carl.landwehr@gmail.com

Dr. Carl Landwehr is an independent consultant in cybersecurity research and development. He also serves as a Senior Research Scientist at George Washington University's Computer Security and Privacy Research Institute (CSPRI).

His experience in healthcare and trustworthy computing reaches back decades. He began his research in what would now be called cybersecurity in the late 1970's at the Naval Research Laboratory. In the late 1980's, he founded a working group under the International Federation for Information Processing (IFIP) on database security and recruited a set of international researchers to pursue research questions related to database privacy and security. As leader of the group, he focused them on security and privacy issues in healthcare-related database systems.

In 1996-97, he served as an invited member of the National Academy of Science study committee that produced a landmark report "For the Record: Protecting Electronic Health Information" on security and privacy issues in healthcare applications of the national information infrastructure. He was the only member of that study to serve on a follow-on National Academy study on enhancing the Internet for healthcare applications, "Networking Health: Prescriptions for the Internet," published in 2000. In 2001-2005 and 2009-2011 he served as the senior program director for programs in Trustworthy Computing at the National Science Foundation. From 2005-2009 he served as a Division Chief and Program Leader for the Intelligence Advanced Research Projects Activity (IARPA).

In the past year, he was in the first class of eleven inductees of the National CyberSecurity Hall of Fame, he was named an IEEE Fellow for contributions to cyber security, and he received the NSF Director's Meritorious Service Award.



Bradley Malin

Vanderbilt University
b.malin@vanderbilt.edu

Bradley Malin, Ph.D., is an Associate Professor and the Vice Chair for Research in the Department of Biomedical Informatics in the School of Medicine at Vanderbilt University. He is also an Associate Professor of Computer Science in the School of Engineering and is Affiliated Faculty in the Center for Biomedical Ethics and Society. He is the founder and current director of the Health Information Privacy Laboratory (HIPLab), an interdisciplinary endeavor that was established to address the growing need for data privacy research and development for the rapidly expanding health information technology sector. The HIPLab is funded through various grants from the National Science Foundation and National Institutes of Health to construct technologies that enable privacy in the context of real world organizational, political, and health information architectures. To build practical solutions, the HIPLab draws upon methodologies in computer science, biomedical science, and public policy, but has also been known to innovate novel computational techniques when the state-of-the art is insufficient. In addition to its role as a research program defining the science of privacy, for the past several years, the HIPLab has functioned as a data protection consultation service for the Electronic Medical Records and Genomics (eMERGE) network, a consortium sponsored by the National Human Genome Research Institute and National Institute of General Medical Sciences.

Under the direction of Dr. Malin, the HIPLab has made contributions to a number of health-related areas, including intelligent auditing technologies to protect electronic medical records from misuse in the context of primary care, as well as algorithms to formally anonymize patient information disseminated for secondary research purposes.

In addition to his research career, Dr. Malin has assisted multiple federal agencies in reasoning about governance strategies for information shared for secondary purposes.

Dr. Malin completed his education at Carnegie Mellon University in Pittsburgh, PA, where he received a bachelor's in biological sciences, a master's in data mining and knowledge discovery, a master's in public policy and management, and a doctorate in computer science.



Daniel Masys

University of Washington
dmasys@u.washington.edu

Dr. Daniel R. Masys is an Affiliate Professor of Biomedical and Health Informatics at the University of Washington, Seattle. An honors graduate of Princeton University and the Ohio State University College of Medicine, he completed postgraduate training in Internal Medicine, Hematology and Medical Oncology at the University of California, San Diego, and the Naval Regional Medical Center, San Diego. Dr. Masys' 30+ year career in biomedical informatics prior to joining UW in 2011 included leadership positions at the National Cancer Institute and National Library of Medicine, and faculty appointments at the University of California, San Diego, and Vanderbilt University School of Medicine, where he is former professor and chair of the Department of Biomedical Informatics.

Dr. Masys is an elected member of the Institute of Medicine of the National Academy of Sciences. He is a Fellow of the American College of Physicians, and a Fellow and Past President of the American College of Medical Informatics. He was a founding associate editor of the *Journal of the American Medical Informatics Association*, and has received numerous awards including the NIH Director's Award and the US Surgeon General's Exemplary Service Medal.

His research interests are in systems approaches to representing and using personal molecular variation data to inform clinical decision making, and creation of research infrastructure to accelerate discovery in the life sciences.



Jeffrey McCollough

University of Minnesota
mccu0056@umn.edu

Jeffrey McCullough, Ph.D., is an Assistant Professor in the Division of Health Policy and Management, School of Public Health, at the University of Minnesota. He has a Ph.D. in health economics from the University of Pennsylvania and his work focuses on the economics of technology in health care. In particular, Dr. McCullough's work has addressed health information technology (IT) and pharmaceutical policy.

Dr. McCullough has studied hospitals IT adoption decisions as well as the relationship between different forms of IT and hospitals' organizational structure. His current work includes measuring the effect of health IT systems such as computerized physician order entry (CPOE) and electronic medical records (EMR) on both quality and costs. This work further explores how health IT, health system organization, and clinician effort interact to create value. He has mentored doctoral students in both health economics and health informatics in research regarding health IT policy. Additional work explores the roles pharmaceutical and marketing information.



Amalia Miller

University of Virginia
armiller@virginia.edu

Amalia Miller is an Associate Professor of Economics at the University of Virginia and an Adjunct Economist at the RAND Corporation. She earned a Ph.D. in Economics from Stanford University and a Bachelor of Science degree in Economics from MIT. Dr. Miller's research interests include health economics, labor economics and industrial organization, with a focus on issues and policies affecting women and children. Her current research studies determinants and consequences of information technology diffusion in medical care and increasing female representation in non-traditional occupations. Dr. Miller's research has been funded by the NSF, NIH and AHRQ. She was awarded the 2012 Garfield Award for economic impact and the 2006 Arrow Prize for junior economists.



Eric Miller

Zepheira Inc.
em@zepheira.com

Eric Miller is the President of Zepheira where he leads strategy and implementation of open web standard solutions to integrate, navigate and manage information across personal, group, organization and market boundaries. Zepheira applies lightweight, but powerful Web centric knowledge sharing solutions to national libraries, governments, publishers, health care and life science organizations that share a need for more effective ways of integrate, reuse and remix data. Prior to founding Zepheira, Eric led the Semantic Web Initiative for the World Wide Web Consortium (W3C) at MIT providing the architectural and technical leadership in the design and evolution of linking data on the Web. Eric previously held a Research Scientist position at MIT where he was a Principal Investigator on the SIMILE project focused on developing robust, open source tools that improve access, management and reuse among digital resources. Before joining W3C / MIT, Eric was a Senior Research Scientist at OCLC Online Computer Library Center, Inc. and the co-founder and Associate Director of the Dublin Core Metadata Initiative, an open forum engaged in the development of interoperable online metadata standards that support a broad range of purposes and business models.



Tom Mitchell

Carnegie Mellon University
tom.mitchell@cmu.edu

Tom M. Mitchell founded and chairs the Machine Learning Department at Carnegie Mellon University, where he is the E. Fredkin University Professor. His research uses machine learning to develop computers that are learning to read the web, and uses brain imaging to study how humans read. Mitchell is a member of the U.S. National Academy of Engineering, a Fellow of the American Association for the Advancement of Science (AAAS), and a Fellow of the Association for the Advancement of Artificial Intelligence (AAAI). He believes the field of machine learning will be the fastest growing branch of computer science during the 21st century. Mitchell's web page is <http://www.cs.cmu.edu/~tom>.



Mark Musen

Stanford University
musen@stanford.edu

Dr. Musen is Professor of Biomedical Informatics at Stanford University, where he is Director of the Stanford Center for Biomedical Informatics Research. He holds an MD from Brown University and a PhD from Stanford.

Dr. Musen conducts research related to intelligent systems, the Semantic Web, reusable ontologies and knowledge representations, and biomedical decision support. His long-standing work on a system known as Protégé has led to an open-source technology now used by thousands of developers around the world to build intelligent computer systems and new computer applications for e-science and the Semantic Web. He is known for his research on the application of intelligent computer systems to assist health-care workers in guideline-directed therapy and in management of clinical trials. He is principal investigator of the National Center for Biomedical Ontology, one of the eight National Centers for Biomedical Computing supported by the U.S. National Institutes of Health. He chairs the Health Informatics and Modeling Topic Advisory Group for the World Health Organization's revision of the International Classification of Diseases (ICD-11). He is a member of the National Advisory Council of the National Institute for Biomedical Informatics and Bioengineering of the U.S. National Institutes of Health.

Early in his career, Dr. Musen received the Young Investigator Award for Research in Medical Knowledge Systems from the American Association of Medical Systems and Informatics and a Young Investigator Award from the National Science Foundation. In 2006, he was recipient of the Donald A. B. Lindberg Award for Innovation in Informatics from the American Medical Informatics Association. He has been elected to the American College of Medical Informatics and the Association of American Physicians. Dr. Musen sits on the editorial boards of several journals related to biomedical informatics and computer science. He is co-editor of the *Handbook of Medical Informatics* (Springer-Verlag, 1997) and co-editor-in-chief of the journal *Applied Ontology*.



Elizabeth Mynatt

Georgia Institute of
Technology
mynatt@cc.gatech.edu

Elizabeth Mynatt is a professor of Interactive Computing and the executive director of Georgia Tech's Institute for People and Technology. The Institute for People and Technology (IPaT) serves as a catalyst for research activities that pursue transformations in healthcare, media, education, and humanitarian systems by integrating advances in human-centered design, information technology, system science and engineering, policy, and management.

Dr. Mynatt is an internationally recognized expert in the areas of ubiquitous computing, personal health informatics, computer-supported collaborative work and human-computer interface design. Named Top Woman Innovator in Technology by Atlanta Woman Magazine in 2005, Dr. Mynatt has created new technologies that support the independence and quality of life of older adults "aging in place," that help people manage chronic disease, and that increase creative collaboration in workplaces.

Dr. Mynatt is a member of the ACM SIGCHI Academy, a Sloan and Kavli research fellow, and serves on Microsoft Research's Technical Advisory Board. She is also a member of the Computing Community Consortium, an NSF-sponsored effort to engage the computing research community in envisioning more audacious research challenges. Dr. Mynatt earned her Bachelor of Science summa cum laude in computer science from North Carolina State University and her Master of Science and Ph.D. in computer science from Georgia Tech.



Wendy Nilsen

National Institutes of
Health
nilsenwj@od.nih.gov

Wendy Nilsen, Ph.D. is a Health Scientist Administrator at the NIH Office of Behavioral and Social Sciences Research (OBSSR). Wendy's scientific focus is on the science of human behavior and behavior change, including: utilizing mobile technology to better understand and improve health, adherence, the mechanisms of behavior change and behavioral interventions in complex patients in primary care. More specifically, her efforts in mobile and wireless health (mHealth) research include: leading the development of the NIH mHealth Public-Private Partnership, convening meetings to address methodology and barriers to the utilization of mobile technology in research; serving on numerous federal mHealth initiatives; and, leading the mHealth training institutes.

Wendy is also the chair of the Adherence Network, a trans-NIH effort to enhance and develop the science of adherence. She is also a member of the Science of Behavior Change, Health Economics and HMO Collaboratory working groups. These projects are initiatives funded through the Common Fund that target behavioral and social sciences research to improve health across a wide range of domains. Wendy also chairs the NIH Integrating Health Strategies workgroup that supports the science of behavioral treatments for 'complex patients' in primary care.



Lucila Ohno-Machado

University of California, San Diego
machado@ucsd.edu

Lucila Ohno-Machado directs the Division of Biomedical Informatics (DBMI) at UCSD, a research, teaching, and clinical support service unit. Her research has been focused on construction and evaluation of novel data mining and decision support tools for biomedical research and clinical care, with particular emphasis on prognostication. These tools are based in statistical learning, machine learning, and are implementable as decision support systems. She has been pursuing research on predictive modeling and individualized survival predictions since her graduate studies. She has recently co-authored the book "Statistical Evaluation of Diagnostic Performance: Topics in ROC Analysis."

She is the PI for the NIH-funded National Center for Biomedical Computing iDASH, as well as an AHRQ-funded Scalable National Network for Effectiveness Research and the Phenotype Discovery in Genomic Studies. These two projects are scheduled to end during summer 2013.

As associate dean for informatics at UCSD, she oversees the development and implementation of information systems for clinical quality improvement and health services research. She directs the Informatics Core of our CTSA. The DBMI developed the UCSD Clinical Data Warehouse for research, and implemented commercial and non-commercial data management systems for clinical studies. She was also founding chair for the steering committee for UC-Research exchange, a University of California-wide initiative to integrate data warehouses from their five medical centers (UCLA, UCSF, UC Irvine, UC Davis, UCSD), and now serve as a member.



Vinay Pai

National Institutes of Health
paiv@mail.nih.gov

Dr. Vinay M. Pai is a program director in the newly-formed Division of Health Information Technology within the National Institute of Biomedical Imaging and Bioengineering at the National Institutes of Health. His primary portfolio responsibilities are biomedical imaging informatics, ranging from image processing to data modeling and image sharing. His portfolio also includes development of low-cost technologies for less-resourced settings, and projects in the big-data umbrella. His interests also include clinical decision support systems as well as medical device interoperability.



Steve Parente

University of Minnesota
paren010@umn.edu

Stephen T. Parente, PhD, MPH, MS is the Minnesota Insurance Industry Chair of Health Finance in Carlson School of Management and the Director of the Medical Industry Leadership Institute at the University of Minnesota. As a Professor in the Finance Department, he specializes in health economics, health information technology, and health insurance. He has served as a consultant to several of the largest organizations in health care delivery including: UnitedHealth Group, Blue Cross Blue Shield, the Center for Medicare and federal and state governments as well as medical technology firms.

Dr. Parente's peer-reviewed publications focus on the consumer directed health plans, health reform, medical technology assessment and consumer choices in health and wealth management. As the principal investigator for over \$6 million in grants and contracts he has examined the national impact on health information technology on productivity and cost and has recently concluded several studies on topics including: innovations from health savings accounts and medical care fraud and abuse. In Washington DC, he is a governing board member of the Health Care Cost Institute, an Adjunct Scholar of the American Enterprise Institute and a health policy adviser to the American Action Forum. He has testified to the US Congress and state government on health reform legislation.

Dr. Parente was a health policy advisor for the McCain 2008 Presidential Campaign and served as Legislative Fellow in the office of Senator John D. Rockefeller IV (D-WV) during the Bush and Clinton Administrations' health reform initiatives. He has a doctorate from Johns Hopkins University and both a Masters of Public Health and a Masters of Public Policy Analysis from the University of Rochester.



Misha Pavel

Oregon Health and Science
University
mpavel@nsf.gov

Misha Pavel is a professor in the Department of Biomedical Engineering, with a joint appointment in the Department of Medical Informatics and Clinical Epidemiology, at Oregon Health and Science University. Previously, he was a chair of the Department of Biomedical Engineering and the Director of the Point of Care Laboratory, which focuses on unobtrusive monitoring, neurobehavioral assessment and computational modeling. His current research is focused on technology that would enable transformation of healthcare to be proactive, evidence-based, distributed and patient-centered. His current research is combining computational modeling of complex behaviors of biological systems, engineering, and cognitive science with a focus on information fusion, pattern recognition, augmented cognition, and the development of multimodal and perceptual human-computer interfaces.

Prior to his academic career, he was a member of the technical staff at Bell Laboratories, where his research included network analysis and modeling. Subsequently, he was at the AT&T Laboratories as a Technology Leader seeking innovative solutions at the intersection of mobile communication and the Internet. He has a Ph.D. in experimental psychology from New York University, an M.S. in electrical engineering from Stanford University, and a B.S. in electrical engineering from the Polytechnic Institute of Brooklyn. Misha Pavel is a Senior Member of IEEE.



Richard Platt

Harvard Medical School
richard_platt@harvard.edu

Richard Platt, MD, MS is Professor and Chair of the Harvard Medical School Department of Population Medicine at the Harvard Pilgrim Health Care Institute, Boston, MA. He has extensive experience in health system based observational and intervention studies using electronic health records and claims data.

Dr. Platt leads the FDA's Mini-Sentinel program, which is performs surveillance of the safety of marketed medical products using a distributed data network that includes electronic health data from over 125 million people. He is a co-leader of the NIH Health Care Systems Research Collaboratory, which is developing distributed networking systems to support multi-center pragmatic clinical trials based in health care systems. He leads a CDC Prevention Epicenter that focuses on surveillance and prevention of healthcare associated infections. He also leads a CDC Center of Excellence in Public Health Informatics that has developed electronic health record based systems for automated detection and reporting of notifiable diseases to local health authorities.

He is a member of the Institute of Medicine Roundtable on Value & Science-Driven Health Care, and the American Association of Medical Colleges Advisory Panel on Research.



Peter Pronovost

John Hopkins Medicine
ppronovo@jhmi.edu

Dr. Pronovost is a practicing anesthesiologist and critical care physician and a professor in the departments of Anesthesiology & Critical Care Medicine, Surgery and Health Policy and Management who is dedicated to finding ways to make hospitals and health care safer for patients. He is Senior Vice President for Patient Safety and Quality and Director of the Armstrong Institute for Patient Safety and Quality, Johns Hopkins Medicine.

He has developed a scientifically proven method for reducing the deadly infections associated with central line catheters. His simple but effective checklist protocol virtually eliminated these infections saving 1,500 lives and \$100 million annually across the State of Michigan. The checklist protocol is now being implemented across the United States, state by state, and helped reduce these infections by 60%. Several other countries are also implementing the program.

Peter has chronicled his work helping improve patient safety in his new book, *Safe Patients, Smart Hospitals: How One Doctor's Checklist Can Help Us Change Health Care from the Inside Out*. In addition, he has also published more than 400 articles related to patient safety and the measurement and evaluation of safety efforts. He serves in an advisory capacity to the World Health Organizations' World Alliance for Patient Safety.

The winner of several national awards, including the 2004 John Eisenberg Patient Safety Research Award and a coveted MacArthur Fellowship in 2008, known popularly as the "genius grant". Peter was named by *Time* magazine as one of the world's 100 "most influential people" in the world for his work in patient safety.

Peter regularly addresses Congress on the importance of patient safety, prompting a report by the U.S. House of Representatives' Committee on Oversight and Government Reform strongly endorsing Peter's ICU infection prevention program.



William Riley

National Cancer Institute
wiriley@mail.nih.gov

William (Bill) Riley, PhD, is chief of the Science of Research and Technology Branch (SRTB) in the Division of Cancer Control and Population Sciences (DCCPS) at the National Cancer Institute (NCI). Dr. Riley's research interests include behavioral assessment, psychosocial health risk factors, tobacco use/cessation, and the application of technology to preventive health behaviors and chronic disease management. He has been interested in applying new technologies, particularly mobile and wireless technologies, in behavioral measurement and intervention, and the potential of these technologies to assess and intervene adaptively, in the context of the behavior, and with broad reach and scalability. His research has included the use of mobile phones and other mobile computer devices to assess and intervene on tobacco use, dietary intake, physical activity, sleep, and medication adherence. He also is interested in the application of engineering and computer science methodologies to the behavioral sciences.



William Rouse

Stevens Institute of
Technology, Georgia Institute
of Technology
wrouse@stevens.edu

Bill Rouse is the Alexander Crombie Humphreys Chair within the School of Systems & Enterprises at Stevens Institute of Technology and Director of the Center for Complex Systems and Enterprises. He is also Professor Emeritus, and former Chair, of the School of Industrial and Systems Engineering at the Georgia Institute of Technology. His research focuses on understanding and managing complex public-private systems such as healthcare, energy and defense, with emphasis on mathematical and computational modeling of these systems for the purpose of policy design and analysis.

Rouse has written hundreds of articles and book chapters, and has authored many books, including most recently *Economic Systems Analysis and Assessment* (Wiley, 2011), *People and Organizations: Explorations of Human-Centered Design* (Wiley, 2007), *Essential Challenges of Strategic Management* (Wiley, 2001) and the award-winning *Don't Jump to Solutions* (Jossey-Bass, 1998).

He has edited or co-edited numerous books including *Engineering the System of Healthcare Delivery* (IOS Press, 2010), *The Economics of Human Systems Integration* (Wiley, 2010), and *Enterprise Transformation: Understanding and Enabling Fundamental Change* (Wiley, 2006).

Among many advisory roles, he has served as Chair of the Committee on Human Factors of the National Research Council, a member of the U.S. Air Force Scientific Advisory Board, and a member of the DoD Senior Advisory Group on Modeling and Simulation. He has been designated a lifetime National Associate of the National Research Council and National Academies. Rouse is a member of the National Academy of Engineering and has been elected a fellow of four professional societies -- Institute of Electrical and Electronics Engineers (IEEE), the International Council on Systems Engineering (INCOSE), the Institute for Operations Research and Management Science (INFORMS), and the Human Factors and Ergonomics Society (HFES). Rouse received his B.S. from the University of Rhode Island, and his S.M. and Ph.D. from the Massachusetts Institute of Technology.



Josh Rubin

Joseph H. Kanter Family
Foundation
Josh@KanterHealth.org

Josh C. Rubin, JD, MBA, MPH, MPP, is the Executive Director of the Joseph H. Kanter Family Foundation and Health Legacy Partnership (KFF). Josh is exceptionally committed to effectuating KFF's vision for a national health outcomes data sharing network that will advance medical research and patient safety, transform the practice of medicine, and empower clinicians and patients.

Josh has been serving as a volunteer advisor to KFF for over a year. He previously served as Senior Policy Fellow at eHealth Initiative. While at eHI, Josh developed a comprehensive analysis of needs and requirements for the United States Food and Drug Administration (FDA) related to developing an electronic data exchange (e-Platform) for information concerning FDA-regulated products, and provided project management oversight and technical support related to assisting the FDA in developing an active electronic post-market safety surveillance initiative (Sentinel). Before joining eHI, Josh was a Senior Consultant at IBM's government healthcare strategy and change consulting team. At IBM, Josh supported organizational change initiatives at federal government healthcare clients including the National Institutes of Health (NIH) and the Centers for Medicare & Medicaid Services (CMS).

A graduate of Georgetown University's College of Arts and Sciences and a life member of American MENSA, Josh holds a Juris Doctor (JD) law degree from Georgetown University Law Center and is a member of the Virginia State Bar and the District of Columbia Bar. He also holds an MBA from Georgetown University McDonough School of Business, an MPH from Johns Hopkins University Bloomberg School of Public Health, and an MPP from Georgetown Public Policy Institute, all with healthcare concentrations.



Ben Shneiderman

University of Maryland
ben@cs.umd.edu

Ben Shneiderman (<http://www.cs.umd.edu/~ben>) is a Professor in the Department of Computer Science and Founding Director (1983-2000) of the Human-Computer Interaction Laboratory (<http://www.cs.umd.edu/hcil/>) at the University of Maryland. He is a Fellow of the AAAS, ACM, and IEEE, and a Member of the National Academy of Engineering, in recognition of his pioneering contributions to human-computer interaction and information visualization. His contributions include the user interface for the web-link, touchscreen keyboards, development of Spotfire, initial versions of the treemap, innovative network visualization strategies for NodeXL, and temporal event sequence analysis for electronic health records.

Ben is the co-author with Catherine Plaisant of *Designing the User Interface: Strategies for Effective Human-Computer Interaction* (5th ed., 2010) <http://www.awl.com/DTUI/>. With Stu Card and Jock Mackinlay, he co-authored *Readings in Information Visualization: Using Vision to Think* (1999). His book *Leonardo's Laptop* appeared in October 2002 (MIT Press) and won the IEEE book award for Distinguished Literary Contribution. His latest book, with Derek Hansen and Marc Smith, is *Analyzing Social Media Networks with NodeXL* (www.codeplex.com/nodexl, 2010).



Abdul Shaikh

National Institutes of Health
shaikhab@mail.nih.gov

Dr. Shaikh is a Program Director and Behavioral Scientist in the National Cancer Institute's (NCI's) Health Communication and Informatics Research Branch (HCIRB). With a diverse background in the health and technology industries, he specializes in advanced technology initiatives in behavioral informatics, data science, and open innovation.

Dr. Shaikh has led and served on several technology advisory groups and public-private partnerships such as the HHS Innovation Council and NIH Big Data to Knowledge working group, and has been recognized by HHS leadership for advancing health informatics and public sector innovation. His responsibilities include managing a population health research portfolio and the Division's Small Business Innovation Research (SBIR) program, leading federal open innovation initiatives, and thought leadership for big data and evidence-based technologies. Dr. Shaikh received his Doctorate in Health Behavior and Health Education from the University of Michigan School of Public Health as a Rackham Merit Fellow. He received his Masters of Health Science degree as a University of Toronto Open Fellow, and his Honors Bachelor of Science degree in Psychology from the University of Toronto.



Mary Shaw

Carnegie Mellon University
mary.shaw@cs.cmu.edu

Mary Shaw is the Alan J. Perlis University Professor of Computer Science at Carnegie Mellon University, where she has been a member of the faculty since completing her PhD in 1972. Her research interests lie in the area of software engineering and software systems, particularly software architecture, end user software engineering, cybersociotechnical systems, and software design.

She is co-author of "Software Architecture: Perspectives on an Emerging Discipline" and is considered to be one of the founders of the field of software architecture. She has received the ACM SIGSOFT Outstanding Research AWARD, the IEEE Computer Society TCSE's Distinguished Educator Award, CSEE&T's Nancy Mead Award for Excellence in Software Engineering Education, the Stevens Award, and the Warnier Prize. She is a fellow of the Association for Computing Machinery (ACM), the Institute for Electrical and Electronics Engineers (IEEE) and the American Association for the Advancement of Science (AAAS), and she is a member of IFIP WG 2.10 on Software Architecture. She is a past member of the National Research Council's Computer Science and Telecommunications Board and the Defense Advanced Research Project Agency's Information Science and Technology Board.



Jonathan Silverstein

NorthShore University Health System
jsilverstein@northshore.org

Jonathan C. Silverstein, vice president for clinical research informatics at NorthShore University Health System (NorthShore) heads the Center for Clinical and Research Informatics (CCRI), whose mission is to preserve and improve human life through innovative collection and use of clinical data. CCRI builds upon NorthShore's award-winning electronic health record and extensive data warehouse to be a nationally recognized leader in informatics for clinical quality improvement and research. CCRI supports matrix staff reporting across NorthShore (e.g. Enterprise Data Warehouse team, Epic Optimization team) and will recruit six faculty directors of informatics working across a wide range of medical domains and computational methods.

Dr. Silverstein joined NorthShore after serving as the associate director of the Computation Institute at University of Chicago and Argonne National Laboratory where he became internationally known for his expertise, and federally funded research, in the application of advanced computing architectures to biomedicine; and on the design, implementation, and evaluation of high-performance collaboration and visualization environments for anatomic education and surgery. He is recognized as one of three founding scientific directors of the Chicago Biomedical Consortium, and was an attending general surgeon for seven years while he was a lead physician informatician for enterprise electronic medical record deployments at the University of Chicago and the University of Illinois at Chicago. Dr. Silverstein holds an M.D. from Washington University (St. Louis) and an M.S. from Harvard School of Public Health. He is a Fellow of the American College of Surgeons and a Fellow of the American College of Medical Informatics.



William W. Stead

Vanderbilt University Medical Center
William.W.Stead@vanderbilt.edu

Dr. Stead is Associate Vice Chancellor for Health Affairs, Chief Strategy Officer and Director of the Informatics Center at Vanderbilt University Medical Center. The Informatics Center is a unique blend of the Department of Biomedical Informatics of the School of Medicine (research and education), the Eskind Biomedical Library (knowledge management), the Center for Better Health (accelerating change) and the units that manage the medical center's information technology infrastructure.

Dr. Stead received his B.A., M.D., and training in Internal Medicine and Nephrology from Duke. At Vanderbilt, his team has shown how to translate techniques from the science of biomedical informatics into novel approaches to information infrastructure that reduce cost to implement and barriers to adoption. The resulting enterprise-wide electronic health record and communication/decision support tools support his current focus on system-supported, evidence-based practice and research leading toward personalized medicine.

Dr. Stead is McKesson Foundation Professor of Biomedical Informatics and Professor of Medicine. He is a Founding Fellow of both the American College of Medical Informatics and the American Institute for Engineering in Biology and Medicine. He was the founding Editor-in-Chief of the Journal of the American Medical Informatics Association, and served as President of the American College of Medical Informatics, Chairman of the Board of Regents of the National Library of Medicine, Presidential appointee to the Commission on Systemic Interoperability, and as Chair of the National Research Council Committee on Engaging the Computer Science Research Community in Health Care Informatics. He is a member of the Council of the Institute of Medicine and the National Committee for Vital Health Statistics.

In addition to his academic and advisory responsibilities, Dr. Stead is a Director of HealthStream.



George Strawn

The Networking and
Information Technology
Research and Development
Program
strawn@nitrd.gov

Dr. George O. Strawn is the Director of the National Coordination Office (NCO) for the Federal government's multiagency Networking and Information Technology Research and Development (NITRD) Program. He also serves as the Co-Chair of the NITRD Subcommittee of the National Science and Technology Council. The NCO reports to the Office of Science and Technology Policy (OSTP) within the Executive Office of the President.

Dr. Strawn is on assignment to the NCO from the National Science Foundation (NSF), where he most recently served as Chief Information Officer (CIO). Prior to his appointment as NSF CIO, Dr. Strawn served as the executive officer of the NSF Directorate for Computer and Information Science and Engineering (CISE) and as Acting Assistant Director for CISE. Previously, Dr. Strawn had served as the Director of the CISE Division of Advanced Networking Infrastructure and Research, where he led NSF's efforts in the Presidential Next Generation Internet Initiative.

Prior to coming to NSF, Dr. Strawn was a Computer Science faculty member at Iowa State University (ISU) for a number of years. He also served there as Director of the ISU Computation Center and Chair of the ISU Computer Science Department.

Dr. Strawn received his Ph.D. in Mathematics from Iowa State University and his BA Magna Cum Laude in Mathematics and Physics from Cornell College. He is a Fellow of the American Association to the Advancement of Science.



Kevin Sullivan

University of Virginia
sullivan@cs.virginia.edu

Kevin Sullivan received his PhD in Computer Science and Engineering from the University of Washington in 1994, working with David Notkin. His primary appointment is as an Associate Professor in the Department of Computer Science in the School of Applied Science and Engineering at the University of Virginia. His research, education, service, and consulting interests are in the conception, design, and engineering of computational systems, and particularly in the fields of software and systems engineering. He has done work in modularity, software economics, dependability, formal methods, ultra-large-scale systems, and at the intersection of software and systems engineering and national-scale healthcare systems.

He served as a member of Technical Advisory Group and as a visiting scientist and consultant for Carnegie Mellon's Software Engineering Institute. He is an active member of the Systems Engineering Research Center (a University-Affiliated Research Center, or UARC, administered by Stevens Institute of Technology). Kevin Sullivan also participates in the Roundtable on Value- and Science-Driven Healthcare of the Institute of Medicine.



Richard Tannen

University of Pennsylvania
School of Medicine
tannen@mail.med.upenn.edu

Richard L. Tannen is an Emeritus Professor of Medicine at the University of Pennsylvania School of Medicine and an Affiliate Member of the Center for Clinical Epidemiology and Biostatistics. He joined the Penn faculty in 1995 with an extensive background as an investigator in nephrology, clinician, and medical administrator. During his 30 years in biomedical science, he held continuous NIH funding, served as director of the NIH-funded George M. O'Brien Kidney Research Center at the University of Michigan, and was recipient of an NIH Merit Award.

He has held faculty positions at the University of Vermont, where he was Chief of the Nephrology Division, and at the University of Michigan, where he was Professor of Medicine and Chief of the Nephrology Division.

He has published more than 100 journal articles, was the co-editor of a major book in Kidney Diseases and has served as President of the American Society of Nephrology, as a Vice President of the National Kidney Foundation, and as Chairman of the Kidney Section of the American Heart Association; and also is a member of many highly selective professional societies. He currently serves as Director of Medical Research for the Kanter Family Foundation.

At Penn he served as the Senior Vice Dean of the School of Medicine, a role he relinquished in 2002 to re-invigorate his research career in a totally new area. In order to gain the specific skills for the research project he envisioned, he spent a year auditing the Masters Course in Clinical Epidemiology at Penn. He then was funded by a RO1 from the National Heart, Lung and Blood Institute, to examine whether a large computerized primary care medical record database (UK-GPRD) produced valid outcomes research results.

His ongoing efforts have demonstrated the feasibility of using a large, appropriately constructed Electronic Health Record (HER) database for performing VALID outcomes research including "Comparative Effectiveness Research". To do this successfully and thereby transform future healthcare requires an appropriately constructed and sufficiently large database along with analytic methods that overcome "unmeasured confounding/bias".



Douglas Van Houweling

University of Michigan
dvh@umich.edu

Douglas E. Van Houweling is Associate Dean for Research and Innovation and Professor of Information. Until July 2010, he served as president and CEO of Internet2. He has also served as a member of the National Academies Panel on the "Impact of IT on the Future of the Research University." With James Duderstadt and Daniel Atkins, he authored *Higher Education in the Digital Age*. He currently serves on the boards of Advanced Network and Services and Merit Network. He previously served on Altarum's Board and as a director at Syntel and Adaptec.

Van Houweling played a major role in Internet development in the United States. He was chairman of the board of MERIT, Inc., a Michigan statewide computing network, when the National Science Foundation awarded it responsibility for operation and management of the NSFNET national backbone in partnership with IBM, MCI, and the Michigan Strategic Fund in 1987. Van Houweling was also chairman of the board of Advanced Network and Services Corp., a nonprofit organization that implemented and operated the world's largest Internet backbone network from 1991-95.

Van Houweling has long been active in inter-university initiatives, serving on the EDUCOM board and playing roles in establishing numerous initiatives to establish cooperative information technology efforts among universities. He previously served as the vice provost for information and technology at the University of Michigan, where he was responsible for the University's strategic direction in the information technology arena.

Van Houweling came to Michigan from Carnegie Mellon University in Pittsburgh where he was vice provost for computing and planning from 1981-84. In that capacity, he initiated and directed Carnegie-Mellon's Andrew project to enable broad use of personal computer workstations in a networked environment. Before joining Carnegie Mellon, Van Houweling was at Cornell University from 1970-81 as assistant professor of government. Starting in 1976, he took on the additional responsibilities for information technology leadership and became director of Academic Computing and Central Computing Services in 1980.



Howard Wactlar

National Science Foundation
hwactlar@nsf.gov

Howard D. Wactlar is Vice Provost for Research Computing and Alumni Research Professor in the School of Computer Science, Carnegie Mellon University, Pittsburgh, PA. He is currently serving as as Director of the Information and Intelligent Systems Division of the National Science Foundation. He was co-founder of the DoD funded Software Engineering Institute FFRDC and the NSF Quality of Life Technology Center ERDC. He has led several basic research initiatives for NSF, NIH, defense and intelligence agencies and industry including a series of CareMedia projects that apply machine understanding of observed human behavior patterns to healthcare. His current research centers on multimedia information systems, machine learning and intelligent systems, and their application to improving health care.



James Walker

Siemens Healthcare
james.m.walker@siemens.com

Dr. Jim Walker is Principal Healthcare Informatician for Siemens Healthcare. Prior to joining Siemens he was the Chief Health Information Officer at Geisinger Health System, Director of the Keystone Health-Information Exchange, and Director of the Keystone Beacon Community.

He has spent over 15 years developing and implementing and health-information systems and evaluating their usability, usefulness, and safety. After leading the implementation and evaluation of an integrated inpatient and outpatient EHR and networked patient EHR at Geisinger, Walker has led the development of the Keystone Health-Information Exchange (KeyHIE). In 2013, KeyHIE was comprised of 38 care-delivery companies operating more than 200 facilities in 40 rural counties of central Pennsylvania. KeyHIE services include one of the first networked PHRs (with over 2,000 users in its first year), that provides patients (and their designees) access to their information from around the region, along with secure electronic communication with their clinicians. In addition, KeyHIE developed a national standard and software and a for-profit company for extracting clinical information from any nursing-home or home-health reporting document (MDS or OASIS) and sending the information to any HIE in national-standard format. Dr. Walker has tested various health-IT systems for usability, usefulness, and safety over a decade of AHRQ- and ONC-funded research. He has published more than 20 peer-reviewed articles and book chapters as well a book on EHR implementation. He practiced and taught general internal medicine for 20 years in the outpatient, inpatient and ICU settings.

Over the last decade, Dr. Walker has provided state and national leadership in developing the policies and standards required to make health IT useful to patients and their care teams, particularly the members of the team who work in smaller organizations with limited IT resources. He serves on the Health IT Standards Committee of HHS and chairs its Clinical Quality Workgroup. He also serves on the National Committee for Vital and Health Statistics.



Jie Yang

National Science
Foundation
jyang@nsf.gov

Dr. Jie Yang is currently a program director in Division of Information and Intelligent Systems at National Science Foundation (NSF). Before he joined NSF, he was a faculty member in Carnegie Mellon University. He has worked on many different research areas, such as automatic control, robotics, multimodal human computer interaction and multimedia processing, computer vision, pattern recognition, and smart health. He has published more than 150 papers in various journals and international conferences in these research areas. He has involved in organizing various international conferences in these areas. He served as an Associate Editor for IEEE Transactions on Multimedia between and is currently serving as an Associate Editor for Journal of Machine Vision and Applications. He is a fellow of IEEE.

