UCSF-Stanford Center of Excellence in Regulatory Science and Innovation (CERSI)

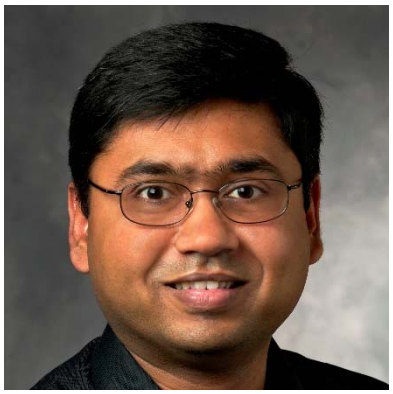
NLP Workshop Speaker Biographies

http://www.ucsfstanfordcersi.org/nlp-workshop

 **Russ Altman, MD, PhD**	Russ Biagio Altman is a professor of bioengineering, genetics, medicine, and biomedical data science (and of computer science, by courtesy) and past chairman of the Bioengineering Department at Stanford University. His primary research interests are in the application of computing and informatics technologies to problems relevant to medicine. He is particularly interested in methods for understanding drug action at molecular, cellular, organism and population levels. His lab studies how human genetic variation impacts drug response (e.g. http://www.pharmgkb.org/). Other work focuses on the analysis of biological molecules to understand the actions, interactions and adverse events of drugs (http://feature.stanford.edu/). He helps lead an FDA-supported Center of Excellence in Regulatory Science & Innovation (https://pharm.ucsf.edu/cersi). Dr. Altman holds an A.B. from Harvard College, and M.D. from Stanford Medical School, and a Ph.D. in Medical Information Sciences from Stanford. He received the U.S. Presidential Early Career Award for Scientists and Engineers and a National Science Foundation CAREER Award. He is a fellow of the American College of Physicians (ACP), the American College of Medical Informatics (ACMI), the American Institute of Medical and Biological Engineering (AIMBE), and the American Association for the Advancement of Science (AAAS). He is a member of the National Academy of Medicine (formerly the Institute of Medicine, IOM) of the National Academies. He is a past-President, founding board member, and a Fellow of the International Society for Computational Biology (ISCB), and a past-President of the American Society for Clinical Pharmacology & Therapeutics (ASCPT). He has chaired the Science Board advising the FDA Commissioner, currently serves on the NIH Director's Advisory Committee, and is Co-Chair of the IOM Drug Forum. He is an organizer of the annual Pacific Symposium on Biocomputing (http://psb.stanford.edu/), and a founder of Personalis, Inc. Dr. Altman is board certified in Internal Medicine and in Clinical Informatics. He received the Stanford Medical School graduate teaching award in 2000, and mentorship award in 2014.
 **Robert Ball, MD, MPH**	Robert Ball MD, MPH, ScM is Deputy Director, Office of Surveillance and Epidemiology (OSE), Center for Drug Evaluation and Research (CDER), FDA. Dr. Ball shares in the responsibilities for leading OSE staff evaluating drug risks and promoting the safe use of drugs by the American people, including managing the Sentinel System. From 2008 to 2013, Dr. Ball served as the Director, Office of Biostatistics and Epidemiology (OBE), Center for Biologics Evaluation and Research (CBER), FDA. In this role, Dr. Ball was the principal advisor to the CBER director on all matters pertaining to statistical and epidemiological evaluation of regulated biological products and led post-marketing safety programs for vaccines and blood, including the CBER mini-Sentinel pilot. Dr. Ball received his BS in Mathematics and MD from Georgetown University, where he was elected to the Alpha Omega Alpha Honor Medical Society. He interned at the US Naval Hospital Bethesda, completed his MPH and residency in Occupational Medicine at the Uniformed Services University of the Health Sciences, and received the ScM degree in Infectious Disease Epidemiology and Vaccine Science and Policy from Johns Hopkins School of Public Health. Prior to joining the FDA in 1998, Dr. Ball served as a US Navy Diving Medical Officer and provided patient care in US Naval hospitals in Subic

	Bay, Philippines, and Bethesda, Maryland. Dr. Ball's research interests lie at the interface of clinical medicine, epidemiology, and computational science. Since 2008 he has concentrated on the application of computational and informatics approaches, including natural language processing, to improve the evaluation of medical product safety in electronic health data systems.
 **David Carrell, PhD**	David Carrell's most significant contributions to science entail the development and application of technologies for extracting rich information from unstructured clinical text, such a physician progress notes and patient-provider email messages. This work incorporates an array of state of the art clinical natural language processing (NLP) technologies applied in single- and multi-site settings. A common thread throughout Dr. Carrell's work is precision phenotyping, which is the process of reusing information generated for patient care and stored in electronic health records (EHRs) to identify patients with specific clinical conditions or characteristics. He has applied these methods to clinical investigations in the cancer screening, cancer outcomes, behavioral health, and substance abuse domains. He has also contributed to the development of methods to improve clinical text de-identification, an important tool that enables wider sharing of clinical information for research purposes. Much of Dr. Carrell's current work focuses on adverse outcomes associated with long-term use of prescription opioids. Many of his current and past projects involve collaborations across multiple healthcare settings to support investigations that benefit from the creation of large and diverse patient cohorts.
Isaac Chang, PhD	Dr. Isaac Chang is the Director for the Division of Postmarket Surveillance in the Office of Surveillance and Biometrics in the Center for Devices and Radiological Health. In this capacity, he directs and manages the national infrastructure to conduct FDA's global post-market surveillance of medical devices and related energing technologies through the regulation, collection, integration, and dissemination of device adverse event data and to identify and communicate actual and/or potential public health risks to FDA and public stakeholders. He is responsible for establishing, interpreting, and enforcing requirements for medical device reporting (21 CFR Part 803); providing outreach and education on the regulation; monitoring, analyzing, and synthesizing adverse event data to identify signals and trends; ensuring that CDRH effectively uses adverse event report data in premarket review, postmarket evaluation studies, compliance and enforcement matters, and timely public health communications; and leading the continuous refiniment of the national IT postmarket infrastructure to efficiently receive, process, and retrieve device adverse event data in support of the FDA's Public Health mission.
 **Murthy Devarakonda, PhD**	Murthy Devarakonda, Ph.D., is a Distinguished Research Staff Member and the Principal Investigator of the Watson initiative for Patient Record Analytics at IBM Research. The research initiative explores use of advanced natural language processing and machine/deep learning techniques to build systems that reduce cognitive load on physicians in patient care. Dr. Devarakonda received Ph.D. in computer science from University of Illinois at Urbana-Champaign. He is a Fellow of IEEE (Institute of Electrical and Electronic Engineers) and an IBM Master Inventor.
	Dr. Liu is an internationally recognized investigator in clinical and biomedical natural language processing (NLP). Her current work includes research and development on improving the usability, interoperability, and adaptability of NLP systems for clinical and translational research. She is also working on broadening the community engagement of clinical NLP to encourage the adoption of NLP

 **Hongfang Liu, PhD**	techniques in clinical and translational research. Additionally, she is interested in developing methods, tools, and applications for mining diverse data sources for hypothesis generation and knowledge discovery. In the past six years, she, later together with Dr. Lixia Yao, has leading an informatics team at Mayo Clinic to investigate the use of NLP and diverse data sources including FDA Adverse Event Reporting System (FAERS), Social Media, Electronic Medical Records (EMRs) to mine adverse drug events, drug repositioning, and patient report medication outcome information.
 **David Milward, PhD**	David Milward is Chief Technology Officer (CTO) at Linguamatics. He is a pioneer of interactive text mining, and a founder of Linguamatics. He has over 20 years experience of product development, consultancy and research in natural language processing (NLP). After receiving a PhD from the University of Cambridge, he was a researcher and lecturer at the University of Edinburgh. He has published in the areas of information extraction, spoken dialogue, parsing, syntax and semantics.
Rita Ouellet-Hellstrom, PhD	Rita Ouellet-Hellstrom received her Ph.D. (Epidemiology) from The Johns Hopkins University, School of Hygiene and Public Health (currently The Johns Hopkins University Bloomberg School of Public Health) in 1992 and her Master's in Public Health (Epidemiology) from the University of Michigan, School of Public Health in 1975. Her prior training was in biology. Dr. Ouellet-Hellstrom is currently Associate Director of Science in the Division of Epidemiology, the Office of Pharmacovigilance and Epidemiology and the Office of Surveillance and Epidemiology at the FDA. She has been working as an epidemiologist in the area of postmarket safety signal identification (including data mining assessment) and evaluation at the FDA since 2002. Her responsibilities currently include advancing the science of epidemiology by exploring the use of Natural Language Processing to supplement missing information (indication, confounders, etc.) when using electronic data to evaluate safety signals in pharmacoepidemiology. Prior to joining the FDA, Dr. Ouellet-Hellstrom worked as an epidemiologist in the fields of Occupational, Environmental, Cancer, and Reproductive Epidemiology.
 **Dragutin Petkovic, PhD**	Dr. Petkovic obtained his Ph.D. at UC Irvine, in the area of biomedical image processing. He spent over 15 years at IBM Almaden Research Center as a scientist and in various management roles. His contributions ranged from use of computer vision for inspection, to multimedia and content management systems. He is the founder of IBM's well-known QBIC (query by image content) project, which significantly influenced the content-based retrieval field. Dr. Petkovic received numerous IBM awards for his work and became an IEEE Fellow for leadership in the content-based retrieval area. Dr. Petkovic also had various technical management roles in Silicon Valley startups. In 2003 Dr. Petkovic joined CS Department as a Chair and also founded SFSU Center for Computing for Life Sciences in 2005. Currently, Dr. Petkovic is the Associate Chair of the SFSU Department of Computer Science and Director of the Center for Computing for Life Sciences, as well as co-PI on two NIH sub-grants with Stanford University. Research and teaching interests of Prof. Petkovic include Global SW Engineering and teamwork, design and development of easy to use systems and Machine Learning with emphasis on Explainability.

 **Mitra Rocca, PhD**	Mitra Rocca joined Food and Drug Administration (FDA) in 2009 as the Senior Medical Informatician responsible for developing the health information architecture of the Sentinel System. She serves as the FDA CDER Health Information Technology (health IT) lead focusing on the use of Health IT data in clinical research. She serves as the FDA CDER lead to Health Level Seven (HL7), responsible for review of HL7 standards. In addition, she serves as the CDER liaison to the Office of the National Coordinator for Health Information Technology (ONC). Prior to joining the FDA, Mitra served as the Associate Director, Healthcare Informatics at Novartis Pharmaceuticals Corporation focusing on the re-use of the Electronic Health Record (EHR) for clinical research, pharmacovigilance and protocol design/feasibility. Mitra serves as the co-chair of Health Level Seven (HL7) Clinical Interoperability Council (CIC). She holds her advanced degree in Medical Informatics from the University of Heidelberg in Germany.
 **Nigam Shah, MBBS, PhD**	Dr. Nigam Shah is associate professor of Medicine (Biomedical Informatics) at Stanford University, Assistant Director of the Center for Biomedical Informatics Research, and a core member of the Biomedical Informatics Graduate Program. Dr. Shah's research focuses on combining machine learning and prior knowledge in medical ontologies to enable use cases of the learning health system. Dr. Shah received the AMIA New Investigator Award for 2013 and the Stanford Biosciences Faculty Teaching Award for outstanding teaching in his graduate class on “Data driven medicine”. Dr. Shah was elected into the American College of Medical Informatics (ACMI) in 2015 and is inducted into the American Society for Clinical Investigation (ASCI) in 2016. He holds an MBBS from Baroda Medical College, India, a PhD from Penn State University and completed postdoctoral training at Stanford University. More at: https://med.stanford.edu/profiles/nigam-shah
 **Mark Walderhaug, PhD**	Mark Walderhaug is an interdisciplinary scientist in FDA's Center for Biologics Evaluation and Research (CBER). He works in the Office of Biostatistics and Epidemiology where he is the Associate Office Director for Risk Assessment. He is currently working on incorporating the computational resource, High-Performance Integrated Virtual Environment (HIVE), into the regulatory structures of CBER and supporting the HIVE in the development of high-performance computing solutions that protect and promote health. In the past, he developed quantitative risk assessments on babesiosis, avian influenza/pandemic flu, malaria, and the impact of emerging infectious diseases on biologics. The quantitative risk assessments have incorporated health data from CMS Standard Analytical administrative files as well as other health data sources. He assists in managing text mining through Natural Language Processing (NLP) analysis and health surveillance modeling for CBER. He is a member of CBER’s Computational Science Review Committee, and is the co-chair of FDA’s Scientific Computing Board. Before joining CBER, he worked at FDA’s Center for Food Safety and Applied Nutrition where he was a member of the Food Safety Initiative's Microbiological Risk Assessment Team where he has worked on FDA's *Vibrio parahaemolyticus* and *Listeria monocytogenes* risk assessments and USDA’s *E. coli* O157:H7 risk assessment for ground beef. He later served as a temporary advisor for the Joint FAO/WHO Expert consultation on Microbial Risk Assessment of *Vibrio* spp. in seafood. He earned his Ph.D. at Vanderbilt University and held a postdoctoral appointment at the University of Chicago in the department of Molecular Genetics and Cell Biology before coming to FDA.

 **Lixia Yao, PhD**	Lixia Yao, PhD, is an Assistant Professor in the Department of Human Sciences Research at Mayo Clinic. She received her Ph.D. degree in Biomedical Informatics from Columbia University in 2010. She then worked as a Principal Investigator at GlaxoSmithKline Pharmaceuticals and the University of North Carolina at Charlotte as an assistant professor prior to Mayo. Her research focuses on mining, integrating, and transforming unstructured, incomplete, and noisy data (i.e., electronic health records and claims databases, literature, patents, and social media) into meaningful biomedical knowledge and informatics applications. By leading a team of data scientists and healthcare professionals at the Health Informatics Lab, and by collaborating with world-class scholars and clinicians, she has published in several high-profile journals including Nature Biotechnology and Genome Research. She is also the recipient of Career Development Award in Biomedical Informatics from the National Library of Medicine for 2016-2019.
 **Hong Yu, PhD**	Hong Yu is an elected member of the American College of Medical Informatics. She is a full professor in the Department of Quantitative Health Sciences at the University of Massachusetts Medical School. She is also a research health scientist at the Edith Nourse Rogers Memorial Veterans Hospital and an investigator at the VA Center for Healthcare Organization and Implementation Research. She is an adjunct professor in the Department of Medicine and in the College of Information and Computer Science of University of Massachusetts, Amherst.