



G R E A T P L A I N S
IDeA | Clinical and
Translational Research

Precision Medicine Workshop

Thursday, April 16, 2020 9:00 AM - 4:00 PM
Lauritzen Outpatient Center | Fourth Floor
Auditorium 4.14.001

The 2020 Precision Medicine Workshop, presented by the BERD KCA of the Great Plains IDeA-CTR, brings in two world-recognized experts to present their research with the aim to translate precision medicine into improvements in health care across the clinical and translational spectrum. This workshop is broken into two parts, an AM and a PM session, focusing on different aspects of precision medicine and emerging technology. This workshop is open to all interested parties and has no registration fee.

Register here: <http://j.mp/374hfqm>

Artificial Intelligence, Machine Learning, and Precision Medicine



Thursday, April 16, 2020 9:00 AM - 12:00 PM
LOC Fourth Floor Auditorium



Haoda Fu, PhD

Research Fellow and an Enterprise Lead for Machine Learning, Artificial Intelligence, and Digital Connected Care from Eli Lilly and Company

Dr. Fu is a Fellow of the American Statistical Association. He is also an adjunct professor of biostatistics at the Indiana University School of Medicine. Dr. Fu received his Ph.D. in statistics from the University of Wisconsin-Madison in 2007 and joined Eli Lilly after that. Since then, Dr. Fu is very active in statistics methodology research.

He has published more than 90 articles in peer-reviewed journals in multiple areas, including Bayesian adaptive design, survival analysis, recurrent event modeling, personalized medicine, indirect and mixed treatment comparison, joint modeling, Bayesian decision making, and rare events analysis. In recent years, his research has focused on machine learning and artificial intelligence. His research has been published in various top journals including *JASA*, *JRSS*, *Biometrics*, *ACM*, *IEEE*, *JAMA*, *Annals of Internal Medicine*, etc. He regularly teaches topics of machine learning and AI in large industry conferences, including a recent FDA workshop. He has served on the board of directors for statistics organizations, including program chairs and committee chairs for the ICSA, ENAR, and ASA Biopharmaceutical session.

This half-day short course will provide an overview of statistical machine learning, and artificial intelligence techniques with applications to the precision medicine, in particular to deriving optimal individualized treatment strategies for personalized medicine.

Applications of Deep Learning and Inverse-Reinforcement Learning to Precision Medicine



Thursday, April 16, 2020 1:00 PM - 4:00 PM
LOC Fourth Floor Auditorium



Michael R. Kosorok, PhD

W.R. Kenan, Jr. Distinguished Professor
Chair of Department of Biostatistics,
University of North Carol Chapel Hill

Professor Kosorok received his Ph.D in Biostatistics from the University of Washington in 1991. He is an internationally known biostatistician and a prominent expert in data science, machine learning and precision medicine. He is a fellow of American Statistical Association, Institute of Mathematical Statistics, and American Association for the Advancement of

Sciences. He has published more than 160 peer-reviewed journal articles with more than 50 appeared in the premier statistical journals such as *Annals of Statistics*, *JASA*, *JRSS-B*, *Biometrika* and *Biometrics*. He has also written a major text on theoretical foundations in empirical processes and semiparametric inferences (Kosorok, 2008, Springer) as well as co-edited (with Erica E.M. Moodie, 2016, ASA-SIAM) a research monograph on dynamic treatment regimens and precision medicine. As principal investigator, he has constantly received major research grants from NIH and NSF. Currently, he leads P01 CA 142538-Statistical Methods for Cancer Clinical Trials and is the Director of Biostatistics core and Co-project leader for North California Translational & Clinical Sciences Institute. In addition, he is a distinguished educator in Statistics/Biostatistics graduating 46 Ph.D students.

This half-day short course will provide an overview of Deep Learning (DL), Inverse-Reinforcement Learning (IRL), and Machine Learning (ML) techniques as they relate to Precision Medicine applications.