INSTITUTE FOR FUTURE HEALTH
FALL 2017 DISTINGUISHED SEMINARS
Presents

MASSIMO FIANDACA, M.D.
MARK MAPSTONE, PH.D.

Department of Neurology
UCI School of Medicine

“Biomarker Development for Alzheimer’s Disease: Opportunities, Challenges, and the Need for Big Data Analytics”

Monday, Dec. 11, 2017 @ 4 p.m.
Location: Donald Bren Hall, Room 4011

For further information, please contact jain@ics.uci.edu.

ABSTRACT
Alzheimer’s disease (AD) is a devastating brain illness that slowly robs older adults of their memory and independence. We currently have no cures or disease modifying therapies and only temporary and minimally effective treatments for certain symptoms. Biomarkers obtained from blood or other body fluids may provide key insights into the underlying pathobiology of AD, before the illness becomes evident. Biomarker analysis of the preclinical phase may inform us regarding the relevant pathobiology and thereby suggest novel therapies that might mitigate or prevent AD.

One of the major hurdles to biomarker research is the complexity of the clinical pathophysiology and by extension, the density of the data. It is clear that multiple levels of clinical, lifestyle, environmental, and biological information, over time, must be considered for accurate and early detection of preclinical (asymptomatic) AD. A multimodal “big data” analytic approach will be required to manage these mutually informative, but distinct datasets, in developing a better understanding of AD, and other human conditions.

In this talk, Drs. Fiandaca and Mapstone will describe their work in preclinical AD biomarker development. They will give an overview of their recent findings related to metabolomic markers of AD and present the potential for integration of other relevant –omics, including proteomics, transcriptomics, genomics, and epigenomics for enhanced understanding of the underlying pathobiology. They will also present work on metabolomics of successful cognitive aging which will be important when considering approaches to primary prevention of AD. This talk hopes to present the unique opportunities and challenges associated with complex multidimensional datasets and the growing need for big data analytic approaches in medicine.

BIOS
Massimo Fiandaca is Associate Professor in Residence at the University of California, Irvine School of Medicine. He is Co-Director of the Translational Laboratory and Biorepository (TLaB). His primary UCI faculty appointment is in the Department of Neurology, and he has secondary appointments in the Department of Neurological Surgery and the Department of Anatomy & Neurobiology. His current research interests are in human blood-based biomarkers of neurological disorders and translational models for understanding disease mechanisms and developing therapeutic approaches. Dr. Fiandaca is a board-certified neurological surgeon, who retired after 25 years to return to full-time academic research, initially at Georgetown and now at UCI. His undergraduate degree was from Oregon State University, medical degree from Oregon Health Sciences University, internship and residency training from Emory University, and graduate business education from Loyola University of Maryland.

Mark Mapstone is Professor of Neurology at the University of California, Irvine School of Medicine where he is also a member of the Institute for Memory Impairments and Neurological Disorders (IMIND). He holds an adjunct appointment in Neurology at the University of Rochester School of Medicine. His research focuses on early detection of neurological disease especially Alzheimer’s disease and Parkinson’s disease using cognitive tests and biomarkers obtained from blood. He has a special interest in developing strategies to maintain successful cognitive aging. In the clinic, he specializes in cognitive assessment of older adults with suspected brain disease. Dr. Mapstone earned a PhD in Clinical Psychology at Northwestern University and completed fellowship training in neuropsychology and experimental therapeutics at the University of Rochester.