CEAS/SoM Workshop on Engineering-Driven Medicine
Organized by the College of Engineering and Applied Sciences (CEAS) and the School of Medicine (SoM), Stony Brook University

May 8, 2017 Monday
Room 200, CEWIT Building
R&D Park, Stony Brook University
Directions to CEWIT is here.

The goal of the workshop is to synergize Stony Brook’s strengths in the convergence of engineering and medicine and help formulate broad agenda for the future. Participants are faculty researchers across campus interested in engineering-driven medicine.

AGENDA
(tentative - changes possible)

8:30 Registration and Continental Breakfast

9:00 Welcoming Remarks
Fotis Sotiropoulos (Dean, College of Engineering and Applied Sciences), Ken Kaushansky (Dean, School of Medicine and Senior Vice President of Health Sciences), Richard Reeder (Vice President for Research)
Workshop Introductions
Samir Das (Assoc. Dean for Research, College of Engineering and Applied Sciences), Lina Obeid (Dean of Research, School of Medicine)

9:25 Session I: Series of Short Talks (Session Chair: TBA)
Spectroscopy and Imaging
Jerome Liang, Radiology
Advanced imaging methods for screening early lung, colon and bladder cancer
Rina Tannenbaum, Material Science and Chemical Engineering
Cellular detection and mapping using surface enhanced Raman spectroscopy
Tim Duong, Radiology
Overview of biomedical imaging research in radiology
Shu Jia, Biomedical Engineering
Spatio-Temporal Multiplexed High-Resolution Optical Microscopy
Hassan Arbab, Biomedical Engineering
Terahertz Spectroscopic Imaging: a new biomedical imaging modality
Technology, Tools and Modeling

Arie Kaufman, Computer Science
Non-invasive medicine
Fan Ye, Electrical and Computer Engineering
Aging in place
Aruna Balasubramanian, Computer Science
Privacy focussed mHealth
Suzanne Fields, Medicine
Technology for aging in place, Use of EMR data to improve quality of care for vulnerable elders
Milutin Stanacevic, Electrical and Computer Engineering
System design of wireless power transfer, low-power communication and computation for implantable devices
Scott Smolka, Computer Science
The CyberCardia Project
Chrisa Arcan, Family Population and Preventive Medicine
Using technology to increase precision of dietary intake and lifestyle behaviors
David McKinnon, Neurobiology and Behavior
Open hardware solutions to biomed instrumentation problems
Elinor Randi Schoenfeld, Family, Population and Preventive Medicine
EasyHealthHX—a tool to help patients prepare for a health care provider visit

10:45 Short Break

11:00 Session II: Series of Short Talks (Session Chair: TBA)

Biomedical Informatics and Data Analytics

Joel Saltz, Biomedical Informatics
Digital Pathology, Multi-Scale Morphology and Precision Medicine
Fusheng Wang, Biomedical Informatics
Integrative Image and Spatial Analysis for 3D Digital Pathology
Daifeng Wang, Biomedical Informatics
Multi-scale modeling to reveal the engineering principles of complex biological systems
Christine DeLorenzo, Psychiatry
Personalized early prediction of antidepressant response by fusing dynamically selected multi-modal data
H Andrew Schwartz, Computer Science
Predicting Health with Big Data Language Analyses
Klaus Mueller, Computer Science
Visual Analytics and Decision Making
Potpourri

Marie Ann Marino, Nursing
TBA

Eric Rashba, Medicine/Cardiology
ControlAF: Empowering AF Patients to Control Their Disease

Jingfang Ju, Pathology
Delivery technology for miRNA therapeutics

Dilip Gersappe, Materials Science and Chemical Engg
Modeling approaches for transport problems in biomedicine

Lorna Role, Neurobiology
Neural stimulation and recording devices.

Vera Gorfinkel, Electrical and Computer Engineering
New tools for high throughput genome analysis of single cells

Eric Brouzes, Biomedical Engineering
Physical cues in metastasis- High content and multiparameter approach

12:15 Lunch
Working lunch along with breakout sessions

Breakout Sessions

1. Cardiovascular system
2. Neuroscience and neural engineering
3. Cancer
4. Medical imaging
5. Digital medicine and medical technologies

2:15 Presentations by Breakout Group Leaders (7-8 minutes each)

3:00 Final Comments and Adjourn