

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**