

2012 BioMedicine in 4D

Integrated -omics and Systems Microscopy

Thursday, March 22

Joe Gray, PhD Welcome and introduction

Session 2 - Perspectives from the National Cancer Institute

Dan Gallahan, PhD "Unraveling the complexity of cancer"

Huiming Zhang, PhD "Linking -omics to patient care through hyperpolarized ¹³C MRSI"

Session 3 - Integrative biology (networks and targets)

Peter Sorger, PhD "Measuring and modeling cell decision processes"

Paul Spellman, PhD "Systems biology in the age of genomics"

Josh Stuart, PhD "Using integrated pathway analysis to predict driving events in cancer"

Trey Ideker, PhD "Mapping the genetic networks of cancer"

Hanna El-Samad, PhD "What does molecular fluctuation tell us about cell organization?"

Keynote address Brian Druker, MD "Beyond Gleevec"

Functional interpretation of the genome depends on imaging technology.

Session 4 - Angstroms to nanometers (molecular machines)

Eric Barklis, PhD "EM analysis of HIV-1 structural proteins"

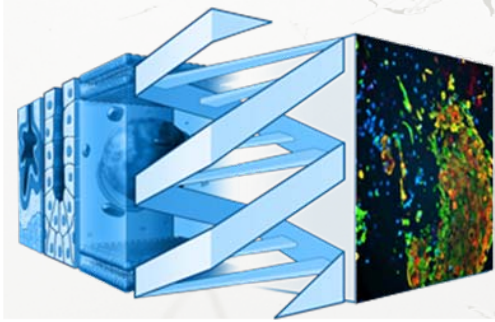
Bob Glaeser, PhD "In-focus phase contrast for cryo-EM"

Manfred Auer, PhD "Visualizing and quantifying large scale cell architecture with novel three-dimensional EM imaging approaches"

Chandrajit Bajaj, PhD "Statistical verification and validation of drug targets using 3D EM"

Michael Chapman, PhD "Improving delivery in human gene therapy: Imaging adeno-associated virus at near-atomic resolution"

David Pivnicka-Worms, MD, PhD "Molecular imaging strategies for dynamic analysis of systems"



March 21-23 *Symposium & Posters*

OHSU Center for Spatial Systems Biomedicine

For registration go to the OCSSB website at:

<http://www.ohsu.edu/ocssb>

Friday, March 23

Raymond Friddle, PhD "Can we use AFM-based measurements of molecular binding to map protein expression?"

Sriram Subramaniam, PhD "3D Electron Microscopy of cells and viruses at molecular resolution: From structure to mechanism"

Session 5 - Nanometers to micrometers (organelles and cells)

John Miao, PhD "Coherent x-ray imaging of cells and organelles"

Jay Groves, PhD "Spatial organization and the mechanics of signal transduction in cell membranes"

Tania Vu, PhD "Molecular characterization of cell signaling using quantum dot probes"

D. Lansing Taylor, PhD "Cellular systems biology in cancer research"

Garry Nolan, PhD "Humans as a perturbation event in the discovery of trans-cellular networks"

Joe Gray, PhD "Imaging approaches to the micro- and nano-environments of cancer"

Keynote address Stephen Quake, PhD "Precision measurement in biology"

Session 6 - Micrometers to centimeters (tissues and organs)

Jan Liphardt, PhD "Fundamental mechanochemistry of tumor progression"

Charlie Springer, PhD "Can MRI eliminate most breast and prostate biopsies?"

Dan Vigneron, PhD "Multinuclear MR spectroscopy using hyperpolarized carbon-13 metabolic imaging"

Dave Piston, PhD "It's complicated: Systems relationships in hormonal regulation of blood glucose"

Jeff Price, PhD "Kinetic image cytometry: HCS automation of cardiomyocyte action potential measurements"

Joe Gray, PhD Closing comments

