

Quantitative and Systems Pharmacology Workshop

09/25/2008 to 09/26/2008
 NIH - Lister Hill Auditorium
 Bethesda, Maryland



Agenda

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Quantitative and Systems Pharmacology Workshop

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Agenda

QUANTITATIVE & SYSTEMS PHARMACOLOGY WORKSHOP

Lister Hill Auditorium
 National Institutes of Health
 Bethesda, Maryland
 September 25-26, 2008

Thursday, September 25 Day 1

8:30 am Introduction and Overview
Michael Rogers, NIH/NIGMS

Problems and Opportunities

Session Chair: William (Bill) Jusko

8:45 am "Integration of Molecular Imaging Diagnostics with
 Small Systems Biology of Disease"
Michael Phelps, University of California, Los Angeles

9:15 "Tackling Patient-Specific Variation in Therapeutic Response:
 Systems Pharmacology of Gefitinib and Related Inhibitors of the
 EGF Receptor Network"
Peter Sorger, Harvard University

9:45 "Integrative Modeling of the Heart: From the Molecular to Organ Level"
Raimond Winslow, Johns Hopkins University

10:15 **BREAK**

10:45 "Bone Modeling Platform and its Utility in Drug Development"
Anna Georgieva, Novartis Corporation

11:15 **DISCUSSION: What are the addressable bottlenecks using systems
 perspectives and pharmacological interventions?**
Led by Douglas Lauffenburger and William Jusko

12:00 pm **LUNCH** (on your own, campus cafeterias available)

Methods and Approaches

Session Chair: Ravi Iyengar

1:00 pm "Developing a Quantitative Human Interactome"

Ravi Iyengar, Mount Sinai School of Medicine

- 1:30 "Network Modeling: Progression from Topology to Dynamics"
Reka Albert, Penn State University
- 2:00 "The Quantitative Systems Pharmacology Journey: Seeing Drug Discovery and Development Through New Eyes"
Sandy Allerheiligen, Eli Lilly

Poster Session with Refreshments (2:30 pm)**Lister Hill Atrium**

(Those attendees wishing to present a poster please click on the 'poster session' tab for instructions and deadlines - note: the deadline has been extended to August 15 for abstract submissions)

Methods and Approaches (cont.)**Session Chair: Stacey Tannenbaum**

- 3:30 pm "Integration of Information Using Physiologically Based Pharmacokinetic Models"
Ivan Nestorov, Biogen Idec
- 4:00 "New Modeling Methods Enable Unraveling Pharmacokinetic and Mechanistic Complexities"
C. Anthony Hunt, University of California, San Francisco
- 4:30 "Evolving Concepts of Complex Mechanistic Pharmacodynamic Models"
William Jusko, University of Buffalo

Friday, September 26*Day 2***Challenges and Obstacles****Session Chair: David D'Argenio**

- 8:30 am "Modeling and Analysis of Biophysical Networks"
Francis Doyle, University of California, Santa Barbara
- 9:00 "Using a Systems Model in Pharmacogenetic Association Studies"
Paul Thomas, SRI
- 9:30 "Modeling Uncertain Pharmacokinetic/ Pharmacodynamic Processes"
David D'Argenio, University of Southern California
- 10:00 **BREAK**
- 10:30 "Cellular and Model Systems in the Prediction and Interpretation of Cardiovascular Risk"
Garrett Fitzgerald, University of Pennsylvania
- 11:00 "Sharing, Re-use, and Combination of Systems Biology and Pharmacology Models: Challenges and Solutions (Mostly Challenges)"
Dean Bottino, Novartis Corporation
- 11:30 Strategic Plan, Support Mechanism
Jeremy Berg, NIH/NIGMS
- 12:00 pm **LUNCH** (on your own, campus cafeterias available)

Education and Training: Status and Future Needs**Session Chair: Fei Hua**

- 1:00 pm "Programs in Pharmacometrics"
Kim Brouwer, University of North Carolina
- 1:20 "Programs in Biogineering"

Douglas Lauffenburger, Massachusetts Institutes of Technology

1:40 "Programs in Systems Biomedicine"
Terry Krulwich, Mount Sinai School of Medicine

2:00 "Background Paper Overview"
Peter Lyster NIH/NIGMS

Breakout Sessions (2:20 pm)

Breakout Leaders: to be determined

(Leaders are suggested to identify someone other than the speakers on these topics to evoke 'Counterpoints' or two viewpoints as a start to discussions.)

Breakout Group 1: **Horizontal Systems Integration**

Breakout Group 2: **Vertical Systems Integration**

Breakout Group 3: **Quantitative Biology and Pharmacology**

Breakout Group 4: **Education & Training**

Breakout Group 5: **Data Analysis & Management**

Forward-Looking Summaries (3:20 pm)

Session Chair: Douglas Lauffenburger

4:30 pm *DEPARTURE*

Quantitative and Systems Pharmacology Workshop Poster Session

09/25/2008

Poster Session

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During the first day of the Quantitative and Systems Pharmacology Workshop, a poster session will be held in the Lister Hill Atrium from 2:30 to 3:30 pm. Posters boards will be 4' x 6'. Poster presenters are expected to put up their posters in the morning by the start of the workshop and to be present at their posters from 2:30 to 3:30 pm that day. Posters should be taken down by 5:30 pm.

Those attendees wishing to present posters should, upon registering, send an email to Dr. Dick Okita at okitar@nigms.nih.gov indicating their intention to present a poster by August 15 (date extended) and submit a one-page abstract to Dr. Okita. Attendees selected to present posters will be notified within two weeks whether they have been selected to present a poster.

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