

SCIENCE2006: FEEL THE POWER

Speaker and Activity Schedule

THURSDAY, 5 OCTOBER

7:30 AM **REGISTRATION / CONTINENTAL BREAKFAST** ALUMNI HALL FOYER

9:00 AM **SPOTLIGHT SESSION 1**
RNA: CELLULAR STRATEGIES FOR MAKING IT, MODIFYING IT, AND USING IT
SCIENCE LECTURE HALL, 3RD FLOOR

MODERATOR **James M. Pipas, Ph.D.**

SPEAKERS

Paula Grabowski, Ph.D. *Alternative Splicing and Biological Control*

Bino John, Ph.D. *Biogenesis and Functions of microRNAs*

Karen Arndt, Ph.D. *Analysis of Proteins that Couple Chromatin Changes to Transcription Elongation*

SPOTLIGHT SESSION 2
INTERACTIVE SEARCHING OF NON-INDEXED DATA
ROOM 531

MODERATOR **Mahadev Satyanarayanan, Ph.D.**

SPEAKERS

Mahadev Satyanarayanan, Ph.D. *Diamond: Interactive Search for Needles in a Haystack*

Ivet Bahar, Ph.D. *Biomolecular Systems Dynamics: From Structure to Function*

Andrew J. Connolly, Ph.D. *Streaming the Sky: Knowledge Discovery with a Virtual Telescope*

SPOTLIGHT SESSION 3
PREPARING FOR PANDEMICS
ROOM 531

MODERATOR **Ronald C. Montelaro, Ph.D.**

SPEAKERS

Donald S. Burke, M.D. *Can a Pandemic Be Contained? Computational Simulation of Strategic Options*

Elodie Ghedin, Ph.D. *Determinants of Influenza A Genome Variability*

Eric Toner, M.D. *Hospital Preparedness for Pandemic Influenza*

Andrea Gambotto, M.D. *Vaccine Development for Pandemic Influenza*

10:30 AM **REFRESHMENT & EXHIBIT BREAK** J.W. CONNOLLY BALLROOM, 1st FLOOR

11:00 AM **PLENARY SESSION 1 DICKSON PRIZE IN MEDICINE LECTURE**
AUDITORIUM, 7th FLOOR

WELCOME **Mark A. Nordenberg, J.D.**

INTRODUCTION OF SPEAKER **Arthur S. Levine, M.D.**

KEYNOTE SPEAKER **Roger D. Kornberg, Ph.D.** *Chromatin and Transcription*

12:30 PM **EXHIBITS & PIZZA LUNCH** J.W. CONNOLLY BALLROOM, 1st FLOOR

1:00 PM **POSTER SESSION 1** J.W. CONNOLLY BALLROOM, 1st FLOOR

- Regulation of Genes and Genomes
- Data Mining and Algorithms
- Infectious Diseases and Their Control
- Health, the Environment, and Sustainability
- Molecular Machines
- Medical Student Summer Research Posters

1:00 PM **SCIENCE AT WORK SESSION 1**
COMMERCIALIZATION CASE STUDIES
ROOM 532

MODERATOR **Marc S. Malandro, Ph.D.**

SPEAKERS

Marc S. Malandro, Ph.D.

Patricia Rogan

SCIENCE AT WORK SESSION 2
ENTREPRENEURSHIP AND CONFLICT OF INTEREST IN SCIENCE
ROOM 531

MODERATOR **Theresa J. Colecchia, J.D.**

SPEAKERS

Theresa J. Colecchia, J.D.

David Smith, J.D.

2:00 PM **SPOTLIGHT SESSION 4**

WIRING THE DEVELOPING BRAIN: GENES, MOLECULES, AND ACTIVITY
SCIENCE LECTURE HALL, 3RD FLOOR

MODERATOR **Peter L. Strick, Ph.D.**

SPEAKERS

Karl Kandler, Ph.D. *Developmental Plasticity at Auditory Synapses: A Ménage à Trois in Silence*

Guo-Qiang Bi, Ph.D. *Population Dynamics and Plasticity of Reverberating Activity in Neuronal Circuits*

Justin C. Crowley, Ph.D. *Balancing the Roles of Molecular Specification and Activity-Dependent Patterning in Visual System Development*

Alison Barth, Ph.D. *Activity-Dependent Changes in Cortical Circuitry During Development*

SPOTLIGHT SESSION 5
GENE-ENVIRONMENT INTERACTION
ROOM 532

MODERATOR **Seymour J. Garte, Ph.D.**

SPEAKERS

Aaron Barchowsky, Ph.D. *Angiogenic Gene Programs in Arsenic-Promoted Vascular Diseases*

Bruce R. Pitt, Ph.D. *Molecular Determinants of Cardiorespiratory Response to Zinc*

Emanuela Taioli, M.D., Ph.D. *Genetic Susceptibility to Environmental Carcinogens*

2:00 PM **SPOTLIGHT SESSION 6**
NATURE'S MOLECULAR MECHANICS—THE GREASE, THE OIL, AND THE AMINO ACIDS
ROOM 531

MODERATOR **Graham Hatfull, Ph.D.**

SPEAKERS

Sanford Leuba, Ph.D. *PcrA Helicase Engine and the Domino Effect*

Brooke M. McCartney, Ph.D. *Signal Transduction and the Cytoskeleton: The APC Connection*

David D. Hackney, Ph.D. *Kinesin Proteins as Motors for Moving Cargo along Microtubule Tracks*

Michael Trakselis, Ph.D. *The DNA Replication Machinery in Archaea: Coming Together for Fidelity*

3:30 PM **ICE CREAM & EXHIBIT BREAK** J.W. CONNOLLY BALLROOM, 1st FLOOR

4:00 PM **PLENARY SESSION 2 MELLON LECTURE** AUDITORIUM, 7th FLOOR

WELCOME AND INTRODUCTION OF SPEAKER **Karl Kandler, Ph.D.**

KEYNOTE SPEAKER **Carla J. Shatz, Ph.D.**

Dynamic Interplay between Nature and Nurture in Brain Development

5:00 PM **OPENING NIGHT RECEPTION AND TECHNOLOGY SHOWCASE**

WILLIAM PITT UNION, LOWER LOUNGE

A dynamic day of science requires a great wrap-up, right? All Science2006 registrants are invited to the Opening Night Reception and Technology Showcase, an ever-popular display of innovative new technologies developed by researchers from the University of Pittsburgh and Carnegie Mellon University that are now available for licensing. The Technology Showcase is being organized by Pitt's Office of Enterprise Development and Office of Technology Management. Come and mingle, network, and enjoy.

FRIDAY, 6 OCTOBER

7:30 AM **REGISTRATION/CONTINENTAL BREAKFAST** ALUMNI HALL FOYER

8:30 AM **PROFESSIONAL DEVELOPMENT WORKSHOP**
EARLY CAREER TRANSITIONS: EXPLORING YOUR PASSIONS AND
RECOGNIZING YOUR VALUE

Are you a graduate student or postdoc considering the next steps in your scientific career? If so, you won't want to miss this workshop. Peter S. Fiske, Ph.D., author of *Put Your Science to Work: The Take-Charge Career Guide for Scientists*, will present a practical overview of career planning and job hunting in today's market. He'll be joined by a variety of early career professionals from science-related fields who will offer insight and advice about opportunities in traditional and nontraditional settings. This workshop is being presented by the Office of Academic Career Development, Health Sciences, and the University of Pittsburgh Postdoctoral Association.

9:00 AM **SPOTLIGHT SESSION 7**
NATURE'S PHARMACOPOEIA
ROOM 531

MODERATOR **Billy W. Day, Ph.D.**

SPEAKERS

Barry Gold, Ph.D. *The Design and Characterization of Anticancer Compounds Based on Naturally Occurring DNA Minor Groove Binders*

Peter Wipf, Ph.D. *Parallel Synthesis and Biological Evaluation of Peptide Mimetics*

Dennis Curran, Ph.D. *Synthesis and Biological Evaluation of Dictyostatin Anticancer Agents*

SPOTLIGHT SESSION 8
NEUROTRANSMITTERS, TRANSPORTERS, AND RECEPTORS
SCIENCE LECTURE HALL, 3RD FLOOR

MODERATOR **Teresa G. Hastings, Ph.D.**

SPEAKERS

Susan G. Amara, Ph.D. *Excitatory Amino Acid Transporters: Keeping Up with Glutamate*

Anthony A. Grace, Ph.D. *Emotions and the Brain: How Neurotransmitters Control How We Feel*

Gonzalo E. Torres, Ph.D. *Not Just a Terminator: New Roles for the Dopamine Transporter*

J. Timothy Greenamyre, M.D., Ph.D. *Dopaminergic Degeneration in Parkinson's Disease*

SPOTLIGHT SESSION 9
MORPHOGENESIS—SHAPING TISSUES, ORGANS, AND ORGANISMS
ROOM 532

MODERATOR **Michael Tsang, Ph.D.**

SPEAKERS

Lance A. Davidson, Ph.D. *Reverse Engineering Morphogenesis*

Beth Stronach, Ph.D. *Genetic Control of Epithelial Tissue Closure*

Ivan V. Maly, Ph.D. *How T-Killer Cells Deliver the Kiss of Death: A Quantitative Systems Perspective*

10:30 AM **REFRESHMENT & EXHIBIT BREAK** J.W. CONNOLLY BALLROOM, 1st FLOOR

11:00 AM **PLENARY SESSION 3 KLAUS HOFMANN LECTURE** AUDITORIUM, 7th FLOOR

WELCOME AND INTRODUCTION OF SPEAKER **Barry Gold, Ph.D.**

KEYNOTE SPEAKER **Baldomero M. Olivera, Ph.D.**

Animal Biodiversity and Drug Discovery: Cone Snail Venoms, A Case Study

12:30 PM **HOAGIE LUNCH & LAST CALL FOR EXHIBITS** J.W. CONNOLLY BALLROOM, 1st FLOOR

1:00 PM **POSTER SESSION 2** J.W. CONNOLLY BALLROOM, 1st FLOOR

▪ Drug Discovery and Development

- Neuroscience
- Developmental Decisions and Dynamics
- Energy
- Imaging and Quantitation
- Pain

1:00 PM **SCIENCE AT WORK SESSION 3**
IBM/NATIONAL GEOGRAPHIC “GENOGRAPHIC” PROJECT
ROOM 531

MODERATOR **Margaret C. McDonald, Ph.D.**

SPEAKERS

Eleanor Feingold, Ph.D.

Ajay K. Royyuru, Ph.D.

SCIENCE AT WORK SESSION 4
MEETING THE CHALLENGES OF STARTING A LIFE SCIENCES COMPANY
ROOM 532

MODERATOR **Andrew Remes, Ph.D.**

SPEAKERS

James Jordan

John W. Manzetti

Richard Overmoyer

Alan West

2:00 PM **SPOTLIGHT SESSION 10**
ENERGY—FUTURE CHALLENGE TODAY
SCIENCE LECTURE HALL, 3RD FLOOR

MODERATOR **George E. Klinzing, Ph.D.**

SPEAKERS

Gerald D. Holder, Ph.D. *Natural Gas Hydrates—Energy and Climate Change*

Minking K. Chyu, Ph.D. *Challenges in Development of Hydrogen-Turbine and Fuel-Cell Hybrid Power Generation Systems*

Peyman Givi, Ph.D. *Models and Simulation of Turbulent Combustion*

SPOTLIGHT SESSION 11
NEW WAYS OF SEEING AND MEASURING THINGS
ROOM 532

MODERATOR **Simon Watkins, Ph.D.**

SPEAKERS

Joanne Yeh, Ph.D. *Coordinated Nanobiosensors: Integrating Atomic Resolution Views for Optimizing Signaling and Detection*

Guy Salama, Ph.D. *Three-Dimensional Imaging of Electrical Activity in the Heart*

Alan Waggoner, Ph.D. *Fluorescence Detection in Biomedicine...A Billion Dollar Industry*

Ronald B. Wetzel, Ph.D. *Looking at Amyloid as a Neurotoxin and as a Nanomaterial*

SPOTLIGHT SESSION 12

THE BIOLOGY OF PAIN

ROOM 531

MODERATOR **Gerald F. Gebhart, Ph.D.**

SPEAKERS

Gerald F. Gebhart, Ph.D. *Advances in the Neurobiology of Pain*

William C. deGroat, Ph.D. *Mechanisms Underlying Sensitization of Visceral Nociceptors*

Brian M. Davis, Ph.D. *These Neurons Are a Real Pain: Identification of Sensory Neurons that Make Life Miserable and What We Can Do about Them*

Kathryn Albers, Ph.D. *Growth Factors and the Sensory Neuron: Too Much of a Good Thing Can Hurt*

3:30 PM **REFRESHMENT BREAK ALUMNI HALL FOYER**

4:00 PM **PLENARY SESSION 4 PROVOST LECTURE AUDITORIUM, 7th FLOOR**

WELCOME AND INTRODUCTION OF SPEAKER **George E. Klinzing, Ph.D.**

KEYNOTE SPEAKER **Nathan S. Lewis, Ph.D.**

Scientific Challenges in Sustainable Energy Technology

5:00 PM **HOT SAUCE AND SCIENCE! SCIENCE2006 CLOSING BARBECUE AND CHALK TALKS**
CATHEDRAL OF LEARNING LAWN (ADJACENT TO THE LOG CABIN)