

Thursday, July 30, 2009

4:00 - 5:45 pm - Reception and Registration - Pick up conference materials at Khorana Auditorium (Room 175 Biochemistry Addition, 433 Babcock Drive)

Session 1 - *General*

6:00pm - Welcome

[Aseem Ansari](#), UW-Madison

6:05pm - 6:20pm - Comments

Chair: [Uttam RajBhandary](#), MIT

6:20pm - 6:40pm [Nucleic Acid Chemistry: From Gobind to the Present](#) - [Video](#)

[Marvin Caruthers](#), University of Colorado - Boulder

6:40pm - 7:00pm [Viral Membrane Fusion and its Inhibition](#) - [Video](#)

[Peter Kim](#), Merck

7:00pm - 7:20pm [The Metabolism and Function of Dehydroepiandrosterone](#) - [Video](#)

Henry Lardy, UW-Madison

7:20pm - 7:40pm [Deciphering the Genetic Code](#) - [Video](#)

[Marshall Nirenberg](#), National Institute of Health

7:40pm - 8:00pm [Regulation of Tumor Metastasis by MAP Kinase and MicroRNAs](#)

[Marsha Rosner](#), University of Chicago

Friday, July 31, 2009

Session 2 - Nucleic Acids

8:30am - Continental Breakfast

9:00am - 9:05am - Comments

Chair: Hara Ghosh

9:05am - 9:25am [Non-B DNA Conformations, Mutagenesis and Disease](#) - [Video](#)

[Robert Wells](#), Texas A&M

9:25am - 9:45am [Bisulfite Modification of Nucleotides: Mechanistic Consideration leading to improved Protocols of DNA Methylation Analysis](#) - [Video](#)

[Hikoya Hayatsu](#), Okayama University

9:45am - 10:05am [The Puzzle of Prophage \$\lambda\$ Stability](#) - [Video](#)

[Sankar Adhya](#), National Cancer Institute

10:05am - 10:25am [The Genetic Code Revisited – Four Decades after Francis Crick](#) - [Video](#)

[Dieter Söll](#), Yale

10:25am - 10:45am - Coffee Break

10:45am - 10:50am - Comments

Chair: Takao Sekiya

10:50am - 11:10am [One RNA Aptamer Sequence, Two Structures: A Collaborating Pair that Competitively Inhibits AMPA Receptors](#) - [Video](#)

[Li Niu](#), University at Albany

11:10am - 11:30am [The Hopeful Cornucopia - A study into Combinatorial Gene Synthesis](#) - [Video](#)

[Hans-Joachim Fritz](#), Georg-August-Universität

11:30am - 11:50am [Efficient Synthesis of Oligonucleotide Conjugates on Solid-Support Using an \(Aminoethoxycarbonyl\) aminoethyl Group for 5'-Terminal Modification](#) - [Video](#)

[Eiko Ohtsuka](#), AIST

11:50am - 12:10pm [The First Crystallographic Structure of Mammalian Phosphofructokinase from Rabbit Skeletal Muscle](#) - [Video](#)

[Simon Chang](#), LSU

12:10pm - 1:45pm - Lunch and Poster Session

Session 3 - Membranes, Receptors and Signaling

1:45pm - 1:50pm - Comments

Chair: Pere Garriga

1:50pm - 2:10pm [Gobind Khorana and My Current Research on Drosophila Behavior](#) - [Video](#)

[Julius Adler](#), UW-Madison

2:10pm - 2:30pm [Oxygen Control of Cyclic di-GMP Homeostasis](#) - [Video](#)

[Marie-Alda Gilles-Gonzalez](#), UT Southwestern

2:30pm - 2:50pm [Gobind Khorana and the “Central Dogma” of Receptor Activation](#) - [Video](#)

[Wayne Hubbell](#), UCLA

2:50pm - 3:10pm [Heptahelical Receptors: Ligand Recognition and Conformational Dynamics in Bilayers](#) - [Video](#)

[Thomas Sakmar](#), Rockefeller

3:10pm - 3:30pm [Dynamics of G-Protein Coupled Receptor \(GPCR\) Activation and Attenuation: Insights from Fluorescence Studies](#) - [Video](#)

[David Farrens](#), Oregon Health & Science

3:30pm - 4:00pm - Break

4:00pm - 4:05pm - Comments

Chair: Umesh Varshney

4:05pm - 4:25pm [Pharmacogenetics of the Human Prostacyclin Receptor: "hIP, SNiP COX and Vioxx"](#) - [Video](#)

[John Hwa](#), Dartmouth

4:25pm - 4:45pm [Signaling via Structure Change: NMR Analysis of GPCR and G protein Activation](#) - [Video](#)

[Kevin Ridge](#), University of Texas

4:45pm - 5:05pm [Learning from Rhodopsin about Metabotropic Glutamate Receptors](#) - [Video](#)

[Judith Klein-Seetharaman](#), University of Pittsburgh

5:05pm - 5:25pm [Oncogenic Kit Receptor Signaling and Targeted Molecular Therapies – in Mouse Models of Gastrointestinal Stromal Tumor](#) - [Video](#)

[Peter Besmer](#), Sloan-Kettering

6:00pm - 10:00pm - Madison Club Reception

Saturday, August 1, 2009

Session 4 - Genes and Regulation

8:00am - Continental Breakfast

8:25am - 8:30am - Comments

Co-Chairs: Molly Jahn & Masayasu Nomura

8:30am - 8:55am [Binding Reactions: Epigenetic Switches, Signal Transduction, Evolution and Cancer](#) - [Video](#)

[Mark Ptashne](#), Sloan Kettering

8:55am - 9:20am [Transcription Factors as Targets for Cancer Therapy - Video](#)

[Peter Dervan](#), Caltech

9:20am - 9:45am [RNA as a Gene Regulation Modality - Video](#)

[Phillip Sharp](#), MIT

9:45am - 10:05am [Dissecting the roles of X. laevis miRNAs and Ago proteins in RISC activity - Video](#)

[James Dahlberg](#), UW-Madison

10:05am - 10:30am [Large Structured Non-coding RNAs Revealed by Bacterial Metagenome Analysis - Video](#)

[Ronald Breaker](#), Yale

10:30am - 10:45am - Coffee Break

Session 5 - Genomes, Networks, Systems and Molecular Medicine

10:45am - 10:50pm - Comments

Chair: Lloyd Smith

10:50am - 11:15am [Systems Biology, Transforming Technologies and the Emergence of P4 Medicine \(Predictive, Personalized, Preventive and Participatory\) - Video](#)

[Lee Hood](#), Systems Biology

11:15am - 11:40am [Programming Cell State - Video](#)

[Richard Young](#), Whitehead Institute - MIT

11:40am - 12:05pm [The "Dark Matter" of Biological Regulation? - Video](#)

[Patrick Brown](#), Stanford

12:05pm - 12:25pm [Acquired Stress Resistance in Yeast: Multiple Means to the Same End - Video](#)

[Audrey Gasch](#), UW-Madison

12:30pm - 2:30pm - Lunch and Poster Session (Continued)

Session 6 - Rewiring Cell Fate and Signaling Pathways

2:30pm - 2:35pm - Comments

Chair: Jennifer Reed

2:35pm - 2:55pm [Human Induced Pluripotent Stem Cells Derived with Episomal Vectors - Video](#)

[James Thomson](#), UW-Madison

2:55pm - 3:20pm [Biological Innovation: The Evolution and Engineering of New Signaling Systems - Video](#)

[Wendell Lim](#), UCSF

3:20pm - 3:40pm [Chemical Probes of Receptor Assembly in Signaling - Video](#)

[Laura Kiessling](#), UW-Madison

Session 7 - Rewiring Genes and Networks (Biofuels)

3:40pm - 3:45pm - Comments

Chair: Tim Donohue

3:45pm - 4:10pm [Synthetic Biology for Synthetic Fuels - Video](#)

[Jay Keasling](#), Berkley

4:10pm - 4:30pm [Genome-scale Chromosomal Engineering of Bacterial Hosts for Bioenergy Production - Video](#)

[Robert Landick](#), UW-Madison

4:30pm - 4:45pm - Break

Session 8A - Origins and Designing Life - Synthetic Life

4:45pm - 4:50pm - Comments

Chair: Aseem Ansari

4:50pm - 5:15pm [Making a Synthetic Cell - Video](#)

[Hamilton Smith](#), J. Craig Venter Institute

5:15pm - 5:40pm [Reading and Writing Genomes - Video](#)

[George Church](#), Harvard Medical

5:40pm - 6:05pm [Questions about Questions about the Origin of Life - Video](#)

[George Whitesides](#), Harvard

6:05pm - 6:30pm [Synthetic Biology in Ethical Perspective - Video](#)

[Alta Charo](#), UW-Madison

7:00pm - 9:00pm - Banquet (Pyle Center - Alumni Lounge, 702 Langdon Street)

Violin Concerto - [Ptashne with Adrian Levine & Sara Sitzer](#)

Banquet speaker: [William Dove](#)

Sunday, August 2, 2009

Session 8B - Origins and Designing Life - Synthetic Genes and Genomes

8:00am - 8:25am - Continental Breakfast

8:25am - 8:30am - Comments & Synthetic multi-cullular systems biology - [Video](#)

Chair: Eric Werner

8:30am - 8:50am [Reducing the genome of *E. coli*: a top down approach to synthetic biology](#) - [Video](#)

[Fredrich Blattner](#), UW-Madison

8:50am - 9:15am To Be Announced - [Video](#)

[Thomas Knight](#), MIT

9:15am - 9:40am [The Physics of Genome Management](#) - [Video](#)

[Rob Phillips](#), Caltech

Session 9 - Nano-Devices and Biomachines

9:40am - 9:45am - Comments

Co-Chairs: Franco Cerrina & George Phillips

9:45am - 10:10am [DNA: Not Merely the Secret of Life](#) - [Video](#)

[Nadrian Seeman](#), New York University

10:10am - 10:35am [Programmable Self-assembly of DNA into Nanoscale Three-dimensional Shapes](#) - [Video](#)

[William Shih](#), Harvard Medical

10:35am - 10:55am [Top Down Meets Bottom Up: Controlled Placement of DNA Nanostructures](#) - [Video](#)

[Ryan Kershner](#), UW-Madison

Session 10 - Development, Disease and Drug Design

10:55am - 11:00am - Comments

Co-Chairs: James Ntambi & Hasan Mukhtar

11:00am - 11:25am [Transcriptional Precision in the *Drosophila* Embryo](#) - [Video](#)

[Michael Levine](#), Berkeley

11:25am - 11:45am [Gene Networks and Type 2 Diabetes](#) - [Video](#)

[Alan Attie](#), UW-Madison

11:45am - 12:05pm [Direct Inhibition of the Notch Transactivation Complex - Video](#)

[James Bradner](#), Dana-Farber Cancer Institute

12:05pm - 12:25pm - Closing Remarks

[Waclaw Szybalski](#), UW-Madison