



The Biology and Chemistry of Vision

Sunday, June 14 – Friday, June 19, 2009
Snowmass, Colorado

Organizer:

King-Wai Yau
Johns Hopkins Univ. School of Medicine
Baltimore, MD

Co-Organizer:

Theodore G. Wensel
Baylor College of Medicine
Houston, TX

Sunday, June 14, 2009

- | | |
|---------------------------|--|
| 4:00 PM – 9:00 PM | Conference Registration |
| 6:00 PM – 7:00 PM | FASEB Opening Reception |
| 7:00 PM – 8:30 PM | Dinner |
| 8:30 PM – 9:30 PM | Gregory Hageman , Univ. of Iowa
<i>"Insights pertaining to a key role for the complement system in the etiology of age-related macular degeneration"</i> |
| 9:30 PM – 10:45 PM | Data Blitz: 5-min, 1-2 slide presentations of recent, exciting results, selected from poster submissions |

Monday, June 15, 2009

- | | |
|--------------------------------------|--|
| 7:30 AM – 9:00 AM | Breakfast |
| Session 1: 9:00 AM – 12:40 PM | Pigment and Regeneration
Session Chair: Rosalie Crouch , Medical Univ. of South Carolina |
| 9:00 AM – 9:15 AM | FASEB Welcome Remarks and Announcements of Outdoor Activities |
| 9:15 AM – 9:50 AM | Speaker 1: Oliver P. Ernst , Charité – Universitätsmedizin Berlin, Germany
<i>"Rhodopsin-transducin interaction: Insight from functional and structural studies"</i> |

- 9:50 AM – 10:25 AM **Speaker 2: Kris Palczewski**, Case Western Reserve Univ.
“Analysis of water molecules in family A (rhodopsin-like) G protein coupled receptors”
- 10:25 AM – 11:00 AM **Speaker 3: Akihisa Terakita**, Osaka City Univ., Japan
“Molecular and functional properties of non-visual bistable pigments”
- 11:00 AM – 11:30 AM Group photo and FASEB Sponsored Coffee Break
- 11:30 AM – 12:05 AM **Speaker 4: Masahiro Kono**, Medical Univ. of South Carolina
“Ligand control of cone activation, trafficking and pigment regeneration”
- 12:05 AM – 12:40 PM **Speaker 5: Vladimir Kefalov**, Washington Univ. St Louis
“A cone-specific visual cycle in the rod-dominant mammalian retina?”
- 12:40 PM – 1:30 PM Lunch
- 1:30 PM – 4:00 PM **Free Time**
- 4:00 PM – 6:00 PM Poster Session 1**
- 6:00 PM – 7:00 PM Dinner

Session 2: 7:00 PM – 10:00 PM

Photoreceptor: Physiology
Session Chair: Clint Makino, Harvard Medical School

- 7:00 PM – 7:30 PM **Speaker 1: Yiannis Koutalos**, Medical Univ. of South Carolina
“Formation of all-trans retinol in single mouse rod photoreceptors”
- 7:30 PM – 8:00 PM **Speaker 2: Gordon Fain**, Univ. of California at Los Angeles
“Mechanism of adaptation of mammalian rods to real and equivalent background light”
- 8:00 PM – 8:30 PM **Speaker 3: Dong-Gen Luo**, Johns Hopkins Univ. School of Medicine
“A Principle of Photo- and Thermal-Activation of Visual Pigments”
- 8:30 PM – 9:00 PM Break
- 9:00 PM – 9:30 PM **Speaker 4: Tomoki Isayama**, Harvard Medical School
“Evidence for the binding of more than one retinoid by opsin”
- 9:30 PM – 10:00 PM **Speaker 5: Alapakkam Sampath**, Univ. of Southern California
“Optimal processing of the rod photoresponse is critical for scotopic vision”

Tuesday, June 16, 2009

- 7:30 AM – 9:00 AM Breakfast

Session 3: 9:00 AM – 12:25 PM

Photoreceptor: Biochemistry
Session Chair: Robert Molday, Univ. of British Columbia, Canada

- 9:00 AM – 9:35 AM **Speaker 1: James Hurley**, Univ. of Washington, Seattle
“Energy routing in the outer retina: supply, demand and distribution”

- 9:35 AM – 10:10 AM **Speaker 2: Stephan Neuhaus**, Univ. of Zurich, Switzerland
“Zebrafish earning its stripes: an evolutionary twist to cone vision”
- 10:10 AM – 10:45 AM **Speaker 3: Nikolai Artemyev**, Univ. of Iowa
“Characterization of human PDE6 ectopically expressed in Xenopus laevis rods”
- 10:45 AM – 11:15 AM FASEB Sponsored Coffee Break
- 11:15 AM – 11:50 AM **Speaker 4: Robert Eugene Anderson**, Univ. of Oklahoma, Oklahoma City
“Outer segment signaling via the insulin receptor-PI3K pathway”
- 11:50 AM – 12:25 PM **Speaker 5: Alecia Gross**, Univ. of Alabama, Birmingham
“Functional dynamics of rhodopsin”
- 12:30 PM – 1:30 PM Lunch
- 1:30 PM – 4:00 PM **Free Time**
- 4:00 PM – 6:00 PM Poster Session 2**
- 6:00 PM – 7:00 PM Dinner

Session 4: 7:00 PM – 9:50 PM

Photoreceptor: Cell Biology
Session Chair: Joe Besharse, Medical College of Wisconsin

- 7:00 PM – 7:35 PM **Speaker 1: Joe Besharse**, Medical College of Wisconsin
“Phosphorylation of Kif17 kinesin regulates IFT transport into the outer segment”
- 7:35 PM – 8:10 PM **Speaker 2: Ching-Hwa Sung**, Cornell Weill Medical College
“Opsin transport and disc membrane biogenesis in mammalian photoreceptor”
- 8:10 PM – 8:40 PM Break
- 8:40 PM – 9:15 PM **Speaker 3: Kang Zhang**, Univ. of California at San Diego
“Genetic and molecular analysis of photoreceptor disk morphogenesis”
- 9:15 PM – 9:50 PM **Speaker 4: Vadim Arshavsky**, Duke Univ. Medical Center
“The outer segment serves as a default destination for the trafficking of membrane proteins in photoreceptors”

Wednesday, June 17, 2009

7:30 AM – 8:30 AM Breakfast

Session 5: 8:30 AM – 11:55 PM

Photoreceptor: Development
Session Chair: Pamela Raymond, Univ. of Michigan, Ann Arbor

- 8:30 AM – 9:05 AM **Speaker 1: Thomas Reh**, Univ. of Washington, Seattle
“Factors that control early cone photoreceptor cell development”

- 9:05 AM – 9:40 AM **Speaker 2: Brian Link**, Medical College of Wisconsin
“Cell polarity and subcellular dynamics cooperate to regulate retinal neurogenesis”
- 9:40 AM – 10:15 AM **Speaker 3: Connie Cepko**, Harvard Medical School
“Development of rod and cone photoreceptors”
- 10:15 AM – 10:45 AM FASEB Sponsored Coffee Break
- 10:45 AM – 11:20 AM **Speaker 4: Pamela Raymond**, Univ. of Michigan, Ann Arbor
“Formation of photoreceptor mosaics”
- 11:20 AM – 11:55 PM **Speaker 5: Seth Blackshaw**, Johns Hopkins Univ. School of Medicine
“Transcriptional control of photoreceptor development”
- 12:00 PM – 1:00 PM Lunch
Optional Raft Trip (12:30 – 5:45 PM)
- 1:00 PM – 4:00 PM **Free Time**
- 4:00 PM – 6:00 PM** **Poster Session 3**
- 6:00 PM – 7:00 PM Dinner
- Session 6: 7:00 PM – 9:50 PM** **Non-Rod/Non-Cone Photoreceptor**
Session Chair: David Berson, Brown Univ.
- 7:00 PM – 7:35 PM **Speaker 1: David Berson**, Brown Univ.
“Ganglion-cell photoreceptors: new types, new circuits”
- 7:35 PM – 8:10 PM **Speaker 2: Robert Lucas**, Univ. of Manchester, UK
“Functional interactions between melanopsin and rod/cone visual pathways”
- 8:10 PM – 8:40 PM Break
- 8:40 PM – 9:15 PM **Speaker 3: Satchidananda Panda**, Salk Institute
“Molecules and circuits of melanopsin signaling”
- 9:15 PM – 9:50 PM **Speaker 4: Douglas McMahon**, Vanderbilt Univ.
“Intra-retinal signaling by ganglion cell photoreceptors to dopaminergic amacrine cells: The retina as two-way street”

Thursday, June 18, 2009

7:30 AM – 9:00 AM Breakfast

Session 7: 9:00 AM – 11:50 AM **Disease/Animal Models**
Session Chair: Wolfgang Baehr, Univ. of Utah School of Medicine

9:00 AM – 9:35 AM **Speaker 1: Doug Gould**, Univ. of California at San Francisco
“Mechanisms of Col4a1-related retinopathy and their relevance to AMD”

9:35 AM – 10:10 AM	Speaker 2: Patsy Nishina , The Jackson Laboratory <i>“Use of ENU mutagenesis to elucidate molecules and pathways important in vision”</i>
10:10 AM – 10:40 AM	FASEB Sponsored Coffee Break
10:40 AM – 11:15 AM	Speaker 3: John Wilson , Baylor College of Medicine <i>“Rhodopsin gene correction in mouse rod cells”</i>
11:15 AM – 11:50 AM	Speaker 4: Robert Molday , Univ. of British Columbia, Canada <i>“Mechanisms in retinal degenerative diseases”</i>
12:30 PM – 1:00 PM	Business Meeting – IMPORTANT!!
1:00 PM – 2:00 PM	Lunch
2:00 PM – 3:00 PM	Free Time
Session 8: 3:00 PM – 5:50 PM	Retinal Therapy Session Chair: Jean Bennett , Univ. of Pennsylvania School of Medicine
3:00 PM – 3:35 PM	Speaker 1: Jean Bennett , Univ. of Pennsylvania School of Medicine <i>“Effects of age at enrollment on efficacy in a gene therapy clinical trial for congenital blindness”</i>
3:35 PM – 4:10 PM	Speaker 2: Jayakrishna Ambati , Univ. of Kentucky School of Medicine <i>“Arresting geographic atrophy”</i>
4:10 PM – 4:40 PM	Break
4:40 PM – 5:15 PM	Speaker 3: Botond Roska , Friedrich Miescher Institute, Switzerland <i>“Circuit specific optogenetic approaches to restore photosensitivity in retinal degeneration”</i>
5:15 PM – 5:50 PM	Speaker 4: Richard Masland , Harvard Medical School <i>“Restoration of visual function by ectopic expression of melanopsin in rd mice”</i>
6:00 PM – 7:00 PM	Dinner
Session 9: 7:00 PM – 9:50 PM	Retinal Pigment Epithelium Session Chair: Silvia Finnemann , Fordham Univ.
7:00 PM – 7:35 PM	Speaker 1: Silvia Finnemann , Fordham Univ. <i>“Signaling mechanisms controlling RPE phagocytosis”</i>
7:35 PM – 8:10 PM	Speaker 2: Janet Sparrow , Columbia Univ. College of Physicians and Surgeons <i>“The bisretinoids that constitute RPE lipofuscin. Role in macular degeneration”</i>

8:10 PM – 8:40 PM

Break

8:40 PM – 9:15 PM

Speaker 3: Criss Hartzell, Emory Univ.
“Chloride channel function in RPE”

9:15 PM – 9:50 PM

Speaker 4: Amir Rattner, Johns Hopkins School of Medicine
“Retinal pigment epithelium: an early target for the immune system in age-related macular degeneration”

Friday, June 19, 2009

7:30AM – 9:00AM

Breakfast

9:00AM

Departure
Box Lunches Available

END OF CONFERENCE

For additional information contact:
FASEB Summer Research Conferences
9650 Rockville Pike
Bethesda, MD 20814

snowmass@faseb.org

<http://src.faseb.org>