

FASEB SUMMER RESEARCH CONFERENCES

ION CHANNEL REGULATION

JUNE 7 – 12, 2009

SNOWMASS VILLAGE, COLORADO

ORGANIZERS:

LORI ISOM

JOHN ADELMAN

THE FEDERATION GRATEFULLY ACKNOWLEDGES THE FOLLOWING
EDUCATIONAL GRANTS FOR THE
FASEB SUMMER RESEARCH CONFERENCES:

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**CONTINUING MEDICAL
EDUCATION
(CME)**

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This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) by the Federation of American Societies for Experimental Biology (FASEB). FASEB is accredited by the ACCME to provide continuing medical education for physicians.

FASEB designates this educational activity for a maximum of 30 AMA PRA Category 1 Credit(s)[™]. Physicians should only claim credit commensurate with the extent of their participation in the activity.

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Any questions please contact fasebcme@faseb.org or call the FASEB CME Office at 301-634-7010. There is a \$45.00 application fee, payable upon submission of the form.

Meeting Objective/Target Audience

The objective of this meeting is to provide a forum for the exchange of new research by scientists and investigators. At the completion of the conference, participants should be able to: 1) discuss the research underway and/or the current topics relevant to their areas of interest; 2) demonstrate a gained level of insight into the methods being used by researchers and practitioners in these fields; and 3) describe a personal exposure to several stimulating areas of inquiry with speakers in related areas. These conferences are targeted to clinical practitioners, research scientists, and medical education professionals.

Disclosure Policy

The Federation requires that audiences at FASEB sponsored educational programs be informed of a presenter's (speakers, faculty, authors, and contributors) academic and professional affiliations, and the existence of any significant financial interest or other relationship a presenter has with the manufacturer(s) of any commercial product(s) discussed in an educational presentation. This policy allows the listener/attendee to be fully informed in evaluating the information being presented. When an unlabeled use of a commercial product, or an investigational use not yet approved for any purpose is discussed during the presentation, it is required that presenter's disclose that the product is not labeled for the use under discussion or that the product is still investigational.

Disclosure includes any relationship that may bias one's presentation or which, if known, could give the perception of bias. These situations may include, but are not limited to: 1) stock options or bond holdings in a for-profit corporation or self-directed pension plan; 2) research grants; 3) employment (full or part-time); 4) ownership or partnership; 5) consulting fees or other remuneration; 6) non-remunerative positions of influence such as officer, board member, trustee, spokesperson; 7) receipt of royalties; 8) speakers bureau. For full time employees of industry or government, the affiliation listed in the program will constitute full disclosure.

The following presenters have indicated a relationship which, in the context of their presentation, could be perceived by some as a real or apparent conflict of interest but do not consider that it will influence their presentation. The disclosures have been reviewed and conflicts of interest resolved or managed by the Conference Organizer in accordance with the ACCME Standards for Commercial Support found in the SRC Organizer Manual. The number following each company name represents the specific relationship from the list above.

Invited Speaker/Abstract Author Disclosures: Ion Channel Regulation

Dib-Hajj, Sulayman	CV Therapeutics	2	S11700-022
Lawson, Sally	Johnson and Johnson Astrazeneca	2 2	S11700-032
Ptacek, Louis	Pfizer	5	S11700-005
Surprenant, Annmarie	AztraZeneca Pharmaceuticals Sanofi-Aventis	2 5	S11700-020
Welsh, Michael	Exemplar Genetics	1	S11700-031

Speakers not listed above have indicated there are not any conflicts to disclose.

FINAL CONFERENCE PROGRAM

**NO PART OF THE CONFERENCE PROCEEDINGS MAY BE REFERENCED. PLEASE
CONTACT AUTHORS DIRECTLY FOR PERMISSION TO CITE THEIR WORK.**

2009 FASEB Summer Research Conferences

Ion Channel Regulation June 7-12, 2009 Snowmass Village, CO

Co-Chairs:

Lori Isom

Univ. of Michigan
Ann Arbor, MI

John Adelman

Vollum Institute
Oregon Health & Science Univ.
Portland, OR

Sunday, June 7, 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 - 9:40 pm	Keynote address
8:30 pm - 8:40 pm	Introduction, Lori Isom, Dept. of Pharmacology, Univ. of Michigan
8:40 pm - 9:40 pm	William A. Catterall, Dept. of Pharmacology, Univ. of Washington Regulation of Sodium and Calcium Channels by Signaling Complexes
	Discussions continue at the pub.

Monday, June 8, 2009

7:30 am - 9:00 am	Breakfast
9:00 am - 9:15	Welcome from FASEB
Session 1: 9:15 am - 12:20 pm	Cardiac Ion Channels and Arrhythmia Chair: Jeanne Nerbonne, Dept. of Developmental Biology, Washington Univ., St. Louis, MO
9:15 am - 9:50 am	Jeanne Nerbonne Molecular determinants of voltage-gated K ⁺ channel diversity and function

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9:50 am - 10:25 am	Al George, Director Institute of Integrative Genomics, Depts. of Medicine and Pharmacology, Vanderbilt Univ. Inherited disorders of cardiac sodium channels
10:25 am - 11:00 am	Jon Makielski, Depts. of Medicine and Physiology, Univ. of Wisconsin Arrhythmia mutation in ChIPs causing dysregulation of the cardiac Na ⁺ channel
11:00 am - 11:30 am	Break and Group Photo
11:30 am - 12:05 am	Isabelle Deschênes, Heart and Vascular Center, Case Western Reserve Univ. Role of sodium channel polymorphisms in arrhythmias
12:05 am - 12:20 pm	Late-breaking session: Dan Zhang, Univ. of Minnesota A novel biological activity of praziquantel requiring voltage-operated calcium channel β subunits: subversion of flatworm regenerative polarity
12:20 pm - 1:20 pm	Lunch
<i>Free Afternoon</i>	
4:00 pm - 6:00 pm	Poster Session
6:00 pm - 7:00 pm	Dinner
Session 2: 7:00 pm - 10:05 pm	Ion channel multiprotein complexes Session Chair: Indira Raman, Dept. of Neurobiology and Physiology, Northwestern Univ.
7:00 pm - 7:35 pm	Indira Raman Biophysical and molecular mechanisms of resurgent Na ⁺ current
7:35 pm - 8:10 pm	Peter Mohler, Dept. of Internal Medicine, Univ. of Iowa Ankyrin-based pathways of ion channel targeting
8:10 pm - 8:45 pm	Break
8:45 pm - 9:20 pm	Leonard Kaczmarek, Dept. of Pharmacology, Yale Univ. Non-conducting functions of the intracellular domains of sodium-activated potassium channels

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9:20 pm - 9:55 pm	Matthew Rasband, PhD, Dept. of Neuroscience, Baylor College of Medicine Ion channel complexes at nodes of Ranvier and axon initial segments
9:55 pm - 10:05 pm	Late-breaking session: Mark Dell'Acqua, Univ. of Colorado Enzyme Anchoring Dynamics In A Neuronal Ion Channel Signaling Complex Promote Transduction Of Membrane Proximal Calcium Signals To The Nucleus
10:10 pm	Continuation of scientific discussions in the pub.

Tuesday June 9, 2009:

7:30 am - 9:00 am

Breakfast

Session 3: 9:00 am - 11:55 am

Signaling mechanisms in synaptic plasticity

Chair: Richard W. Tsien, Dept. of Molecular and Cellular Physiology, Stanford Univ.

9:00 am - 9:35 am

Richard W. Tsien
Calcium-permeable channels and transsynaptic coordination

9:35 am - 10:10 am

Dax Hoffman, National Institutes of Health
Dendritic signal processing in CA1 pyramidal neurons of the hippocampus

10:10 am - 10:30 am

Break

10:30 am - 11:05 am

Anita Lüthi, Dept. of Cell Biology and Morphology, Univ. of Lausanne
SK2 channel gating in thalamus: implications for sleep

11:05 am - 11:40 am

Stefan Herlitze, Dept. of Neurosciences Cleveland Clinic, Case Western Reserve Univ.
Control of ion channel modulation, synaptic plasticity and neuronal circuits by light

11:40 am - 11:55 am

Late-breaking session: Rajesh Khanna, Indiana Univ. School of Medicine
A Novel Role For Crmp-2 In Neurotransmitter Release Via Interaction With Presynaptic Ca²⁺ Channels

12 noon - 1:00 pm

Lunch

1:00 pm - 2:30 pm

Free period

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2:30 pm - 4:00 pm	Conversation Café: Silvertree Hotel Meeting room location: TBA. We will get together to informally discuss current issues in research, research funding, mentoring, and science education (and eat snacks!)
4:00 pm - 6:00 pm	Poster Session
6:00 pm - 7:00 pm	Dinner
Session 4: 7:00 pm - 9:50 pm	Calcium channels in disease Chair: Annette Dolphin, Laboratory of Cellular and Molecular Neuroscience, Dept. of Pharmacology, Univ. College London
7:00 pm - 7:35 pm	Annette Dolphin Functional biology of the voltage-gated calcium channel $\alpha 2\delta$ subunits
7:35 pm - 8:10 pm	Jorg Striessnig, Dept. of Pharmacology and Toxicology, Univ. of Innsbruck Role of voltage-gated L-type Ca^{2+} channel isoforms for brain function
8:10 pm - 8:25 pm	Break
8:25 pm - 9:00 pm	Bernd Fakler, Dept. of Physiology, Univ. of Freiburg Analysis of protein supercomplexes association with voltage-gated calcium channels
9:00 pm - 9:35 pm	Xiaofei Du, Dept. of Neurology, Univ. of Chicago Molecular pathogenesis of spinocerebellar ataxia type 6
9:35 pm - 9:50 pm	Late-breaking session: William Sather, Univ. of Colorado, Denver Localized Calcineurin in Ca^{2+} -dependent inactivation of L-type Ca^{2+} channels
10 pm	Continuation of scientific discussions in the pub.

Wednesday, June 10, 2009

7:30 am - 9:00 am	Breakfast
Session 5: 9:00 am - 12:05:pm	Regulation of Ion Channel Expression Chair: *Michael J. Welsh, Howard Hughes Medical Institute, Univ. of Iowa

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9:00 am - 9:35 am	*Michael J. Welsh The pathophysiology of airway disease in cystic fibrosis
9:35 am - 10:10 am	Doo Yeon Kim, Mass General Institute for Neurodegenerative Disease, Harvard Univ. Regulation of sodium channel expression by BACE1 and gamma secretase
10:10 am - 10:45 am	Angeles Ribera, Dept. of Physiology and Biophysics, Univ. of Colorado Role of Na _v 1.6 sodium channels in zebrafish motor neuron development
10:45 am - 11:15 am	Break
11:15 am - 11:50 am	Ricardo Dolmetsch, Dept. of Chemical and Systems Biology, Stanford Univ. The C terminus of the L-type voltage-gated calcium channel Ca _v 1.2 encodes a transcription factor
11:50 am - 12:05 pm	Late-breaking session: Raffaella Rusconi, Neurological Institute C.Besta Folding defective epileptogenic Nav1.1 mutants rescued by interacting proteins and pharmacological chaperones
12:10 pm - 1:10 pm	Lunch
Session 6: 1:30 pm - 4:25 pm	Ion Channels and Epilepsy Miriam Meisler, Dept. of Human Genetics, Univ. of Michigan
1:30 pm - 2:05 pm	Miriam Meisler Genetic modifiers and pathogenesis of inherited epilepsy.
2:05 pm - 2:40 pm	Tom Ferraro, Dept. of Psychiatry, Center for Neurobiology and Behavior, Univ. of Pennsylvania Genetic influence on seizure susceptibility mediated by Kcnj10 variation
2:40 pm - 3:00 pm	Massimo Mantegazza, Dept. of Neurophysiopathology, Istituto Neurologico C. Besta, Milan, Italy, Univ. Paris V, Paris, France Mutations of Nav1.1 sodium channel and inherited epilepsy

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3:00 pm - 3:35 pm	*Louis J. Ptacek, MD, Howard Hughes Medical Institute, Dept. of Neurology, UCSF Genetic and molecular characterization of episodic neurological phenotypes
3:35 pm - 4:10 pm	Late-breaking session: Roger Simon, Director, Neurobiology Research, Legacy Clinical Research and Technology Center Seizures and Acid Sensing Ion Channels
4:30 pm - 6:00 pm	Poster Session
6:00 pm - 7:00 pm	Dinner
Session 7: 7:00 pm - 9:15 pm	Sodium channels and neuropathic pain Chair: *Sally Lawson, Dept. of Physiology, Medical School, Bristol Univ.
7:00 pm - 7:35 pm	*Sally Lawson Spontaneous pain, both neuropathic and inflammatory, is related to frequency of spontaneous firing in intact C-fiber nociceptors.
7:35 pm - 8:10 pm	*Sulayman.Dib-Hajj, Dept. of Neurology, Yale Univ. Mutations in sodium-channel gene SCN9A cause a spectrum of human genetic pain disorders
8:10 pm - 8:35 pm	Break
8:25 pm - 9:00 pm	Isabelle Decosterd, Dept. of Anesthesiology, Univ. Hospital Center and Univ. of Lausanne Transcriptional and functional profiles of voltage-gated Na(+) channels in injured and non-injured DRG neurons in the SNI model of neuropathic pain.
9:00 pm - 9:35 pm	Kenji Okuse, Division of Cell and Molecular Biology, Faculty of Natural Sciences, Imperial College London Pain signaling pathways: from cytokines to ion channels
9:35 pm - 9:55 pm	Late-breaking session: Luis Lopez-Santiago, Univ. of Michigan, Sodium Channel β 1 Subunits Regulate Nav1.9 Expression On Nociceptive DRG Neurons
10 pm	Continuation of scientific discussions in the pub.

Thursday, June 11, 2009

7:30 am - 9:00 am

Breakfast

Session 8: 9:00 am - 11:55 am

Skeletal Muscle Channels and Channel Complexes

Chair: Paul B. Rosenberg, Dept. of Medicine, Duke Univ.

9:00 am - 9:35 am

Paul B. Rosenberg, The role of STIM1 in muscle development and function

9:35 am - 10:10 am

Stephen Cannon, UT Southwestern Medical Center
Channelopathies of skeletal muscle and brain

10:10 am - 10:30 am

Break

10:30 am - 11:05 am

Kurt Beam, Dept. of Physiology & Biophysics, Univ. of Colorado Health Science Center
Bidirectional signaling between calcium channels of skeletal muscle requires multiple direct and indirect interactions.

11:05 am - 11:40 am

Robert Dirksen, Univ. of Rochester
Diseases Associated with Altered Ryanodine Receptor Activity

11:40 am - 11:55 am

Late-breaking session: Devon P. Ryan, UCSF
Mutations In A Novel Potassium Channel (Kir2.6) Causes Susceptibility To Thyrotoxic Hypokalemic Periodic Paralysis

11:55 am - 12:25 pm

Business Meeting

12:25 noon - 1:25 pm

Lunch

Free Afternoon or optional group rafting trip (leaving promptly at 12:30 pm and returning by 5:45 pm)

4:00 pm - 6:00 pm

Poster Session

6:00 pm - 7:00 pm

Dinner

Session 9: 7:00 pm - 9:50 pm

Ion channels and cancer

Chair: Mustafa Djamgoz, Dept. of Cancer Biology, Imperial College London

7:00 pm - 7:35 pm

Mustafa Djamgoz
A novel adhesion molecule in human breast cancer cells: Voltage-gated Na⁺ channel β 1 subunit

7:35 pm - 8:10 pm

Kelly Ai-Sun Tseng, Tufts Univ.,

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Na_v1.2-mediated sodium currents are necessary and sufficient to induce regeneration

8:10 pm - 8:25 pm

Break

8:25 pm - 9:00 pm

Annarosa Arcangeli, Dept. of Pathology and Experimental Oncology, Univ. of Florence, Italy
Signaling roles of hERG1 channels in cancer cells: physical and functional interaction with adhesion receptors

9:00 pm - 9:35 pm

*Annmarie Surprenant, Faculty of Life Sciences, Univ. of Manchester
Role of purinergic receptor/ion channels in inflammatory disease

9:35 pm - 9:50 pm

Late-breaking session: William Brackenbury, Univ. of Michigan
The voltage-gated sodium channel β 1 subunit regulates neuronal excitability and mediates neurite outgrowth in an activity-dependent manner

10 pm

Continuation of scientific discussions in the pub.

Friday, June 12, 2009

7:30 am - 9:00 am

Breakfast

Box Lunches Available

Free time and Departure

END OF CONFERENCE

For additional information, please contact:

**FASEB Summer Research Conferences
9650 Rockville Pike
Bethesda, MD 20814**

<http://src.faseb.org>

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