

JASPER'S BASIC MECHANISMS OF THE EPILEPSIES - FOURTH INTERNATIONAL WORKSHOPS

March 23-27, 2009, Yosemite Lodge at the Falls, Yosemite National Park, California, USA

Organizers & Editors: Jeffrey Noebels, MD, PhD (Baylor College of Medicine), Massimo Avoli, MD, PhD (Montreal Neurological Institute, McGill University & Sapienza University of Rome), Michael A. Rogawski, MD, PhD (UC Davis), Richard W. Olsen, PhD (UCLA), Antonio V. Delgado-Escueta, MD (VA GLAHS & UCLA)

Emeritus Organizers & Editors: Roger J. Porter, MD; Wilkie A. Wilson, PhD

Editorial Advisory Board: Giuseppe Biagini (Modena, Italy), Annamaria Vezzani (Milano, Italy), Helen Scharfman (New York, NY), John Huguenard (Palo Alto, CA), Wolfgang Löscher (Hannover, Germany), John Swann (Houston, TX), Amy Brooks-Kayal (Denver, CO), Phil Schwartzkroin (Davis, CA)

Sponsors of the Jasper's BME Workshops: Ortho-McNeil Janssen Scientific Affairs, Inc; Citizens United for Research in Epilepsy (CURE); National Institute of Neurological Disorders and Stroke (NINDS); American Epilepsy Society (AES); Epilepsy Foundation of Greater Los Angeles, and Epilepsy Foundation of San Diego County.

Children's Neurobiological Solutions (CNS) Foundation and UCB Pharma are helping support the Thursday workshops.

Website: <http://www.BasicMechanismsEpilepsiesWorkshops.neurology.ucla.edu> **Email:** JaspersBME@yahoo.com

All activities are held at the "Yosemite Lodge at the Falls" unless specified otherwise.

MONDAY, MARCH 23, 2009

14:00	REGISTRATION OPENS	CLIFF ROOM
18:15	WELCOME RECEPTION	CLIFF ROOM
19:15	OPENING SESSION OF WORKSHOPS (ALL WORKSHOPS SESSIONS WILL BE IN THE SAME LOCATION)	CLIFF ROOM
19:15	Welcome	Chairs
19:20	Welcome from the Sponsors	Dr. Whittemore (CURE); Dr. Fureman (NINDS), Dr. Hulihan (Ortho-McNeil Janssen Scientific Affairs), Dr. Brooks-Kayal (AES)
19:35	The aims of the Jasper's BME Workshops	Chairs
19:50	Herbert H. Jasper, MD, PhD	Massimo Avoli
20:15 <i>30 min presentation and 10 min discussion</i>	BASIC MECHANISMS OF THE EPILEPSIES: 40 YEARS AND COUNTING. WHAT NEXT? Discussion	David Prince

TUESDAY, MARCH 24, 2009**SEIZURES, NEURONAL SYNCHRONIZATION AND EPILEPTOGENESIS**

6:30-8:00	BREAKFAST BUFFET	MOUNTAIN ROOM
8:00-9:40 <i>15 minute presentations 5 minute questions</i>	WORKSHOP A – INHIBITORY NEUROTRANSMISSION Chairs - Richard Olsen and Giuseppe Biagini	
	8:00 - GABA _A receptor-mediated signaling: synaptic, extrasynaptic and presynaptic 8:15 – Questions	Dimitri Kullman (London, UK)
	8:20 – GABAergic signaling at immature mossy fibres-CA3 synapses 8:35 – Questions	Enrico Cherubini (Trieste, Italy)
	8:40 – Chloride homeostasis and GABAergic mechanisms in human temporal lobe epilepsy epileptiform activities 8:55 – Questions	Richard Miles (Paris, France)
	9:00 – Pathophysiological mechanisms of absence seizures: Review of current issues and role of tonic GABA _A current 9:15 – Questions	Vincenzo Crunelli (Cardiff, Wales, UK)
<i>20 mins open discussion, 2 slides, 5 min @</i>	9:20 – OPEN FLOOR DISCUSSION	Led by Ivan Soltesz (Irvine, CA, USA) & Istvan Mody (Los Angeles, CA, USA)
9:40-9:55	BREAK	

9:55-12:35 <i>15 minute presentations 5 minute questions</i>	WORKSHOP B – EPILEPTOGENESIS - I Chairs - Massimo Avoli and John Huguenard	
	9:55 – Remote control of neuronal activity in transgenic mice expressing evolved G protein-coupled receptors 10:10 – Questions	James O. McNamara (Durham, NC, USA)
	10:15 - Contributions of hippocampal neurogenesis to seizure-induced plasticity 10:30 – Questions	Jack Parent (Michigan, USA)
	10:35 - The potential role of ectopic granule cells in temporal lobe epilepsy 10:50 - Questions	Helen Scharfman (New York, NY, USA)
	10:55 - Transcriptional profiling of epileptogenesis 11:10 - Questions	Ray Dingledine (Atlanta, GA, USA)
<i>20 min open discussion, 2 slides and 5 min</i>	11:15 – OPEN FLOOR DISCUSSION	David Prince (Stanford, CA, USA)
<i>15 minute presentations 5 minute questions</i>	WORKSHOP B – EPILEPTOGENESIS - II Chairs – Helen Scharfman and Phil Schwartzkroin	
	11:35 – Animal models of progressive acquired epilepsy: Temporal properties and possible mechanisms 11:50 – Questions	F. Edward Dudek (Salt Lake City, UT, USA)
	11:55 – pH, CO ₂ and epilepsy 12:10 – Questions	Kai Kaila (Helsinki, Finland)
	12:15 – Seizure-dependent dendritic HCN channelopathy 12:30 – Questions	Nicholas Poolos (Seattle, WA, USA)
<i>25 min open discussion, 3 slides 7 min@</i>	12:35 – OPEN FLOOR DISCUSSION: Interictal-Ictal interactions	M. DeCurtis (Milano, Italy) Uwe Heinemann (Berlin, Germany)
13:00-16:30	EVERYONE ON THEIR OWN FOR LUNCH AFTERNOON BREAK – RECREATIONAL ACTIVITY	GO OUTSIDE AND ENJOY YOSEMITE NATIONAL PARK
BREAKOUT SESSIONS ON 4TH EDITION OF JASPER'S BME BOOK		LOCATION TO BE DETERMINED
14:15 – 15:00	BOOK SECTION I – SEIZURES	Led by Massimo Avoli, John Huguenard and Giuseppe Biagini
15:00 – 15:45	BOOK SECTION II – CELL INJURY AND EPILEPTOGENESIS	Led by Richard Olsen, Amy Brooks-Kayal and Phil Schwartzkroin
16:00	POSTER SESSION OPENS	CLIFF ROOM
16:30-16:50	THE FUTURE OF BASIC EPILEPSY RESEARCH	Phil A. Schwartzkroin (Davis, CA, USA)
<i>15 minute presentations 5 minute questions</i>	WORKSHOP C – PLASTICITY AND EPILEPTOGENESIS Chairs - John Huguenard and Amy Brooks-Kayal	
	16:50 – Seizure-induced post-translational changes in neurotransmitter receptors in immature brain 17:05 – Questions	Frances Jensen (Boston, MA, USA)
	17:10 – Dysregulated hippocampal network excitability in TLE 17:25 – Questions	Doug Coulter (Philadelphia, PA, USA)
	17:30 – Limbic neuronal networks in TLE 17:45 – Questions	Massimo Avoli (Montreal, Quebec, Canada)

	17:50 – Hippocampal and parahippocampal communication in TLE 18:05 – Questions	Uwe Heinemann (Berlin, Germany)
	18:10 – Computer modeling of epilepsy 18:25 – Questions	Ivan Soltesz (Irvine, CA, USA)
<i>20 minute open discussion, 2 slides and 5 minutes @</i>	18:30 – OPEN FLOOR DISCUSSION	Relevance of the entorhinal cortex direct inputs to CA3 in TLE – Giuseppe Biagini (Modena, Italy) Michael Poulter (London, Ontario, Canada)
18:50-19:20	POSTER SESSION & DRINKS	THE CLIFF ROOM
19:20 – 19:50	LIGHT DINNER – BOXED MEAL WITH WINE AND BEER	THE CLIFF ROOM
19:50-21:00	ROUND TABLE WORKSHOP D – GLIAL AND GAP JUNCTION DISEASE MECHANISMS Chairs - Wolfgang Löscher and Massimo Avoli	
<i>15 minute presentations 5 minute questions</i>	19:50 – Gliotransmission and astrocytic Ca ²⁺ signals in epilepsy 20:05 – Questions	Philip G. Haydon (Boston, MA, USA)
	20:10 – Glio-neuronal interactions in ictogenesis and epileptogenesis: The role of IL-1beta 20:25 – Questions	Annamaria Vezzani (Milano, Italy)
	20:30 – P450scc is induced in glia and neurons after status epilepticus: Modulatory effects of neurosteroids on epileptogenesis 20:35 – Questions	Giuseppe Biagini (Modena, Italy)
<i>20 minute open discussion, 2 slides and 5 minutes @</i>	20:40 – OPEN FLOOR DISCUSSION	TGF beta receptor mediated albumin uptake into astrocytes in neocortical epileptogenesis – Uwe Heinemann (Berlin, Germany)

WEDNESDAY, MARCH 25, 2009

EPILEPSY GENES

6:30-8:00	BREAKFAST BUFFET	THE BAR
8:00–9:00	8:00 – EPILEPSY GENES: SINGLE AND MULTIPLEX 8:25 – COMPLETING THE QUEST FOR COMMON EPILEPSY GENES	Jeffrey Noebels (Houston, TX, USA) Neil Risch (San Francisco, CA, USA)
<i>20 minute presentations, 5 min Questions @</i>		
8:50–10:20	WORKSHOP E – EXPANDING THE “EPILEPSY GENOME” Chairs - Jeff Noebels and Antonio Delgado-Escueta	
<i>15 minute presentations 5 minute questions</i>	8:50 – Individual whole genome sequencing and ion channels as candidate epilepsy genes 9:05 – Questions	Guy Rouleau (Montreal, Quebec, Canada)
	9:10 – Genome-wide association study in common forms of epilepsy: A preliminary report 9:25 – Questions	Thomas Ferraro (Philadelphia, PA, USA)
	9:30 – The European project EPICURE GWA and candidate gene sequencing studies 9:40 – Questions	Jose M. Serratosa (Madrid, Spain)
	9:45 – Baylor genome sequencing and ion channels as candidate epilepsy genes 9:55 – Questions	Jeffrey Noebels (Houston, TX, USA)

	10:00 – Rolandic epilepsy 10:10 - Questions	Deb Pal (New York, NY, USA)
	10:15 – OPEN FLOOR DISCUSSION	Led by A.V. Delgado-Escueta (Los Angeles, CA, USA)

10:25-10:45	BREAK
--------------------	--------------

10:45-12:05	WORKSHOP F – DISEASE MECHANISMS IN ION CHANNELOPATHIES	
	Chairs – Helen Scharfman and Jeff Noebels	
15 minute presentations 5 minute questions	10:45 – Circuits for seizures in mice with SCN1A mutation: Molecular and cellular basis of severe myoclonic epilepsy of infancy or Dravet syndrome 11:00 – Questions	Kazuhiro Yamakawa (Wako-shi, Saitama, Saitama, Japan)
	11:05 – KCNQ2/3 mutations - KCNQ2 (Kv7.2) mutation and M current density and spike frequency adaptation in mouse CA1 neurons 11:20 – Questions	Karen S. Wilcox (Salt Lake City, Utah, USA)
	11:25 – T-type calcium channel variants found in Childhood Absence Epilepsy patients provide insights into channel expression and gating 11:40 – Questions	E. Perez-Reyes (Charlottesville, VA, USA)
20 minute open discussion, 2 slides and 5 minutes @	11:45 – OPEN FLOOR DISCUSSION	BK channel epilepsy mutations – Robert Brenner (San Antonio, TX, USA)

12:05-16:00	EVERYONE ON THEIR OWN FOR LUNCH AFTERNOON BREAK – RECREATIONAL ACTIVITY	ENJOY YOSEMITE NATIONAL PARK
-------------	--	-------------------------------------

BREAKOUT SESSIONS ON 4TH EDITION OF JASPER'S BME BOOK		LOCATION TO BE DETERMINED
14:45 – 15:45	BOOK SECTION III – GENES, DEVELOPMENT AND EPILEPSIES	Led by Jeff Noebels, John Swann, Helen Scharfman, Antonio Delgado-Escueta

16:00-17:50	WORKSHOP G – GABA RECEPTORS: PLASTICITY, MUTATIONS AND HUMAN EPILEPSIES	
	Chairs - Richard Olsen and John Swann	
15 minute presentations 5 minute questions	16:00 – Alterations in GABA _A receptors subunits in a model of temporal lobe epilepsy 16:15 – Questions	Carolyn R. Houser (Los Angeles, CA, USA)
	16:20 – GABRG2-deficient humans and mice 16:35 – Questions	Steven Petrou (Melbourne Australia)
	16:40 – Recruitment of inhibition as an epileptogenic mechanism 16:55 – Questions	John R. Huguenard (Palo Alto, CA, USA)
	17:00 – GABA _A receptor subunit mutations associated with genetic epilepsies 17:15 – Questions	Robert L. Macdonald (Nashville, TN, USA)
	17:20 – Status epilepticus induced plasticity and epileptogenesis 17:35 – Questions	Claude Wasterlain (Los Angeles, CA, USA)
20 min open discussion, 2-3 slides and 5-7 min @	17:40 – OPEN FLOOR DISCUSSION:	GABA _A receptor endocytosis regulates spinogenesis – Stephen Moss (Boston, MA, USA) Patrick Cossette (Montreal, Quebec, Canada)

18:00 – 18:45	LIGHT DINNER – BOXED MEAL	THE CLIFF ROOM
18:45-19:15 <i>20 min talk and 10 min discussion</i>	NEUROGENESIS AND MIGRATION IN THE DEVELOPING NEOCORTEX	Arnold R. Kriegstein (San Francisco, CA, USA)
19:15-21:25	WORKSHOP H – DEVELOPMENTAL EPILEPSY: MOLECULES, MECHANISMS & MODELS Chairs – Amy Brooks Kayal and Antonio Delgado-Escueta	
<i>15 minute presentations 5 minute questions</i>	19:15 – Epileptic disorders of human cortical development 19:35 – Questions	Christopher Walsh (Boston, MA, USA)
	19:40 – Transcriptional control of interneuron development 19:55 - Questions	John Rubenstein (San Francisco, CA, USA)
	20:00 –The role of the mTOR pathway in epileptogenesis in Tuberous Sclerosis 20:15 – Questions	Michael Wong (St. Louis, MO, USA)
	20:20 – Experimental models of infantile spasms 20:35 – Questions	John Swann (Houston, TX, USA)
	20:40 – Myoclonin1/EFHC1 in JME 21:55 – Questions	Thierry Grisar (Liege, Belgium)
<i>20 minutes open discussion, 2 slides and 5-7 min @</i>	21:00 – OPEN FLOOR DISCUSSION	Led by Andrea Daga (Padova, Italy); O. Carter Snead (Toronto, Ontario, Canada); Kevin Staley (Boston, MA, USA)

THURSDAY, MARCH 26, 2009

MOLECULAR EPILEPSY THERAPEUTICS – CHANGING THE CULTURE OF EPILEPSY TREATMENT

Supported in part by the Children's Neurobiological Solutions Foundation and UCB Pharma

6:00 – 8:00	BREAKFAST BUFFET	THE BAR
8:00-8:30 <i>20 minute presentation and 10 min discussion</i>	OVERVIEW – NEW APPROACHES TO EPILEPSY THERAPEUTICS	Michael A. Rogawski (Sacramento, CA, USA)
8:30-10:30	WORKSHOP I – ANTIEPILEPTIC DRUG TARGETS Chairs – Michael Rogawski and Richard Olsen	
<i>15 minute presentations 5 minute questions</i>	8:30 – Voltage-activated sodium channels 8:45 – Questions	William A. Catterall (Seattle, WA, USA)
	8:50 – GABA _A receptors 9:05 – Questions	Richard W. Olsen (Los Angeles, CA, USA)
	9:10 – KCNQ potassium channels 9:25 – Questions	Edward C. Cooper (Philadelphia, PA, USA)
	9:30 – SV2A 9:45 – Questions	Sandra M. Bajjalieh (Seattle, WA, USA)
<i>20 minutes open discussion, 2 slides and 5 minutes @</i>	9:50 – OPEN FLOOR DISCUSSION	Key principles of clinical trials of anti-seizure drugs - Roger J. Porter (Devon, PA, USA)
10:10-10:30	BREAK	

10:30 -12:50	WORKSHOP J – ANTIEPILEPTOGENESIS, PLASTICITY OF AED TARGETS, DRUG RESISTANCE, TARGETING THE IMMATURE BRAIN Chairs – Michael Rogawski and Annamaria Vezzani	
<i>15 minute presentations each to start the workshop</i>	10:30 – Animal models for evaluating antiepileptogenesis 10:45 – Questions	H. Steve White (Salt Lake City, UT, USA)
	10:50 – Strategies for antiepileptogenesis: Neuroprotection, anti-inflammation and modulation of neuronal hyperexcitability 11:05 – Questions	Wolfgang Löscher (Hannover, Germany)
	11:10 - Hormonally induced alterations in anticonvulsants targets: Focus on extrasynaptic GABA _A receptors 11:25 – Questions	Istvan Mody (Los Angeles, CA, USA)
	11:30 - Regulation of GABA _A receptor subunit expression during epileptogenesis – Implications for therapeutics 11:45 – Questions	Amy Brooks-Kayal (Aurora, CO, USA)
	11:50 - Neonatal seizures and neuronal ion transport 12:05 – Questions	Kevin J. Staley (Boston, MA, USA)
	12:10 – Plasticity of neuronal firing mode in epilepsy 12:25 – Questions	Heinz Beck (Bonn, Germany)
<i>20 min discussion, 2 slide, 5 min @</i>	12:30 – OPEN FLOOR DISCUSSION	Led by Raman Sankar (Los Angeles, CA, USA) and Claude Wasterlain (Los Angeles, CA, USA)

12:50-14:30	EVERYONE ON THEIR OWN FOR LUNCH AFTERNOON BREAK – RECREATION & INFORMAL DISCUSSIONS	ENJOY YOSEMITE NATIONAL PARK
--------------------	--	-------------------------------------

BREAKOUT SESSIONS ON 4TH EDITION OF JASPER'S BME BOOK		LOCATION TO BE DETERMINED
13:15 – 14:15	BOOK SECTION IV – EPILEPSY THERAPEUTICS	Led by Michael Rogawski, Annamaria Vezzani, Wolfgang Löscher, Richard Olsen

14:30-16:35	WORKSHOP K – CELL AND GENE THERAPY IN EPILEPSY Chairs – Antonio Delgado-Escueta and Wolfgang Löscher	
<i>15 minute presentations each to start the workshop</i>	14:30 – DCX re-expression in subcortical band heterotopia 14:45 – Questions	Joseph LoTurco (Storrs, CT, USA)
	14:50 – Embryonic stem cell therapy in temporal lobe epilepsy 15:05 – Questions	Janice R. Naegele (Middletown, CT, USA)
	15:10 – Gene therapy with neuropeptide Y using adeno-associated viral vectors 15:25 – Questions	Annamaria Vezzani (Milan, Italy)
	15:30 – Cell therapy using GABA neural progenitors 15:45 – Questions	Scott C. Baraban (San Francisco, CA, USA)
<i>20 min open discussion, 2 slides and 5 minutes each</i>	15:50 – OPEN FLOOR DISCUSSION	Gene therapy in epilepsy and the role of the blood-brain barrier - Eain M. Cornford (Los Angeles, CA, USA)

16:15 – 17:15	SUMMARY OF BREAKOUT SESSIONS ON 4TH EDITION OF JASPER'S BME BOOK	
	BOOK SECTION I – SEIZURES	Presented by Massimo Avoli, John Huguenard and Giuseppe Biagini
	BOOK SECTION II – CELL INJURY AND EPILEPTOGENESIS	Presented by Richard Olsen, Amy Brooks-Kayal and Phil Schwartzkroin
	BOOK SECTION III – GENES, DEVELOPMENT AND EPILEPSIES	Presented by Jeff Noebels, John Swann, Helen Scharfman, Antonio Delgado-Escueta
	BOOK SECTION IV – EPILEPSY THERAPEUTICS	Presented by Michael Rogawski, Annamaria Vezzani, Wolfgang Löscher, Richard Olsen

17:15-17:30	SUMMATION OF WORKSHOPS & RESEARCH PRIORITIES 2010-2020
-------------	---

19:00 PM	CLOSING RECEPTION & GRAND DINNER Presentation of The Frank & Sonya Risch Memorial Award & Other Recognitions	AHWAHNEE HOTEL
----------	--	-----------------------

FRIDAY, MARCH 27, 2009

Morning	DEPARTURES
---------	------------

	BREAKFAST MEETING FOR CHAIRS & EDITORIAL ADVISORY BOARD	Editors and Editorial Advisory Board
--	---	--------------------------------------