

Spring Pain Research Conference

April 17th – April 24th, 2010 Grand Cayman, BWI

Sunday April 18th, 2010

10:00 am- 4:00 pm Registration (registration desk outside Marriott meeting room on second floor; stairway to the right, just inside main entrance)

11:45 pm Welcome and Announcements

12:00 - 1:00 pm *Session #1 Molecular mechanisms of spinal cord sensitization and disinhibition*

Fernando Cervero (McGill Univ., Montreal, Quebec, Canada) *Session Chair*
“Molecular markers in the spinal cord of estrogen-dependent hyperalgesia”

Hanns-Ulrich Zeilhofer (University of Zurich, Switzerland)
“Subtype-selective GABA-A receptor ligands as novel analgesics”

Jose Antonio Lopez-Garcia (University of Alcala, Madrid, Spain)
“Inhibitory and excitatory spinal effects of amines: changes following sensitization”

Robert W. Gereau (Washington Univ. Pain Center, St Louis, USA)
“mGluR-dependent plasticity in the dorsal horn and its role in central sensitization”

1:00 - 2:15 pm *Session #2 Glial Signaling Mechanisms in Persistent Pain*

Ru-Rong Ji (Brigham & Women’s Hospital, Harvard, Boston, MA, USA) *Session Chair*

Michael Salter (Univ. of Toronto, Toronto, Canada)
“Microglial signaling mechanisms: ATP receptors and BDNF”

Marzia Malcangio (Kings College London, London, UK)
“Microglial signaling mechanisms: cathepsin S and fractalkine”

Dave Spray (Albert Einstein College of Medicine, New York, USA)
“Bidirectional neuron-glia signaling mediated by pannexins and connexins in trigeminal ganglia”

Isabelle Decosterd (Univ. of Lausanne, Switzerland)
“Astroglial signaling mechanisms: glutamate and GABA transporter”

Ru-Rong Ji (Brigham & Women’s Hospital, Harvard, Boston, MA, USA) “Astroglial signaling mechanisms: MAPKs and chemokines”

2:15 - 2:45 pm Coffee Break

2:45 - 4:15 pm Session #3 Novel Mechanisms of Gene Expression Control

Ted Price (University of Arizona, Tucson, Arizona, USA) *Session Chair*
"Signaling to translation control machinery in DRG neurons"

Sandrine Geranton (University College London, London, UK)
"Rapamycin sensitive gene expression modulates persistent pain states"

Camilla Svenson (Karolinska Institute, Stockholm, Sweden)
"mTOR-mediated regulation of spinal sensitization in inflammatory pain"

Michael R. Vasko (Indiana Univ. School of Medicine, Indianapolis, IN, USA)
"DNA Repair reduces sensory neuropathy induced by cancer therapies"

Carolyn Fairbanks (University of Minnesota, Minneapolis, MN USA)
"Differential targeting of sensory neurons by AAV serotypes"

Luc Jasmin (UCSF, San Francisco, CA, USA)
"The GABA-Glutamate cycle: rewriting the script with a strong hand"

4:15 – 5:45 pm Session #4 GPCRs and Pain I

Lindsay Hough (Albany Medical College, Albany NY, USA) *Session Chair*
"Opioid-induced activation of brain analgesic circuits through cytochrome P450/epoxygenase signaling"

Zhizhong Pan (MD Anderson, Houston, TX, USA)
"Signaling mechanisms for DOR trafficking and function"

George Wilcox (University of Minnesota, Minneapolis MN, USA)
"Role of PKC in analgesic synergy"

Daniela Salvemini (Saint Louis University, St. Louis MO, USA)
"Ceramide in opiate hyperalgesia and tolerance"

Catherine Cahill (Queen's University, Kingston, Canada)
"Ultralow dose naloxone inhibits morphine tolerance: dissociation between functional outcomes and glial activation"

Christopher Evans (University of California Los Angeles, CA, USA)
"Constitutively active Mu-opioid receptors: potential therapeutic targets for analgesia without addiction"

5:45 - 6:15 pm Special Session #5 "Itching for Insights into the Specificity of Pain Transmission Mechanisms"

Allan Basbaum (UCSF, San Francisco, CA, USA)

7:00 pm Welcome Reception at the Marriott

Monday April 19th, 2010

8:00- 9:30 am Session #6 Forebrain Mechanisms and Pain

Volker Neugebauer (Univ. of Texas Medical Branch, Galveston, TX, USA) *Session Chair*

“Mechanisms of amygdalo-cortical plasticity in pain”

Vasco Galhardo (Univ. of Porto, Porto, Portugal)

“Desynchronization of thalamocortical information flow after peripheral nerve injury”

Min Zhuo (Univ of Toronto, Toronto, Canada)

“Erasing neuropathic pain hypersensitivity by inhibiting PKMzeta in anterior cingulate cortex”

Sabatino Maione (Univ. of Naples, Naples, Italy)

“FAAH inhibitors or TRPV1 receptor antagonists modulate endocannabinoid levels and microglial caspase activation in the prefrontal cortex of neuropathic mice”

Amelia Mutso (Northwestern University, Chicago, IL, USA)

“Neuropathic Pain Modulates Hippocampus-Mediated Emotional Behavior and Hippocampal Molecular Properties”

Sean Mackey (Stanford School of Medicine, Palo Alto, CA, USA)

“Prefrontal cortical systems in low back pain versus generalized anxiety disorders”

9:30 – 10:30 am Session #7 Stress and Pain

Mary Heinricher (Oregon Health & Science Univ., Portland, OR, USA) *Session Chair*

“Stress and recruitment of descending pain-modulating neurons”

Guy Simmonet (University Bordeaux, Bordeaux Cedex, France)

“Paradoxical latent pain hypersensitivity as a pathological outcome of stress-induced analgesia in rats”

Cyril Rivat (CRICM UPMC INSERM UMRS, Paris, France)

“Chronic stress-induced spinal inflammation: effects on nociceptive threshold and pain-related behavior”

Milena De Felice (University of Arizona, Tucson, AZ, USA)

“Triptan-induced sensitization mechanisms and headache pain”

10:30 – 11:00 am – Coffee Break

11:00- 11:45 am Session #8 Neural Control of Peripheral Inflammation

David J Clark (Stanford School of Medicine, Palo Alto, CA, USA) *Session Chair*
"Activation of the innate system of immunity in CRPS"

Wade Kingery (Stanford School of Medicine, Palo Alto, CA, USA)
"The role of neuropeptide, cytokine, and growth factor signaling in CRPS"

Stephanos Kyrkanides, (SUNY-Stony Brook, Long-Island, NY, USA)
"Neurogenic inflammation in osteoarthritis"

11:45 – 12:30 pm Session #9 Understanding, Detecting, and Treating Osteoarthritis Pain

Gloria Matthews (Genzyme Orthopaedic Research, Cambridge, MA, USA) *Session Chair*
"Introduction to the osteoarthritis pain landscape: Where do we stand?"

Bruce Kidd (Queen Mary School of Medicine, London, UK)
"Current understanding of the biological basis for osteoarthritis pain"

Anna Vardanyan (Genzyme Orthopaedic Research, Cambridge, MA, USA)
"Preclinical evaluation of osteoarthritis pain"

12:30 -1:00 pm Special Session #10 - Transgenic Insights into Modality Specific Wiring in the Periphery

John Wood (University College London, London, UK)

Tuesday April 20th, 2010

8:00-8:45 am Session #11 Protein-Protein Interactions in Pain

Michael Salter (Univ. of Toronto, Toronto, Canada) *Session Chair*
"Targeting NMDA receptor interacting proteins in pain"

Yves de Koninck (Univ. Laval, Quebec City, Quebec, Canada)
"Novel optical approach to reveal protein interactions in pain pathways in situ"

Yutian Wang (University of British Columbia, Vancouver BC, Canada)
"Role of LTD in morphine addiction and tolerance"

8:45-9:15 am Session #12 Preclinical Mechanisms of Spontaneous Pain

Tim Brennan (University of Iowa, Iowa City, IA, USA) *Session Chair*
"Unprovoked guarding pain and spontaneous activity of nociceptors requires deep tissue injury"

Frank Porreca (University of Arizona, Tucson, AZ, USA)
"Preclinical evaluation of spontaneous pain"

9:15-9:45 am Session #13 Biologics in Pain

Iain Chessell (MedImmune, Cambridge, UK) *Session Chair*

Jane Hughes (MedImmune, Cambridge, UK)
"Soluble mediators as analgesic targets for biologic approaches"

Richard Torres (Regeneron, Tarrytown, NY, USA)
"Using Velocigene and Velocimmune to understand and treat pain"

9:45 – 10:15 am Coffee Break

10:15 - 11:00 am Session #14 GPCRs and Pain II

Lucia Negri (Sapienza University of Rome, Rome, Italy) *Session Chair*
"Bv8/Prokineticin sensitization in inflammation and pain"

Brad Taylor (University of Kentucky, Lexington, KY, USA)
"Long-term control of hyperalgesia by spinal NPY"

Chris Fowler (Umea University, Umea, Sweden)
"Targeting peripheral endocannabinoid metabolism for the treatment of pain"

11:00-12:00 pm Session #15 DRG hyperexcitability and central pain mechanisms

Sue Carlton (University of Texas Medical Branch, Galveston, TX, USA) *Session Chair*
"Neuropathic pain fueled by nociceptor hypersensitivity in far and away places"

Edgar T. Walters (University of Texas Medical School at Houston, TX, USA)
"Spontaneous activity generated in nociceptor somata may contribute to chronic pain following spinal cord injury"

Nigel Bunnett (University of California, San Francisco, San Francisco, CA, USA)
"Contribution of proteases to inflammatory pain: protease detection and imaging using activity-based probes"

Claire Hulsebosch (University of Texas Medical Branch, Galveston, TX, USA)
"Gliopathy contributes to persistent inflammation and dysfunction after CNS trauma"

12:00 - 1:00 pm Session #16 Cancer and Chemotherapy-induced Pain

Todd W Vanderah (University of Arizona, Tucson, AZ USA) *Session Chair*
"CB2 agonists in a model of breast cancer-induced bone pain"

Michela Kress (Medical University Innsbruck, Innsbruck, Austria)
"Proinflammatory cytokines mediating hypersensitivity in a murine cancer pain model"

Sarah Flatters (King's College London, London, UK)
"Potential causal mechanisms for chemotherapy-induced pain"

Jose Miguel Vela (Esteve, Barcelona Spain)
"Sigma receptors and cancer chemotherapy induced neuropathic pain"

6:00 - 7:00 pm Data Blitz

Jill Recla (Jackson Labs)

"Identify novel genes and alleles associated with chronic pain susceptibility in humans using genetic mapping reference populations of laboratory mice"

Tally M. Largent-Milnes (University of Arizona, Tucson AZ, USA)

"Bifunctional opioid agonist/NK1 antagonist for pain without rewarding behavior"

Junichi Yagi (Kyorin University School of Medicine, Tokyo, Japan)

"Membrane depolarization is required for muscimol-induced blockade of action potential propagation in rat DRG neurons"

Matt Rowan (The University of Texas, San Antonio TX, USA)

"Local estrogen rapidly enhances BK- induced thermal allodynia"

Vinicio Granados-Soto (Cinvestav, Sede Sur, México, D.F., Mexico)

"Role of the Na⁺/H⁺ exchanger 1 and 5 in inflammatory pain"

R. Ben Messinger (University of Virginia, Charlottesville, VA, USA)

"Modulation of Cav3.2 T-type calcium channels in sensory neurons alleviates painful streptozocin-induced diabetic neuropathy in adult rats"

Fiona Russell (University of Calgary Calgary Canada)

"Proteinase activated receptor-4 has a pro-nociceptive effect in rat knee joints which is mast cell dependent"

Niklas Schuelert (University of Calgary, Calgary, Canada)

"Modulation of the body's natural cannabinoid system reduces nociception in rodent models of osteoarthritis"

Rick Lennertz (Med College Wisconsin, Milwaukee, WI, USA)

"Sanshool-induced tingling paresthesia"

Wednesday April 21st, 2010

8:00-9:00 am Session #17 Potassium channels

Diana Bautista (University of California, Berkeley, Berkeley, CA, USA) *Session Chair*
“Mechanisms of sensory-evoked tingling paresthesia”

Dan Minor (UCSF, San Francisco, CA, USA)
“Structural insight into TREK-1 gating by thermal and mechanical stimuli”

Constantine Sarantopoulos (Medical College of Wisconsin, Milwaukee, WI USA)
“ATP-sensitive potassium channel activity following nerve injury”

Sandy Chaplan (Johnson & Johnson, La Jolla, CA, USA)
“HCN channels as drug targets for treating pain”

9:00- 10:00 am Session #18 Mechanisms of Itch

Glenn Giesler (University of Minnesota, Minneapolis, MN, USA) *Session Chair*

Earl Carstens (University of California, Davis, Davis, CA, USA)
“Itch sensitization in a mouse model”

Steve Davidson (Washington University School of Medicine, St. Louis, MO, USA)
“Spinal mechanisms of itch”

Bob LaMotte (Yale University School of Medicine, New Haven, CT, USA)
“Mouse models of human itch”

Martin Schmelz (University of Heidelberg, Mannheim, Germany)
“Similar mechanisms of sensitization for pain and itch?”

10:00 -10:30 am Coffee Break

10:30-11:30 pm Session #19 Calcium channels

Terry Snutch (NeuroMed Pharmaceuticals, Vancouver, Canada) *Session Chair*

Gerald Zamponi (University of Calgary, Calgary, Canada)
“Regulation of T-type calcium channels by CCR2 receptor ligands - a dual approach to treating pain?”

Emmanuel Bourinet (Institut de Génomique Fonctionnelle, Montpellier, France)
“Direct functional coupling between the Cav3.2 T-type calcium channel and nitric oxide synthase contributes to nociception”

Slobodan Todorovic (University of Virginia Health System, Charlottesville, USA)
“Free radical signaling underlies selective effects of nitrous oxide (laughing gas) on T-type calcium channels in the pain pathway”

Michael Hildebrand (NeuroMed Pharmaceuticals, Vancouver, Canada)
"Novel small organic compounds that alter sodium and calcium channel biophysical properties and reduce excitability of peripheral nociceptors and dorsal horn spinal cord neurons"

11:30 - 12:45 pm Session #20 Mechanisms of Gabapentinoids in Pain

Annette Dolphin (University College London, London, UK) *Session Chair*

Charlie Taylor (CP Taylor Consulting, Chelsea MI, USA)
"Pregabalin - overview of published clinical trials and relevant pharmacology mechanisms"

Annette Dolphin (University College London, London, UK)
"The calcium channel $\alpha_2\delta$ subunit and its role as a therapeutic target in neuropathic pain"

David Lou (University of California, Irvine, CA, USA)
"Mechanism of $\alpha_2\delta_1$ Induced Behavioral Hypersensitivity"

Ken-ichiro Hayashida (Wake Forest University, Winston Salem, NC, USA)
"Does gabapentin recruit descending inhibition?"

Howard Gutstein (MD Anderson Cancer Center, Houston TX, USA)
"Can you teach an old drug new tricks??"

Trip to Stingray City

Thursday April 22nd, 2010

8:00 - 9:30 am Session #21 CGRP and Pain

Richard Hargreaves (Merck Research Labs, West Point, PA, USA) *Session Chair*

John Macor, (Bristol Myers Squibb, Wallingford, CT, USA)
"CGRP Antagonists Novel Medicinal Chemistry"

Stefanie Kane (Merck Research Laboratories, West Point, PA, USA)
"CGRP antagonists and migraine"

Henri Doods (Boehringer Ingelheim, Biberach, Germany)
"CGRP antagonists and pain"

Karl Messlinger (University of Ehrlangen-Nurnberg, Germany)
"Trigeminal CGRP studies"

Volker Neugebauer (Univ. of Texas Medical Branch, Galveston, TX, USA)
"CGRP in spinal cord and amygdala"

Richard Hargreaves (Merck Research Laboratories, West Point, PA, USA)
"PET Imaging CGRP receptors in the brain"

9:30–10:30 am Session #22 A Multipartite Synapse in Understanding Pain Mechanisms

Joyce DeLeo: (Dartmouth Medical School, Hanover, NH, USA) *Session Chair - Introduction*

Michael Costigan (Harvard Medical School, Boston, MA, USA)
"Potential role of lymphocytes in chronic pain"

Edgar Alfonso Romero-Sandoval (Dartmouth Medical School, Hanover NH, USA)
"Perivascular cells and CB receptors"

Patrick Dougherty (Univ of Texas MD Anderson Cancer Cntr, Houston, TX, USA)
"In Vivo studies of Physiological Responses of Spinal Astrocytes"

Natalie M. Wilson (Loyola University, Chicago)
"The Role of SDF-1/CXCR4 Signaling in Opioid-induced Hypernociception."

10:30 – 11:00 am – Coffee Break

11:00 – 12:15 pm Session #23 Sex and Pain

Richard Traub (University of Maryland Dental School, Baltimore, MD, USA) *Session Chair*

Dean Dessem (University of Maryland Dental School, Baltimore, MD, USA)
"Sex differences in movement-induced muscle pain"

Jin Ro (University of Maryland Dental School, Baltimore, MD, USA)
"Sex differences in peripheral opioid receptor mechanisms"

Joel Greenspan (University of Maryland Dental School, Baltimore, MD, USA)
"Hormonal tides and pain: menstrual cycle effects upon brain responses to pain"

Rich Traub (University of Maryland Dental School, Baltimore, MD, USA)
"Hormonal modulation of visceral pain"

Jill Fehrenbacher (University of Texas HSC, San Antonio, TX, USA)
"Effects of estrogens on human nociceptors"

**12:15 – 12:45 pm Special Session #24 - RNAi and Applications to Pain: From
Target Validation to Therapeutics**

Dinah Sah (Alnylam Pharmaceuticals, Inc. Cambridge, MA, USA)

Friday April 23rd, 2010

8:00 - 9:00 am Session #25 Conversion of Acute to Chronic Pain

Dave Yeomans (Stanford University, Stanford, CA, USA) *Session Chair*
"Pain Chronicity and Oxytocin Receptors in Primary Afferents"

Julien Mamet (Adynxx, Inc. San Francisco, CA)
"From acute to chronic pain: a genome-wide leap"

David Borsook (McLean Hospital, Belmont, MA, USA)

Uhtaek Oh (Seoul National University, Seoul, Korea)
"Role of ANO1, a cloned Ca²⁺-activated Cl⁻ channel in nociception"

9:00 – 9:30 am Special Session #26 - Clinical Migraine and Other Primary Headache Disorders

David Dodick (Mayo Clinic, Scottsdale AZ, USA)

9:30 AM – 10:00 AM – Coffee Break

10:00 – 11:00 am Session #27 Basic Science of Migraine

Greg Dussor (University of Arizona, Tucson, AZ, USA) *Session Chair*
"Activation of Dural Afferents by Small Changes in Extracellular pH"

Michael Gold (Univ. of Pittsburgh, Pittsburgh, PA, USA)
"Mechanisms of Dural Afferent Excitability"

John Andrews (NeurAxon, Toronto, Canada)
"nNOS inhibition as a treatment strategy for headache pain"

David Borsook (McLean Hospital, Belmont, MA, USA)
"Imaging Migraine"

11:00-12:00 pm Session #28 Opioid-induced Hyperalgesia: Mechanisms and Clinical Relevance

Jurgen Sandkuhler (Center for Brain Research, Medical Univ of Vienna, Austria)
Session Chair

“Synaptic mechanisms of OIH”

Martin Angst (Stanford School of Medicine, Palo Alto, CA, USA)

“Surrogate markers of OIH in humans: Are they valid and where do we stand?”

Michael Rowbotham (UCSF-Mount Zion Pain Management Center, San Francisco, CA, USA)

"Clinical evidence of opioid hyperalgesia - yes or no?"

Michael Morgan (Washington State University Vancouver, WA, USA)

"Contribution of mu-opioid receptor internalization to morphine antinociception and tolerance in the rat"

12:00 - 1:30 pm Session #29 TRP channels and pain

Cheryl Stucky (Med College Wisconsin, Milwaukee, WI, USA) *Session Chair*

"TRPA1: a potential target for mechanical sensitivity"

Stuart Bevan (King's College London, UK)

“Novel endogenous modulators of TRPA1”

Pierangelo Geppetti (University of Florence, Florence, Italy)

“TRPA1: from pain to inflammation”

Mark Zylka (University of North Carolina, Chapel Hill, NC, USA)

“Regulation of thermal and mechanical nociception by ectonucleotidases”

Ken Wild (Amgen Inc., Thousand Oaks, CA, USA)

“TRPM8 selective antagonists are not effective in rat models of pain”

Samer R. Eid (Merck Research Laboratories, West Point, PA, USA)

"TRPV1 Antagonists: Are They Too Hot to Handle?"

END OF SESSIONS

Friday Evening - Farewell Beach Barbecue at the Marriott