

44th Annual Lake Cumberland Biological Transport Group Meeting (affiliated with American Physiological Society)

**CHAIR**

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44th Annual Lake Cumberland Biological Transport Group Meeting
Jamestown, KY
June 21st - June 24th, 2009

Financial support provided by:

Vanderbilt University Medical Center - Department of Anesthesiology
BioMedical Solutions, Inc.
LabArmor
Perkin-Elmer

Greetings and Informal Reception
Sunday, June 21st
Pumpkin Creek Lodge

5:00 - 6:30 pm (Central Daylight Time)
Bring your family and something to share
(fruit, veggies, cheese, dessert, or entre)
Beverages and table service provided



Sunday evening - Session I "Epithelial Barrier and CFTR"

Moderators: Peter Lauf and Norma Adragna

- 6:30-6:40** Opening remarks - Kenneth Gagnon and Syed J. Khundmiri
- 6:40-7:00** *Structural and functional effects of nanoparticle toxicity on barrier epithelial cell.*
Amiraj Banga¹, Adam D. Amos¹, Ellen A. Chernoff¹, Xianyin Lai², Frank A. Witzmann² and Bonnie L. Blazer-Yost^{1,2}.
¹ Department of Biology, School of Science, Indiana University Purdue University Indianapolis, and ² Department of Cellular and Integrative Physiology, Indiana University School of Medicine, Indianapolis, IN.
- 7:10-7:30** *Putting Humpty Together Again: the logic of epithelial Calcium transport.*
Michele Wheatly.
Department of Biological Sciences, Wright State University, Dayton, OH.
- 7:40-8:00** *Microflora and the intestinal epithelial barrier.*
Melinda Engevik.
Department of Molecular and Cellular Physiology, University of Cincinnati, Cincinnati, OH.
- 8:10-8:25** Coffee break
- 8:25-8:45** *NS1 of H5N1 interacts with SAP-97 in a PDZ-dependent manner to disrupt epithelial barrier integrity.*
Veronica Garcia-Conoley.
Department of Physiology, University of Tennessee Health Science Center, Memphis, TN.
- 8:55-9:15** *Reduced NHE3-mediated sodium absorption increases survival of CFTR-deficient mice.*
Emily Bradford and Gary E Shull.
Department of Molecular Genetics, University of Cincinnati, Cincinnati, OH.

9:25-9:45

Compartmentalized cAMP at the plasma membrane clusters PDE3A and CFTR into microdomains.

Himabindu Penmatsa.

Department of Physiology, University of Tennessee Health Science Center,
Memphis, TN.

Monday morning - Session II "Biochemistry and Bioinformatics"

Moderators: **Bonnie Blazer Yost and Eric Delpire**

8:00-8:30 Continental breakfast - Pumpkin Creek Lodge

8:30-8:50 *What am I going to do with all these data? Surviving nextgen nucleic acid analysis!*

Don Thomason.

Department of Physiology, University of Tennessee Health Science Center, Memphis, TN.

9:00-9:20 *Erythrocytes Constitute the Main Blood Compartment for Aluminum.*

Norma C. Adragna^{1,2}, Jodee Collins³, Enzo B. Arevalo-Garcia³ and Peter K. Lauf¹.

¹ Cell Biophysics Group, ² Department of Pharmacology & Toxicology and ³ Biomedical Sciences Program, Boonshoft School of Medicine and College of Science and Mathematics, Wright State University, Dayton, OH.

9:30-9:50 *Transducing the Light Fantastic: Variations on a Theme.*

James Clack.

Department of Biology, Indiana University - Purdue University, Columbus, IN.

10:00-10:15 Coffee break

10:15-10:35 *Steroidogenic Acute Regulatory (StAR)-Related Lipid Transfer Domain Protein 5 (STARD5) Localization and Regulation in Renal Tubules.*

Yu-Chyu Chen¹, Renate K. Meier¹, Shirong Zheng², Syed J. Khundmiri³, Michael T. Tseng⁴, Eleanor D. Lederer^{3,5,6}, Paul N. Epstein^{2,5}, and Barbara J. Clark^{1,5}

¹ Departments of Biochemistry & Molecular Biology, ² Pediatrics, ³ Medicine, and ⁴ Anatomical Sciences & Neurobiology, ⁵ Center for Genetics and Molecular Medicine, University of Louisville School of Medicine, Louisville, KY.

10:45-11:05 *Structure and Function of ICln.*

Markus Paulmichl¹, Silvia Dossena¹, Simona Rodighiero², Valeria Vezzoli^{1,3}, Charity Nofziger¹, Johannes Fürst⁴, Guido Bottà³, Giuliano Meyer³.

¹ Institute of Pharmacology and Toxicology, Paracelsus Medical University, Salzburg, Austria, ² Piattaforma di Imaging Cellulare e Molecolare, Fondazione Filarete, Milan, Italy, ³ Department of Biomolecular Sciences and Biotechnology, University of Milan, Milan, Italy, ⁴ Department of Physiology, Medical University of Innsbruck, Innsbruck, Austria.

11:15-11:35 *Cation-Chloride Cotransporter genes: Colors, flavors and other senses.*

Mauricio Di Fulvio and Francisco Javier Alvarez-Leefmans.

Department of Pharmacology and Toxicology, Wright State University, School of Medicine, Dayton, OH.

Family Dinner
Monday, June 22nd
Rowena Landing Restaurant - Lure Lodge



5:00 - 6:30 pm (Central Daylight Time)

Monday evening - Session III "Ligands and Second Messengers"

Moderators: **Dan Halm** and **Don Thomason**

- 6:45-7:05** *Regulation of Na/K ATPase by low dose ouabain.*
Syed J. Khundmiri.
Department of Medicine and Physiology, University of Louisville, Louisville, KY.
- 7:15-7:35** *The Rhesus Antigen Macromolecular Complex, a Potential Modulator of K-Cl Cotransport 'in Mice and Men'.*
Peter K. Lauf¹, Norma C. Adragna^{1,2}, Dominique Goossens³, and Jean Pierre Cartron³.
¹Cell Biophysics Group, ²Department of Pharmacology and Toxicology, Wright State University, Dayton, OH, USA and ³Institut de la Transfusion, Paris, France.
- 7:45-8:05** *Modulators of the HERG potassium channel in the heart.*
Sabina Kupersmidt.
Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, TN.
- 8:15-8:30** Coffee break
- 8:30-8:50** *From the depths of the bowel, rhesus glycoproteins and ammonium transport.*
Roger Worrell.
Department of Molecular and Cellular Physiology, University of Cincinnati, Cincinnati, OH.
- 9:00-9:20** *Mining small-molecule libraries for K_{ir} channel antagonists.*
Jerod Denton.
Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, TN.
- 9:30-9:50** *Kinase Regulation of Cation-Chloride Cotransporters in Sensory Neurons.*
Eric Delpire.
Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, TN.

Tuesday morning - Session IV "Renal transport and disease"

Moderators: **Jim Clack** and **Sabina Kupersmidt**

8:00-8:30 Continental breakfast - Pumpkin Creek Lodge

8:30-8:50 *Differential desensitization of PTH actions in renal proximal tubule.*

Eleanor Lederer, Nina Lesousky, Sarah Salyer, Syed J Khundmiri.
Department of Nephrology, University of Louisville, Louisville, KY.

9:00-9:20 *Deletion of the Chloride/Base Exchanger SLC26A7 Impairs Gastric Acid Secretion and Causes Distal Renal Tubular Acidosis.*

Jie Xu, Penghong Song, Suguru Nakamura, Sharon Barone, Hassane Amlal, Ursula Seidler, and Manoocher Soleimani.
Division of Nephrology and Hypertension, University of Cincinnati, Cincinnati, OH.

9:30-9:50 *Protective role of betaine in cellular stress in kidney and liver.*

Stephen Kempson, Jeff Bonner, & Bailey Anderson.
Department of Physiology, Indiana University School of Medicine, Indianapolis, IN.

10:00-10:15 Coffee break

10:15-10:35 *Studies to determine the components of cyst fluid responsible for cyst growth in polycystic kidney disease.*¹

Julie C. Haydon¹, Robert L. Bacallao², Vincent H. Gattone³, Xianyin Lai⁴, Frank A. Witzmann⁴, Brenda J. Blacklock⁵, and Bonnie L. Blazer-Yost^{1,3,4}

Department of Biology, Purdue University School of Science, Indiana University Purdue University Indianapolis,² Department of Nephrology, Indiana University School of Medicine,³ Department of Anatomy and Cell Biology, Indiana University School of Medicine,⁴ Department of Cellular and Integrative Physiology, Indiana University School of Medicine,⁵ Department of Chemistry and Chemical Biology, Indiana University Purdue University Indianapolis, Indianapolis, IN.

10:45-11:05 *PPAR γ agonists inhibit vasopressin-mediated anion transport in the MDCK-C7 cell line.*

Charity Nofziger^{1,4}, Kathleen K. Brown², Chari D. Smith², Wallace Harrington², David Murray², John Bisi², Thalia T. Ashton², Frank P. Maurio², Kameljit Kalsi³, T. Aaron West¹, Deborah Baines³, and Bonnie L. Blazer Yost¹.

¹ Department of Biology, Indiana University Purdue University Indianapolis, Indianapolis, IN, ² GlaxoSmithKline, Research and Development, Research Triangle Park, North Carolina, ³ Ion channels and Cell Signalling Research Centre, Division of Basic medical Sciences, St. George's, University of London, London, United Kingdom, ⁴ Institute of Pharmacology and Toxicology, Paracelsus Medical University Salzburg, Austria.

11:15-11:35 *Effect of pioglitazone on cystic disease in the PCK rat model of polycystic kidney disease (PKD).*

Bonnie L. Blazer-Yost^{1,2}, Julie Haydon¹, Tracy Eggleston², and Vincent Gattone².

¹ Department of Biology, Purdue University School of Science, Indiana University Purdue University Indianapolis, ² Department of Anatomy and Cell Biology, Indiana University School of Medicine, Indianapolis, IN.

Tuesday evening - Session V "Channels and transporters"

Moderators: **Roger Worrell** and **Charity Nofziger**

6:30-6:50 *Divergence in signaling for β -adrenergic activation of ion secretion.*

Dan Halm.

Department of Neuroscience, Cell Biology, and Physiology, Wright State University, Dayton, OH.

7:00-7:20 *Functional and molecular characterization of human Pendrin (SLC26A4).*

Silvia Dossena¹, Simona Rodighiero², Valeria Vezzoli^{1,3}, Charity Nofziger¹, Sonja Koessler¹, Guido Bottà³, Giuliano Meyer³, Markus Paulmichl¹.

¹ Institute of Pharmacology and Toxicology, Paracelsus Medical University, Salzburg, Austria, ² Piattaforma di Imaging Cellulare e Molecolare, Fondazione Filarete, Milano, Italy, ³ Department of Biomolecular Sciences and Biotechnology, University of Milan, Milan, Italy.

7:30-7:50 *Transcriptional regulation of the SLC26A4 5' flanking region.*

Valeria Vezzoli^{1,2}, Silvia Dossena¹, Charity Nofziger¹, Marta Boccazzi^{1,2}, Guido Botta², Giuliano Meyer², and Markus Paulmichl¹.

¹ Institute of Pharmacology and Toxicology, Paracelsus Medical University Salzburg, Austria, and ² Department of Biomolecular Sciences and Biotechnology, University of Milan, Milan, Italy.

8:00-8:15 **Coffee break**

8:15-8:35 *Functional Roles of Chloride Cotransporters in Primary Sensory Neurons*

Francisco Javier Alvarez-Leefmans.

Department of Pharmacology and Toxicology, Boonshoft School of Medicine, Wright State University, Dayton, OH.

8:45-9:05 *Integrin trafficking in cell migration: Role of SNARE proteins.*

Chuan Hu.

Department of Biochemistry, University of Louisville, Louisville, KY.

9:15-9:35 *Putting the brakes on glioblastoma migration.*

Kenneth Gagnon and Eric Delpire.

Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, TN.

9:45-10:10 Business meeting

1. Treasurers report
2. Website updates
3. Future meetings and elections

June 20-23, 2010

Chair: Stephen Kempson; **Vice-Chair:** Charity Nofziger

June 19-22, 2011

Chair: Charity Nofziger; **Vice-chair:** _____

June 17-20, 2012

Chair: _____; **Vice-chair:** _____

10:10-10:15 Closing remarks: Stephen Kempson and Charity Nofziger

Participants

Norma C. Adragna
Francisco Javier Alvarez-Leefmans
Amiraj Banga
Bonnie Blazer-Yost
Emily Bradford
Jim Clack
Barbara J. Clark
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Himabindu Penmatsa
Manoocher Soleimani
Don Thomason
Valeria Vezzoli
Michele G. Wheatly
Roger Worrell

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