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

June 21st to June 24th, 2009
Lake Cumberland State Park
Jamestown, Kentucky

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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-Yost¹².
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.
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 Collins 3, Enzo B. Arevalo-Garcia 3 and
            Peter K. Lauf 1.
            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 Chen 1, Renate K. Meier 1, Shirong Zheng 2, Syed J.
            Khundmire 3, Michael T. Tseng 4, 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 Vezzoli¹,³, 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.

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**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. Lauf, Norma C. Adragna, Dominique Goossens, and Jean Pierre Cartron.  
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 Kupershmidt.  
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 Kupershmidt

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.
            Department of Biology, Purdue University School of Science, Indiana University Purdue University Indianapolis, Department of Nephrology, Indiana University School of Medicine, Department of Anatomy and Cell Biology, Indiana University School of Medicine, Department of Cellular and Integrative Physiology, Indiana University School of Medicine, Department of Chemistry and Chemical Biology, Indiana University Purdue University Indianapolis, Indianapolis, IN.
10:45-11:05  **PPARg agonists inhibit vasopressin-mediated anion transport in the MDCK-C7 cell line.**
Charity Nofziger¹,⁴, 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-Yost¹,², 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 Dossena ¹, Simona Rodighiero ², Valeria Vezzoli ¹,³, Charity Nofziger ¹, Sonja Koessler ¹, Guido Bottà ³, Giuliano Meyer ³, Markus Paulmichl ¹.
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 Dossena ¹, Charity Nofziger ¹, Marta Bocazzi ¹,², Guido Bottà ², Giuliano Meyer ², and Markus Paulmichl ¹.
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
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