

EPITHELIAL TRANSPORT GROUP NEWSLETTER

Fall, 2004

MESSAGE FROM THE CHAIR

I am writing this letter just prior to the abstract submission deadline for the 2005 IUPS/EB meeting to be held next spring in San Diego. IUPS meetings take place every four years and so provide a special opportunity for us to meet with others in the international physiological community. This meeting has many sessions of interest for ETG members, both within the epithelial track (which encompasses renal, gastrointestinal and epithelial sessions) and among the free-standing and non-track sessions. In order to accommodate the IUPS format, the meeting will be a little longer than usual; however, this should enable all of us to enjoy the wonderful city of San Diego for a little longer as well!

I would also like to draw your attention to the ETG Trainee Awards, which we have held annually at the EB meeting for the last two years. These awards include a certificate of recognition and a cash prize (currently \$250.00) for the best abstract submitted by a doctoral trainee and post-doctoral fellow to any ETG sponsored session, as selected by the ETG Steering Committee. One award is made in each category. I would vigorously encourage you to inform your trainees of this award and to submit an application by the December 10th deadline. We are also beginning to solicit nominations for individuals to serve on the ETG Steering Committee; if you want to be a part of the process for programming future EB meetings, this is your chance!! It is also not too soon to start to think about EB 2006. If you have any ideas for symposia or featured topic sessions that you would like to see at EB06, please submit them to me (fuller@physiology.uab.edu) or to any other member of the Steering Committee (contact information is given at the end of the newsletter).

In the meantime, I wish you a safe and happy holiday season, and I look forward to seeing you in San Diego.

Yours,

Cathy

EXPERIMENTAL BIOLOGY 2005 AND INTERNATIONAL UNION OF PHYSIOLOGICAL SCIENCES 2005

The 35th Congress of the International Union of Physiological Sciences (IUPS) will be held in San Diego, CA March 31 - April 5, 2005. This is a joint meeting with Experimental Biology 2005 taking place from April 2 – April 6, 2005. For further details see the meeting website at <http://www.iups2005.org/>. The IUPS Scientific Program is now available online at: <http://www.iups2005.org/symposia.htm>.

ABSTRACT SUBMISSION

Please be advised that the abstract submission deadline is November 3, 2004. The rules and guidelines for submitting an abstract, as well as an alphabetical list of the topic categories can be found on the meeting website: <http://www.iups2005.org> under the category "Abstracts".

The feature topic session categories for the epithelial transport group are as follows:

- 1009-IUPS Epithelial Genomics, Proteomics and Genetic Models (Mark A. Knepper, J.E. Melvin)
- 1010-IUPS The Molecular Basis of Epithelial Disease (David N. Sheppard)

The poster session categories for the epithelial transport group are as follows:

- 1168-IUPS Epithelial Ion Channels
- 1169-IUPS Epithelial Polarity and Membrane Trafficking
- 1175-IUPS Other Epithelial Transporters

Poster Sessions are held Saturday, April 2 through Tuesday, April 5. Those abstracts selected for incorporation in a featured topic will be presented **twice**, once in the oral, featured topic session and also as a poster presentation.

XXXV IUPS CONGRESS TRAVEL GRANT PROGRAM

The travel grant program is for those students and physiologists who have not yet received their doctoral degree, or have done so within the past 15 years. Emphasis is placed on physiologists coming from developing countries and minorities in the United States who have submitted abstracts to the Congress. The application deadline for travel grant submission is November 1, 2004. Information and the application form can be found at the following WEB site:

http://www.iups2005.org/announce/travel_grants.htm

VISA INFORMATION FOR FOREIGN SCIENTISTS TRAVELING TO THE US

As part of new security procedures, applications for visas are being sent to the State Department in Washington, D.C., where they are reviewed. The Website for the State Department is <http://travel.state.gov/visa>. Scientists traveling to the United States are urged to apply for a visa as early as possible (at least three months before visa is needed). For additional information see: <http://www.iups2005.org/announce/visa.htm>.

ETG STUDENT AND YOUNG INVESTIGATOR AWARDS

The Epithelial Transport Group Student and Young Investigator Awards (\$250) will be given to one pre-doctoral and one post-doctoral candidate for outstanding research in a topic related to epithelial physiology. To be eligible for an award, the candidate must be the first author on an abstract submitted under one of the topics listed for the Epithelial Transport Group (1009-IUPS, 1010-IUPS, 1168-IUPS, 1169-IUPS and 1175-IUPS) at the IUPS/Experimental Biology 2005 meeting. For the post-doctoral award, the candidate must hold a Ph.D., M.D., D.V.M., or other comparable higher degree. To apply submit a copy of abstract, a completed APS Award Certification Form (available at: <http://www.iups2005.org/certification-form.pdf>) and a one-page CV to Cathy Fuller Ph.D., Dept. of Physiology and Biophysics, University of Alabama at Birmingham, Birmingham AL 35294-0005 (fuller@physiology.uab.edu) for review by the ETG Steering Committee. Deadline for application is December 10, 2004.

SESSIONS OF INTEREST TO ETG MEMBERS AT IUPS/ETG 2005

Epithelial Track:

Symposium:

Novel Mechanisms of Transporter Regulation. Chairs: Rene Bindels, University Medical Center, Nijmegen, and Irene Schulz, University of Saarland. Friday, April 1, 2005—8:00am-10:00am.

Speakers:

Christine E. Bear. Hospital for Sick Children, Toronto, "*Control of CIC functions through protein-protein interactions.*" 8:00am

Kevin Foskett. University of Pennsylvania, "*CFTR regulation by kinases and PDZ domains.*" 8:30am

David Cook. University of Sydney, "*NA channel regulation by viruses/regulation by kinases.*" 9:00am

Rene Bindels. University Medical Center, Nijmegen, "*Deregulation of epithelial calcium- and magnesium-channels in health and disease.*" 9:30am

Symposium:

Epithelial Polarity: Development to Disease. Chairs: Catherine Fuller, University of Alabama at Birmingham, and Michael J. Caplan, Yale University. Friday, April 1, 2005—10:30am-12:30pm.

Speakers:

Elizabeth Knust. Heinrich-Heine University, "*Epithelial cell polarity, protein scaffolds and retinal degeneration: lessons from Drosophila.*" 10:30am

Karl Matter. University College of London, "*Signaling at tight junctions and differentiation of epithelia.*" 11:00am

Keith Mostov. UCSF, "*Formation of multicellular epithelial structures.*" 11:30am

Michael J. Caplan. Yale University, "*Trafficking of transport proteins in polarized cells: new partners and possible therapies.*" 12:00pm

Symposium:

Epithelial Cells and their Neighbors. Chairs: Hannah V. Carey, University of Wisconsin - Madison, and Helen E. Raybould, University of Alabama at Birmingham. April 2, 2005—8:00 am-10:00am.

Speakers:

Don Powell. University of Texas Medical Branch, "*Role of intestinal myofibroblasts in epithelial cell function.*" 8:00am

Gunnar Flemstrom. Uppsala University, "*Signaling between neuroendocrine cells and gut epithelial cells.*" 8:30am

Lora V. Hooper. UT-Southwestern Medical Center, "*Interaction of epithelial cells with gut microflora.*" 9:00am

Wendy L. Havran. The Scripps Research Institute, "*Interactions between intraepithelial lymphocytes and neighboring epithelial cells.*" 9:30am

Symposium:

PDZ Domain Scaffolding Proteins and their Functions in Polarized Cells. Chairs: Mark Donowitz, Johns Hopkins University, and Yoshihisa Kurachi, Osaka University. Monday, April 4, 2005—8:00am-10:00am.

Speakers:

Mark Donowitz. Johns Hopkins University, "*Specificity of regulation by trafficking and scaffolding.*" 8:00am

Sharon L. Milgram. University of North Carolina at Chapel Hill, "*Trafficking and scaffolding of apical membrane receptors and ion channels.*" 8:30am

Heini Murer. University of Zurich, "*Phosphate transport and protein-scaffolding in the proximal tubule.*" 9:00am

Edward Weinman. University of Maryland, "*NHERF-1 and the regulation of NHE3 and Npt2a.*" 9:30am

Featured Topics:

The Molecular Basis of Epithelial Disease. Chair: David N. Sheppard, University of Bristol. Presenter #1: Michael Welsh, University of Iowa, "TBA." Sunday, April 3, 2005—10:30am-12:30pm

Epithelial Genomics, Proteomics and Genetic Models. Chairs: Mark A. Knepper, NIH/NHLBI, and J.E. Melvin, University of Rochester. Presenter: Hannelore Daniel, Technical University of Munich, "Use of mouse model organisms and profiling technologies to study nutrient transport processes in epithelia." Tuesday, April 5, 2005—3:15pm-5:15pm.

Renal Control of Blood Pressure Track:

Symposium:

Cell Biology of Sodium Transport in Kidney. Chairs: Francois Verrey, University of Zürich and Rebecca Hughey, University of Pittsburgh School of Medicine. Friday, April 1, 2005—3:15pm-5:15pm.

Speakers:

Richard Lifton. Yale University, "WNK and hypertension." 3:15pm

Rebecca Hughey. University of Pittsburgh, "Processing of ENaC." 3:45pm

Kathy Sweadner. Massachusetts General Hospital, "Modulation of renal Na,K-ATPase function by FXYP proteins." 4:15pm

Hiam Garty. Weizmann Institute of Science, "TBA" 4:45pm

Symposium:

Renal NaCl Reabsorption: Molecular Insights into Human Blood Pressure Control. Chair: Paul A. Welling, University of Maryland School of Medicine. Saturday, April 2, 2005—8:00am-10:00am.

Speakers:

Bernard Rossier. University of Lausanne, "Role of ENaC in sodium reabsorption." 8:00am

Victoria L.M. Herrera. Boston University, "Sodium/potassium ATPase." 8:30am

Thomas J. Jentsch. University of Hamburg, "Renal ion channels knockouts." 9:00am

Steven C. Hebert. Yale University, "TBA." 9:30am

Free Standing (Non-Track) Sessions:

Symposium:

TRP Channels: Physiological Genomics and Proteomics. Chairs: Stewart O. Sage, University of Cambridge, and Bernd Nilius, KU Leuven. Tuesday, April 5, 2005—3:15pm-5:15pm.

Speakers:

Bernd Nilius. KU Leuven, *“TRP channels: a critical overview.”* 3:15pm

Wolfgang Liedtke. Rockefeller University, *“TBA.”* 3:45

Viet Flockerzi. University of Saarlandes, *“TRP channels in transgenic models: an approach to systemic functions.”* 4:15pm

Craig Montell. Johns Hopkins University, *“TRP Channels and related channelopathies.”* 4:45pm

Featured Topics:

Acid-Base Transporters. Chair: Michael Romero, Case Western Reserve University. Presenter #1: Richard D. Vaughan-Jones. Burdon Sanderson Cardiac Science Centre, University Laboratory of Physiology, *“Spatial control of pHi in the heart: intercellular versus intracellular regulation.”* Presenter #2: Sylvie Breton. Massachusetts General Hospital, *“Acid-base transporters: regulation of the V-ATPase.”* Friday, April 1, 2005—3:15pm-5:15pm.

Transport: PKD, Cilium. Chair: Stefan Somlo, Yale University School of Medicine. Presenter #1: Friedhelm Hildebrandt. University of Michigan, *“Primary cilia: a unifying concept for renal cystic disease.”* Saturday, April 2, 2005—10:30am-12:30pm.

Urea Transporters in the Post Genomic Era. Chairs: Craig P. Smith, University of Manchester and Jeff M. Sands, Emory University School of Medicine. Presenter #1: Craig Smith. University of Manchester, *“Meet the family: urea transporters.”* Presenter #2: Jeff M. Sands, Emory University School of Medicine, *“Hormonal regulation of renal urea transporters.”* Saturday, April 2, 2005—3:15pm-5:15pm

Amino Acid Transporters. Chair: Yoshikatsu Kanai, Kyorin University School of Medicine. Presenter #1: Yoshikatsu Kanai. Kyorin University School of Medicine, *“Mechanisms of apical and basolateral sorting of amino acid transporters in epithelial cells.”* Presenter #2: Manuel Palacin. University of Barcelona, *“Renal handling of cystine and basic amino acids.”* Sunday, April 3, 2005—8:00am-10:00am.

IUPS Distinguished Lectureships Approved to Date:

The Wallace O. Fenn Lecture: Peter Agre, John's Hopkins University School of Medicine.

Soloman A. Berson Distinguished Lectureship of the APS Endocrinology & Metabolism Section: Amira Klip, Hospital for Sick Children, Toronto. "*Regulation of glucose transporters in muscle cells: epurr si muove*"

Ernest H. Starling Distinguished Lectureship of the APS Water & Electrolyte Homeostasis Section: Giuseppi Bianchi, University of Milano, Italy. "*The Genetic Control of Renal Na Handling in Primary Hypertension*"

OTHER EVENTS AND ANNOUNCEMENTS OF INTEREST TO THE EPITHELIAL TRANSPORT GROUP

ETG Steering Committee - Request for Nominations

The ETG Steering Committee is soliciting nominations for new members to serve on the committee. You may nominate yourself or others to stand for election in the summer of 2005 for appointment to the committee in the fall of 2005. The Steering Committee is primarily responsible for programming sessions focused on epithelial physiology at the annual Experimental Biology meeting. Please send nominations to Matthias Hediger, Ph.D., Director, Membrane Biology Program, Brigham & Women's Hospital/Renal Division, Harvard Institutes of Medicine, Room 570, 77 Avenue Louis Pasteur, Boston, MA 02115 (mhediger@rics.bwh.harvard.edu).

2004 Janssen Awards in Gastroenterology

The recipients of the 2004 Janssen Awards in Gastroenterology were presented in cooperation with the AGA this year for the second consecutive year at a reception held Wednesday, May 19th at the Orpheum Theatre in New Orleans during **Digestive Disease Week**. The Award for Sustained Achievement in Clinical Gastroenterology was presented to **Dr. Ernest Wright** and Dr. Stephen Hogan.

2005 Biophysical Society Fellows

Each year the Biophysical Society honors distinguished members who have demonstrated excellence in science and contributed to the expansion of the field of biophysics. The Society members selected to receive this honor at the 2005 Annual Meeting are: **Sunney I. Chan** (California Institute of Technology), **Edward H. Egelman** (University of Virginia Health Science Center), **Jeffrey Skolnick** (Buffalo Center of Excellence in Bioinformatics), **David D. Thomas** (University of Minnesota Medical School), and **Ernest M. Wright** (University of California, Los Angeles).

Mechanisms of Membrane Transport

This Gordon Research Summer Conference will be held from June 5-10, 2005 at the Tilton School located in Tilton, NH. The chair of this conference is Robert Stroud of the University of California, San Francisco. The conference WEB site is not yet available, but the link will be placed on the GRC WEB site's schedule of 2005 conferences at a later date. See: <http://www.grc.uri.edu/05sched.htm>.

Glucose Transporter Biology Snowmass 2005

This conference will take place from August 6-11, 2005 in Snowmass, CO. The meeting will be chaired by Timothy McGraw of Cornell University Medical College and Barbara Kahn of Harvard Medical School. The scientific program is not yet available. For information on this and other FASEB summer research conferences see: <http://src.faseb.org/>.

BioMedical Transporters 2005 (formally called PharmaConference)

The conference will be held from August 14-18, 2005 in St. Gallen, Switzerland at the OLMA Congress Center. Conference chairs are Matthias Hediger of Harvard Medical School, Robert Burrier of Invitrogen, Ken-ichi Inui of Kyoto University, and Peter Meier Abt of the University of Zürich. The focus will be on "Membrane Transporters: Bridging Basic and Applied Sciences". Topics include "Human transporter families, their roles in human diseases and their potential in drug discovery," "Transporter Drug Targets," "Drug Discovery Technologies," "Structure of membrane transporters and structure-based rational drug design," "Drug Transporter – Drug Metabolism Interplay," and "Drug Transport." For more information and the preliminary scientific program please visit our WEB site at: <http://www.bioparadigms.org/conference/05.htm>.

Multi-Drug Efflux Systems

The conference will be held from August 28-September 2, 2005 at Magdalen College in Oxford, UK. The meeting will be chaired by Attilio Di Pietro of the Institut de Biologie et Chimie des Proteines and Laura J. Piddock of the University of Birmingham Medical School. This is the second GRC conference on Multi-Drug Efflux Systems. Topics for the 2005 conference include "MultiDrug Resistance overview: from bacteria to man," "Biological significance of Multi-Drug Efflux Pumps," "Molecular Basis of Drug Recognition and Transport," "Structure and Molecular Mechanism of Efflux Pumps," "Mechanism of energy supply and coupling to drug efflux," "Regulation of Efflux pumps," "Clinical relevance," "Hot Topics / Controversies," and "Reflections on the Past and Glimpses into the future: Bioinformatics, Functional Genomics and Pharmacogenomics." For more information please see the conference WEB site at: <http://www.grc.uri.edu/programs/2005/multi.htm>.

Society for Basic Urologic Research (SBUR) and European Society for Urological Research (ESUR) 2005 Annual Symposium

The conference will be held from December 1 through December 5, 2005, in Miami Beach, Florida at the Wyndham Miami Beach. The scientific theme of the 2005 joint meeting of SBUR and ESUR is "Membrane Biology in Basic Urologic Research - molecular landscaping in normal physiology and pathophysiology". The Organizing Committee has selected this upcoming meeting's theme with the intent of adopting the concept of membrane molecular landscaping in basic urologic research to stimulate new ideas. For more information about SBUR see: <http://www.sbur.org/>. For more information about ESUR see: <http://www.esur.org/>.

POSITIONS AVAILABLE

Postdoctoral Fellowship in Epithelial Cell Physiology and Pathophysiology Available Immediately

Projects in the laboratory of **Dr. Erik Schwiebert, Ph.D.** focus on epithelial ion channels. Foci include purinergic receptor channels that act as calcium entry channels (the P2X receptor channels) gated by zinc and ATP, TRP calcium entry channels, store-operated calcium entry channels, CFTR, ENaC and ATP release channels in the context of normal physiology, cystic fibrosis (CF), and other disorders. We now currently use polarized mouse and human airway and kidney epithelial cell models whenever possible.

A **postdoctoral fellowship** is available immediately to study any or all of the above epithelial ion channels. We would like this fellow to begin work in January 2005. Preference will be given to electrophysiologists with some documentation of such training and with a Ph.D. degree. This postdoctoral fellowship will also include the opportunity to oversee as well as consult with electrophysiological CORE facilities within the Gregory Fleming James Cystic Fibrosis Research Center. These electrophysiological assays include but are not limited to: (1) in vivo nasal potential difference measurements in mice; (2) Ussing chamber analyses of primary and immortalized mouse and human airway epithelial cell monolayers; and (3) patch-clamp recordings on non-polarized cells and of the apical surface of polarized monolayers.

Please forward via e-mail, a curriculum vitae and short well-written statements as to (1) how your training fits with our laboratory and of (2) your long-term research goals. Please also arrange 3 letters of reference to be submitted to me. If a foreign applicant, please arrange a letter of reference from a colleague in the USA who knows of you and your work.

Erik M. Schwiebert, Ph.D.
Associate Professor of Physiology and Cell Biology
Research Scientist in the Gregory Fleming James CF Research Center
University of Alabama at Birmingham
MCLM 740, 1918 University Blvd.
Birmingham, AL 35294-0005
e-mail: eschwiebert@physiology.uab.edu

Assistant Professor of Pharmacology Faculty Position Available

The **Department of Pharmacology** at **Yonsei University**, Seoul, Korea is recruiting faculty at the level of **ASSISTANT PROFESSOR**. We are seeking a colleague that can contribute to a broadly interpreted theme of membrane physiology, building upon departmental strengths in membrane transport and epithelial biology. A strong modern infrastructure (Pharmacogenomic Research Center for Membrane Transport) will support research approaches studying molecular events in biologic systems that span the scale from single cells to whole organisms. Faculty members are expected to have a strong commitment to graduate and medical education, and contribute to our vigorous collaborative environment. Candidates should be fluent in verbal and written English, have a doctoral degree, and will be considered for a faculty rank and track commensurate with experience. Please send a copy of curriculum vitae, statement of research interests, and the names of three potential references to:

Min Goo Lee, MD, PhD
Director, Pharmacogenomic Research Center for Membrane Transport
Department of Pharmacology
Yonsei University College of Medicine
134 Sinchon-Dong
Seoul 120-752, Korea
Tel:+82 2 361 5221 / Fax:+82 2 313 1894
e-mail: mlee@yumc.yonsei.ac.kr

EPITHELIAL TRANSPORT GROUP STEERING COMMITTEE

Chair and APS Representative

Catherine M. Fuller
Department of Physiology and Biophysics
University of Alabama at Birmingham
1918 University Blvd, 830 MCLM
Birmingham, AL 35294-0005
(205) 934-6085
(205) 934-1445 (fax)
fuller@physiology.uab.edu

Past Chair

Thomas Kleyman
Department of Medicine/Renal
University of Pittsburgh
Scaife Hall, A919
3550 Terrace Street
Pittsburgh, PA 15261
(412) 647-3121
(412) 648-9166 (fax)
kleyman@pitt.edu

Vice Chair and Newsletter Editor

Matthias A. Hediger
Director, Membrane Biology Program
Brigham & Women's Hospital/Renal Div.
Harvard Institutes of Medicine, Rm. 570
77 Avenue Louis Pasteur
Boston, MA 02115
(617) 525-5820
(617) 525-5821 (fax)
mhediger@rics.bwh.harvard.edu

Neil A. Bradbury
University of Pittsburgh School of Medicine
Department of Cell Biology & Physiology
S306 BST S
3500 Terrace Street
Pittsburgh, PA 15261
(412) 648-2845
(412) 648-2844 (fax)
nabrad@pitt.edu

Jonathan D. Kaunitz M.D.
UCLA School of Medicine
Wadsworth VA Medical Center
Department of Medicine
11301 Wilshire Boulevard
Building 114 Suite 217
Los Angeles CA 90073
(310) 268-3879
(310) 268-4811 (fax)
jake@ucla.edu

Moshe Levi
University of Colorado
Health Science Center
Department of Medicine
4200 E Ninth Avenue, C281
Denver, CO 80262
(303) 315-8771
(303) 315-4852 (fax)
mmjil@aol.com

Michael F. Romero
Case Western Reserve University
Department of Physiology & Biophysics
2119 Abington Road, SOM-E545
Cleveland, OH 44106-4970
(216) 368-3180
(216) 368-3952 (fax)
mfr2@po.cwru.edu