



The *New* Friends of Physiology Newsletter

Department of Cell Physiology and Molecular Biophysics

www.ttuhsu.edu/som/physiology

Spring 2009



There's a New Chief in Town

Following the decision of former chair Dr. John Orem to return to full-time research, Dr. Luis Reuss was recruited in April 2007 after a competitive, nationwide search.

Originally from Chile, Dr. Reuss obtained both his B.A. and M.D. from the University of Chile before starting his academic career there.

Dr. Reuss' current research interest involves transport physiology. Specifically, he studies the structural biology of membrane proteins involved in ion transport and the role of ion channels in cell injury.

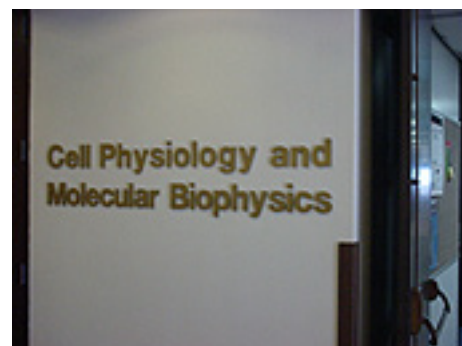
Since taking up Physiology's reins, he has hired five new faculty

members, created a new center to facilitate collaboration, and even changed the name of the department. Welcome to the Department of Cell Physiology and Molecular Biophysics (CPMB).

Dr. Reuss has implemented faculty-development programs to help faculty improve their teaching, research and institutional service.

Becoming the head man in Physiology wasn't all Dr. Reuss would do. When the institution's administration got wind of his effective track record, they recruited him as Dean of the Graduate School of Biomedical Sciences (GSBS).

Since appointing Thomas Pressley as Vice Chair to assist with departmental responsibilities, Dr. Reuss now splits his brainpower between Physiology and GSBS, both of which are flourishing under his direction.



Six inch high gold letters mark the department's gateway into research.



Hello Friends of Physiology,

It gives me great pleasure to communicate with you.

Change is the hallmark of science, and the evolution of Physiology as a basic biomedical discipline has made it imperative to continue - in depth - searching for the mechanisms of the function, normal and abnormal, of molecules, cells, tissues, organs and the entire organism. Within this broad scope, small organizations such as our department must find a focus.

This is necessary to develop a critical mass of investigators and to put in place high-quality resources that will facilitate their retention by the institute. Our chosen focus is research in membrane proteins, ranging from their structure to their function in health and disease.

To accomplish this, we secured the establishment of the Center for Membrane Protein Research, we established core research laboratories, and we have recruited five new faculty members (one associate and four assistant professors) that have already joined us. Two additional individuals have accepted our offers, and we expect them to move to Lubbock in 2009. I

feel very happy (and lucky) with this early success. The faculty and staff of the department have been my true partners in these efforts, and we have had unflinching support from President Baldwin, Vice President Stocco and Dean Berk. I hope that you will find time to read about these developments and support, or continue supporting, our work.

Warm personal regards,

Luis Reuss, M.D.

New Kids on the Block



Dr. Guillermo Altenberg - University of Buenos Aires, Argentina

Dr. Altenberg's current work focuses on structure/function analysis of the proteins in gap-junction channels (connexins), identifying pore-lining residues and determining the molecular mechanisms of permeability regulation. He is also looking at the mechanism of deafness caused by mutations of the cochlear connexins.

Dr. Altenberg joined the team because "we have a very strong membrane protein group in terms of experience, knowledge and methodologies. I hope my collaborations will begin to pay off in the next year."

Dr. Pablo Artigas - University of the Republic, Montevideo, Uruguay

Dr. Artigas focuses on understanding the function, mechanisms and pharmacology of the proteins that transport ions across the membrane. His first goal is to clarify the relationship between the structure, the function, and the mechanism of the Na/K pump and to find out how the physical properties of the lipid bilayer influence the function and pharmacology of cardiac ion transporting proteins embedded in this lipidic matrix.

"The department is shaping towards the study of membrane proteins. It gives you a good collection of people to discuss science."



Dr. Lan Guan - Chongqing Medical University, Chongqing, China

Dr. Guan studies X-ray crystal structures and mechanisms of membrane transport. Membrane permeases catalyze transport of solute across a cell membrane and play crucial roles in many aspects of cellular function. Her current research project focuses on bacterial and human sugar permeases.

"I feel very lucky to be in this environment. The department is still growing, and I feel here I will have more opportunities and more room for development. The department is built around giving training and advice to junior faculty."

Dr. Michaela Jansen - Johannes Gutenberg University, Mainz, Germany

Dr. Jansen's current research focuses on structure and function studies of ligand-gated ion channels and transporters. She is especially interested in Cys Loop receptors, which function mainly as neurotransmitter receptors.

"Everyone here is friendly, open and helpful. And not just the professors. The administrators are very helpful, too. I like the whole feeling of the department – everyone seems to fit."



Dr. Jose Perez-Zoghbi - Institute of Scientific Investigations (IVIC), Venezuela

Dr. Perez-Zoghbi's research focuses on understanding cellular mechanisms underlying lung disease by using "living" lung slices prepared from animals in combination with molecular, pharmacological and imaging tools including confocal microscopy. Currently, his research project is studying the mechanisms of regulation of intrapulmonary airway and artery smooth muscle contraction.

Dr. Perez-Zoghbi is excited about having his own lab for the first time, and says "the department really helps its young investigators."

The “Center” of our Research



Since the completion of the human genome sequence, biomedical research has evolved into a combination of genomics, proteomics, and functional genomics. Proteins and protein families are the wave of the future in scientific research. And our department will be at the forefront of this research.

The Center for Membrane Protein Research is the brainchild of Dr. Reuss. As chair of CPMB, he immediately began garnering support for his idea. Combining a group of top researchers at Texas Tech and the Health Sciences Center and using the advice of three internation-

ally recognized experts, the Center will apply protein research to the cure of diseases and the advancement of medical science.

Immediate goals of the new center are to promote collaborations between protein researchers and provide core facilities for protein study at TTUHSC. Members of the Center, consisting of seven CPMB faculty, two faculty from other School of Medicine departments and two faculty from the TTU campus, hope to receive extramural funding and solicit grants from major research organizations, such as NIH and American Heart Association.

For more information about the Center for Membrane Protein Research, go to www.ttuhschool.edu/som/physiology/programs/cmpr.aspx.

Grad Student Corner

First-year students are Luis Bermudez, Becky Cooper and Jood Hashem. Becky Cooper was awarded the Dean's Scholars Award from the GSBS office.

Third-year students are Ryan Downey, from the Pressley Lab, Lauren Hightower, from joint faculty member Sam Prien's Lab in the OB GYN Department, and Lisa Welch, also from the Prien Lab. Lisa Welch earned the ARCS Scholarship awarded at the Scholar Recognition Dinner on November 17, 2008.

The fourth-year grad student is Jimmy Fraigne, who works in the Orem Lab.

MD/PhD program students are SGA President Rick Bliss, from the Strahlendorf Lab, and Chris Tomingas, from the Altenberg Lab. Rick Bliss was awarded first place in the Graduate Students Third Year and Above category of the Student Research Week poster competition.



Grad students Ryan Downey, Jimmy Fraigne, Lisa Welch, Lauren Hightower and Becky Cooper pose in the CPMB hallway.

Degrees awarded since last newsletter (current location)

- May 2004 – Andrew Lovering, Ph.D. (U of Oregon)
- May 2004 – Rebin Titus, MS (U of So. Carolina)
- May 2005 – Sowmini Oomman, Ph.D. (U of Arkansas Med Sciences)
- Dec 2005 – Kamran Omidvar, MS (UT Houston)
- May 2006 – Lee Ferris, Ph.D. (SOM-TTUHSC)
- May 2008 – Todd Ward, MS (Pharmaceutical Rep., Dallas, TX)

Want to be part of the department again?

Nostalgic for your time in Physiology? Missing that old professor who helped you along the way? Well, you can still be a part of the research, genius and talent that goes into making CPMB the fine

department it is today. Why not contribute to the Friends of Physiology Endowment Fund?

We award scholarships to attract the best and brightest students to our graduate program. We also use

the funds to support student expenses not covered by other means. With your help, we can continue to supply our department with the best equipment, the best students and the best people anywhere.

To make a donation: visit the Giving to TTUHSC Web site at www.ttuahsc.edu/instadvance. Click on *Make an Online Gift* under the picture or *Make a Gift Online* in the left hand column. This will take you to a secure site. Search for the Friends of Physiology endowment fund in the search box on the right. Follow the rest of the instructions on the page to show Physiology just how much you appreciated your time here.

In Other News....

Drs. Lorenz Lutherer and Thomas Pressley recently won the Dean's Hero Awards, presented on Oct. 10, 2008, for assistance to the medical student class, which earned a nearly 100 percent passing rate on the USMLE Step 1 Exam.

Dr. Reuss recently won the TTUHSC President's Excellence in Teaching Award at the annual Faculty Awards Convention held on Oct. 16, 2008.

On April 24, 2008, Steven Berk, dean of the School of Medicine, hosted his Faculty Appreciation Dinner at the Frazier Pavillion on the Texas Tech Campus. During the ceremony, he recognized our department with an "Award of Excellence for Research" based upon grant dollars received by the department.



Drs. Lorenz Lutherer, Steven Berk, Dean of the School of Medicine, Pablo Artigas, Jose Perez-Zoghbi, Thomas Pressley and Luis Reuss pose for a shot after CPMB received an "Award of Excellence for Research."

Physiology Faces you Might be Missing

Dr. Donald Davies retired from our department in August 2008 after 35 years of service. He spent many years as Course Director and instructor of the respiratory physiology section of the course.

Our award-winning joint faculty member **Dr. Herb Janssen** was recruited by the new medical school in El Paso. Dr. Janssen has been well loved by students and is famous for his "Bucket Lectures."

Another faculty member taking a well-deserved retirement is **Dr. Richard Nathan**, who served as the Interim Chair of Physiology. Dr. Nathan taught the cardiovascular part of the course.

Dr. Ariel Escobar, associate professor, accepted a faculty position at the School of Engineering, University of California-Merced.

Current CPMB Faculty:

Guillermo Altenberg, MD, Ph.D.,
Associate Professor
Pablo Artigas, Ph.D.,
Assistant Professor
John C. Fowler, Ph.D.,
Associate Professor
Lan Guan, MD, Ph.D.,
Assistant Professor
Michaela Jansen, Ph.D.,
Assistant Professor
Lorenz O. Lutherer, MD, Ph.D.,
Professor

Raul Martinez-Zaguilán, Ph.D.,
Associate Professor
John M. Orem, Ph.D.,
Murray Professor
Jose Perez-Zoghbi, Ph.D.,
Assistant Professor
Thomas A. Pressley, Ph.D.,
Professor and Vice Chair
Luis Reuss, MD,
Professor and Chair
Souad Sennoune, Ph.D.,
Research Instructor
Jean C. Strahlendorf, Ph.D.,
Professor