

**2009-2010**  
**Summary of Activities**  
**Medical Student Summer Research Program**

The Thirty-sixth Annual Medical Student Research Day was held on Friday, August 6, 2010 hosting approximately 115 attendees in the Medical Sciences Building auditorium. Twenty first and second-year medical students participated in research projects with basic science and clinical faculty in the College of Medicine during the summer. A weekly seminar series introduced students to important research related topics. The program aims to highlight the relation between scientific discoveries and their application in clinical medicine.

Dr. Jane Reusch, Professor of Medicine and Biochemistry, and Director of Diabetes Team and Microscopy Core at the University of Colorado at Denver – Health Sciences Center was the keynote speaker. Dr. Reusch's seminar was entitled, "Cyclic AMP Response Element Binding Protein: An Unexpected Journey in Translational Medicine".

Culmination of the summer's work was the presentation of six oral and sixteen poster presentations at the Annual Medical Student Research Day. Student presentations and their faculty sponsors were as follows:

**ORAL PRESENTATIONS**

Jason Largen, freshman medical student. Investigating the roles of PP5 on the cellular response to genomic stress. Sponsored by Honkanen, Richard, Ph.D., Department of Biochemistry and Molecular Biology.

William Gannon, sophomore medical student. Clinical significance of chromosomal microdeletions and duplications among children with developmental disabilities. Sponsored by Swingle, Hanes, M.D., M.Ph., and Martinez, Jose, M.D., Department of Pediatrics.

Russ Terry, sophomore medical student. Regulation of vascular smooth muscle phenotype in coronary collateral growth. Sponsored by Rocic, Petra, Ph.D., Department of Biochemistry and Molecular Biology.

Krishna Karthik Chivukula, sophomore medical student. Alloderm for repair of complex abdominal wall defects in neonates and children. Sponsored by Hollands, Celeste, M.D., Department of Surgery.

Robert Kobelja, sophomore medical student. Glucose-6-Phosphate dehydrogenase (G6PDH) functions as a baro/chemo-gauge in pulmonary artery smooth muscle (PASM). Sponsored by Gupte, Sachin, Ph.D., Department of Biochemistry and Molecular Biology.

Cullen McCarthy, sophomore medical student. Restenosis following PCTA is potentiated in metabolic syndrome patients by enhanced VSMC dedifferentiation. Sponsored by Weber, David, Ph.D, Department of Physiology.

### **POSTER PRESENTATIONS**

Sarah Kelley, freshman medical student. Myosin light chain kinase regulates the surface expression and calcium entry through transient receptor potential vanilloid 4 channels in rat pulmonary microvascular endothelial cells. Sponsored by Parker, James, Ph.D., Department of Physiology.

Whitney Toole, freshman medical student. Palpebral fissure length and head circumference in children with autism spectrum disorders. Sponsored by Anderson, Stephanie, M.D., Department of Pediatrics.

Thomas Garth, Jr., freshman medical student. Caregivers' health literacy skills and opinions regarding pediatric providers' communications skills: a cross-sectional survey at the USA C&W. Sponsored by Connelly, Rosina, M.D., Department of Pediatrics.

Raleigh Adams, sophomore medical student. The role of acidosis on surface expression of acid-sensing ion channel-1A and -2A. Sponsored by Zha, Xiangming, Ph.D., Department of Cell Biology and Neuroscience.

Sara Long, sophomore medical student. The effect of oxygen tension and hyperglycemia on Glut-1 expression and glucose uptake in pulmonary artery endothelial cells. Sponsored by Fouty, Brian, M.D., Department of Pharmacology and Center for Lung Biology.

Annie Lee, freshman medical student. Emergency room visits and hospitalizations for acute and chronic diabetes-related complications of type 2 diabetes mellitus patients participating in a glucose status telemonitoring trial. Sponsored by Arrieta, Martha, M.D., M.Ph., Ph.D., and Crook, Errol, M.D., Department of Internal Medicine, and Center for Healthy Communities.

Brian Dilworth, sophomore medical student. Possible role of nitric oxide in liquid and macromolecule secretion by porcine bronchi. Sponsored by Ballard, Stepehn, Ph.D., Department of Physiology.

James Towner, freshman medical student. Overcoming cytokine-induced mtDNA damage in insulin secreting cells through enhanced repair capacity. Sponsored by Wilson, Glenn, Ph.D., Department of Cell Biology and Neuroscience.

Libby Wilson, sophomore medical student. Tracheal aspirate rage as a predictor of bronchopulmonary dysplasia in preterm infants. Sponsored by Benjamin, John, M.D., M.Ph., Department of Pediatrics, and Gebb, Sarah, Ph.D., Department of Cell Biology and Neuroscience.

Ryan Kunstadt, sophomore medical student. Biocarbonate channel expression and intracellular pH fluctuations following sodium bicarbonate correction of acidosis in pulmonary endothelial cells. Sponsored by Sayner, Sarah, Ph.D., Department of Cell Biology and Neuroscience.

Austin Fox, freshman medical student. Activation of B cells from lupus-prone *Rasgrp-1* deficient mice. Sponsored by Barrington, Robert, Ph.D., Department of Microbiology and Immunology.

Nicholas Bates, freshman medical student. Ventilator-induced injury and the unfolded protein response. Sponsored by Benjamin, John, M.D., M.Ph., Department of Pediatrics, and Brewer, Joseph, Ph.D., Department of Microbiology and Immunology.

Ben Shepherd, sophomore medical student. Physiologic impact of endothelial  $K_{ca}$  channels and eNOS on coronary artery tone. Sponsored by Taylor, Mark, Ph.D., Department of Physiology.

Lashundra Tiara Murphy, freshman medical student. Role of small heat shock protein 27 (HSP27) in atherosclerosis. Sponsored by Gerthoffer, William, Ph.D., Department of Biochemistry and Molecular Biology.

Missia Kohler, sophomore medical student. Cerebellar cortex derived from mature cystic teratomas of the ovary. Sponsored by Sosnowski, Jeffrey, M.D., Ph.D., Department of Pathology.

James Galle, sophomore medical student. Effect of cyclic GMP-dependent protein kinase (PKG) on platelet-derived growth factor (PDF-BB)-induced ERK1/2 phosphorylation in rat aortic smooth muscle cells. Sponsored by Lincoln, Thomas, Ph.D., Department of Physiology.

The Clyde G. "Sid" Huggins Medical Student Research Awards were presented to Mr. William Gannon, sophomore medical student for best oral presentation entitled, "*Clinical significance of chromosomal microdeletions and duplications among children with developmental disabilities.*" He was sponsored by Hanes Swingle, M.D., M.Ph., and Jose' Martinez, M.D., Department of Pediatrics, and Ms. Sara Long, sophomore medical student for best poster presentation entitled, "*The effect of oxygen tension and hyperglycemia on Glut-1 expression and glucose uptake in pulmonary artery endothelial cells.*" She was sponsored by Brian Fouty, M.D., Department of Pharmacology and Center for Lung Biology. Each winner was presented with a plaque of recognition and cash award. Both recipients are eligible to make their presentations at the Annual National Research Forum in Galveston, Texas.