

Meet Our 2009 Undergraduate Researchers!

Type of Institution	Graduation Year (Anticipated)
65% US Doctoral/Research Universities-Extensive	2008: 3%
9% US Doctoral/Research Universities-Intensive	2009: 54%
10% US Medical Schools/Medical Centers	2010: 28%
4% US Master's Colleges & Universities	2011: 10%
10% US Baccalaureate Colleges-Liberal Arts	2012: 5%
3% Canadian Universities	
6% International Universities	

Majors	Research Focus
46% Biology (animal science, life sciences/physiology/nutrition/cell)	56% Cardiovascular
11% Biochemistry	39% Cell & Molecular
9% Health Sciences/Medicine	39% Central Nervous System
9% Neuroscience/psychology	6% Comparative & Evolutionary
8% Exercise Science/Kinesiology	28% Endocrinology & Metabolism
6% Chemistry	16% Environmental & Exercise
5% Biomedical Engineering	10% Gastrointestinal & Liver
6% Liberal Arts	37% Neural Control/Autonom. Regul.
	22% Renal
	9% Respiration
	1% Water & Electrolyte Homeostasis
	9% Other (genetics, immunology, etc.)

Years of Research Experience

40%	1-2 years
28%	2-3 years
27%	3-4 years
4%	4-5 years
1%	>5 years

Future Plans

29%	Graduate School only
30%	Medical School only
22%	Graduate & Medical School
19%	Other Professional School

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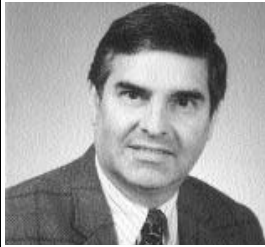
2009 APS Undergraduate Poster Session and David S. Bruce Award for Excellence in Undergraduate Research Reception



*Recognizing the
Undergraduate Researcher*

Experimental Biology 2009

Sunday, April 19, 2009
Morial Convention Center, Hall C
New Orleans, LA



David S. Bruce

David S. Bruce (1939 - 2000) served as Chair of the APS Teaching Section and as a professor of physiology at Wheaton College from 1978-2000. Dr. Bruce was a dedicated physiology educator who played active roles in both the APS and the Society for Integrative & Comparative Biology. As an undergraduate educator at Wheaton College, Dr. Bruce had a particular interest in engaging undergraduate students in scientific research. Dr. Bruce not only encouraged and supported his students in participating in research, but he also regularly brought undergraduate students to the Experimental Biology meeting, often to present their research findings. In 2000, Dr. Bruce died at the age of 61 of complications following a kidney transplant. This award honors Dr. Bruce's commitment to promoting undergraduate involvement in research, in the APS annual meeting, and, ultimately, in research careers.

APS Congratulates the 2009 Bruce Award Finalists

James F. Bardgett, University of Kentucky

Jeffrey J. Becker, University of California, Davis

Antoinette S. Dawson, Tougaloo College/Loma Linda University

Kyle J. Diehl, University of Colorado

Sumit Kar, Creighton University/University of Nebraska Med. Ctr.

Lauren C. Knupp, Michigan State University

Sarah M. McCurdy, St. Mary's University/University of Texas Health Sciences Center at San Antonio

Yen H. Nguyen, University of California, Davis

Jessica Ortega, University of Florida

Aoi Otagiri, Univ. of Tsukuba, Japan

Brian C. Prall, Radford University

Kathleen Quinn, McMaster University

Jessica L. Slutzky, Nationwide Children's Hospital

Kevin J. Yavorcik, University of Pittsburgh

Henok Yemane, Saint Louis University

**Support for the Bruce Awards is provided by
APS, Dr. Isis, and SEED Magazine**

APS thanks the sponsors of the Undergraduate Poster Session

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Texas Tech University Health Sciences Center
Department of Cell Physiology and Molecular Biophysics

Tulane University School of Medicine
Physiology Department

Virginia Commonwealth University School of Medicine
Dept of Physiology and Biophysics

2009 Undergraduate Presenters

Ryu, Alexander

Mayo Clinic

Effect of hydrogen sulfide on $[Ca^{2+}]_i$ regulation in airway smooth muscle

Sachs, Aaron N.

National Heart, Lung, Blood Institute, National Institutes of Health

LC-MS/MS analysis of differential centrifugation fractions from native inner medullary collecting duct (IMCD) of rat

Scarpace, Erin T.

University of Florida

High sucrose diet impact on voluntary wheel running prevents obesity in rats

Schafer, Johanna Marlies

North Carolina State University

Increased CaM kinase II-mediated phosphorylation of ampa receptors precedes status epilepticus

Scheider, Linda

Virginia Commonwealth University

Temperature controlled small animal platform for in vivo microcirculation studies

Seebaugh, Amanda M.

West Virginia Wesleyan College

A potential role for kisspeptin in puberty onset in sheep

Sherman, Elizabeth Grace

College of William and Mary

Sensitivity of neuromuscular junctions to unloading and pre-habilitation

Sliwa, Lindsay Nicole

Radford University

Anorectic effects of neuropeptide VF are mediated via central mu and kappa subtypes of opioid receptors

Slutzky, Jessica Lauren

Nationwide Children's Hospital

Resveratrol prevents RV/T changes in a neonatal model of hypoxia induced pulmonary hypertension

Smelter, Dan

Mayo Clinic

Thymic stromal lymphopoietin (TSLP) and airway smooth muscle

Spond, Julie Ann

Colorado State University

Effect of shRNA inhibition of ζ -crystallin expression on renal expression of phosphoenolpyruvate carboxykinase and glutaminase

Swenson, Christopher D.

Henry Ford Hospital

Dietary calcium restriction does not exaggerate salt-sensitive hypertension

Tawil, Rabih

Veterans Affairs Medical Center

Effects of gender and age on hypothalamic redox signaling and adrenomedullary catecholamine biosynthesis

Timoney, Gabriela Garcia

University of Richmond

The structural basis for the dual effects of fatty acids on Kv4 channel function

Timothee, Patricia

University of Delaware

Protein kinase C (PKC) mediates purinergic receptor induced contraction in MC3T3-E1 osteoblasts

Wang, Jian

Zhejiang University School of Medicine

Atorvastatin improves function of vascular endothelium by against oxidative stress injury

Wayne, Michelle Marie

University of Tennessee School of Medicine

Involvement of NF- κ B in the cross talk between the renin-angiotensin system and insulin signaling in skeletal muscle in burn injury

Yavorcik, Kevin J.

University of Pittsburgh

Vestibular effects on relative arterial blood flow to and venous return from the limbs during postural changes of conscious felines

Yemane, Henok T.

Saint Louis University

Sympathetic nerve activity during development of DOCA-salt hypertension

2009 Undergraduate Presenters

Alajajian, Sarah K.

University of Missouri

Effect of exercise training on coronary endothelin-1-mediated constriction and receptor expression in hypercholesterolemic swine

Alendy, Maikel J.

University of Florida

Cystathionine gamma-lyase and cystathionine beta-synthase expression and activity change with age and caloric restriction

Alnajjar, Khadijeh

Wright State University

Glycosylation of aquaporins in the freeze tolerant tree frog, *Hyla chrysoscelis*

Ambur, Lindsay Christen

University of South Dakota Sanford Sch. of Medicine

Losartan affects tyrosine hydroxylase protein expression in the A2 area and hypoglossal nucleus of normal and dystrophic hamsters

Aragon, Mario

Tuaine University

Spontaneously hypertensive rat mesenteric microvascular networks undergo angiogenesis in response to a wound healing stimulus

Baker, Alyson K.

University of Kansas Medical Center./University of

North Carolina at Chapel Hill
mTOR-dependent IL-10 expression inhibits LPS induction of tissue factor and cytokines in macrophages.

Bakhurin, Konstantin I.

University of Michigan

Scleraxis is expressed in adult tendons and is upregulated in response to mechanical loading

Bardgett, James

University of Kentucky

Deletion of both transient receptor potential vanilloid-1 (TRPV1) and TRPV4 genes disrupts osmoregulatory thirst and central fos activation

Becker, Jeffrey J.

University of California

Following an anoxic insult, a hippocampal neural circuit of the Syrian hamster, a hibernator, is more protected than the hippocampus of the rat, a nonhibernator

Berberich, Kristen

College of William & Mary

Effect of shear stress on Connexin43 (Cx43) protein expression in cultured arteries

Brandon, Claire

Capital University

International nutrition: a comparison of genetically modified food prevalence in the United States and Central and South America

Broge, Thomas A., Jr.

Bates College

Moderate hyperoxia inhibits glomus cell proliferation in the carotid body of neonatal rats

Calchary, Wendy Alyssa

Radford University

The threshold of central ghrelin induced anorexia is lower in chicks selected for low rather than high body weight

Carter, Brandon J.

Tulane University School of Medicine

Kidney injury response to elevated blood pressure vs increased intrarenal Ang II in 2K1C Goldblatt hypertensive rats

Cinquino, Nicholas

Skidmore College

Insulin resistance without elevated mTORC1 activity in muscles of mice fed a high fat diet for four or eight months

Cofield, Stuart Alden

Radford University

Litorin is associated with satiety but does not affect non-ingestive behaviors in chicks

Crnich, Rachael

Colorado State University

Dynamic PKC δ -mediated trafficking of TRPM4 regulates smooth muscle excitability

Dawson, Antoinette

University of Mississippi

Serotonin-mediated Ca^{2+} signaling in pulmonary arterial myocytes and the combined influence of maturation and high-altitude exposure

Diehl, Kyle J.

University of Colorado at Boulder

Effects of endothelin-1 on endothelial progenitor cell function

2009 Undergraduate Presenters

Estrada, Nelly M.

University of Texas at Brownsville
Expression of phosphorylated CREB in the fasted rat hippocampus

Foolad, Farnaz

Pennsylvania State University
Attenuation of ZnT2 in tumorigenic breast cancer cells results in apoptosis

Garlich, John M.

Saint Louis University
Effects of water temperature on hemodynamic responses to cold pressor test.

Gates, Benjamin

Mayo Clinic
Caveolae and neurotrophins in pulmonary artery smooth muscle

Ghosh, D. Dipon

Carnegie Mellon University
Base of the thumb domain has a role in ENaC gating

Glass, Emily Katharine

College of William and Mary
Effect of pre-habilitative conditioning on aged muscles

Haverland, Nicole A.

Minnesota State University Moorhead
Chronic paraplegia is associated with abnormal cardiac autonomic balance and changes in baroreflex control in normotensive rats

Horst, Kyle E.

The College of William & Mary
Protein interactions with cdc37 in agonist stimulated bovine aortic endothelial cells

Hughes, Stephanie Cristina

Appalachian State University
VEGF regulates gene expression of matrix factors during cervical remodeling in rodents

Kar, Sumit

University of Nebraska Medical Center
Exercise training normalizes ACE and ACE2 in the brain of rabbits with pacing induced chronic heart failure

Kechele, Daniel O.

University of Michigan
Increased intestinal secretory cell differentiation in mice administered total parenteral nutrition

Knupp, Lauren C.

Michigan State University
Angiotensin II (Ang II) in the paraventricular nucleus (PVN) stimulates elevations in PVN superoxide levels in the rat

Kohler, Missia

University of Georgia/University of Alabama at Birmingham
Flurbiprofen inhibits glioblastoma proliferation and migration by a COX-independent mechanism.

Kopa, Dawn Elizabeth

Florida State University College of Medicine
Sex differences in cardiovascular and metabolic responses of Sprague-Dawley rats to chronic subcutaneous leptin infusion

Kraus, Carl

Georgetown University
Male mice exhibit less ACE2 activity in the lung relative to females

Kretzer, Julie

University of Kentucky
Endogenous nitric oxide minimizes vasoconstriction during low frequency renal sympathetic nerve stimulation

LaPresto, Lindsay

University of Arizona
Nucleomics: targeting and genetic analysis of nutrient-sensing cells

Larned, Kristi J.

University of Missouri
Effect of acute inactivity on endothelin-1-mediated vasoconstriction in skeletal muscle feed arteries of diabetic rats

Lima, Augusto Martins

Universidade Federal de Minas Gerais
Central administration of angiotensin-(1-7) markedly reduces the tachycardia evoked by acute psychological stress exposure

MacMillan, Andrew C.

Nationwide Children's Hospital
Air pollution potentiates diabetes-induced cardiomyocyte dysfunction

Malan, Brandon B.

Brigham Young University
Myopathy and altered gastrocnemius and cardiac mTOR signaling in muscle-specific LKB1 knockout mice

Martin, Theodore J.

University of Western Ontario
Intracerebroventricular (ICV) injections of nesfatin-1 induces c-fos expression in the rat forebrain.

McAndrew, Elizabeth G.

University of New England
Atomic force and fluorescence microscopy imaging of cardiomyocyte plasma membrane, insulin receptor and caveolin-3

2009 Undergraduate Presenters

McCurdy, Sarah M.

University of Texas Health Science Center at San Antonio
SPARC mediates early extracellular matrix remodeling following myocardial infarction

Meiers, Kristen A.

Bates College
Exercise performance in moderate hypoxia in rats with impaired carotid bodies

Muncie, Christopher

Murray State Univ.
Immunoprecipitation of gastric H+/K+ATPase beta subunit in hyperglycemic mice.

Newmyer, Brandon Anthony

Radford University
Neuropeptide AF is associated with satiety in chicks

Nguyen, Yen Ha

University of California
Following histamine perfusion onto Syrian hamster hippocampal slices, enhanced neural excitability was observed on a pathway projecting to the brainstem

Nichols, Cody E.

West Virginia Wesleyan College
The effects of an antioxidant cocktail on apoptotic signaling in the soleus muscles of aged hindlimb suspended rats

Norton, Charles Elbert, III

University of New Mexico
Intermittent hypoxia augments NO-dependent pulmonary vasodilation

O'Rourke, Kellie Leatha

Penn State Erie
Effects of nitric oxide donors on hIK1 cell surface expression

Ortega, Jessica A.

University of Florida
H₂S induces lysosomal rupture in erythrocytes from an H₂S-tolerant marine polychaete

Ortega, Jocelynn M.

University of Florida
O₂, hypersalinity, and Cu²⁺ potentiate the toxicity of H₂S in erythrocytes of a marine invertebrate

Otagiri, Aoi

University of Tsukuba School of Medicine
Effect of PDIII inhibitor (Cilostazol) on ischemic angiogenesis in diabetic mice.

Ousley, Dominique D.

Western Michigan University
Changes in expression and localization of glial cell line-derived neurotrophic factor in skeletal muscle from rats at 3, 5 and 8 weeks of age

Paredes, Daniel A.

University of New Mexico
Decreased alpha 2B adrenergic receptor expression increases vascular but decreases renal eNOS expression.

Park, Michael S.

Emory University
NADPH oxidase signaling regulates epithelial sodium channel (ENaC) activity

Pasch, Erica

Missouri Western State University
Effects of triclosan on the normal intestinal microbiota and on susceptibility to experimental murine colitis

Patterson, Elaine

University of Kentucky
Angiotensin II receptor expression and blood pressure in F1 generation SHR-Brown Norway congenic rats

Pittner, Amie Lynn

Penn State Erie
The role of HSP70 and HSP90 in the trafficking of hIK1

Prall, Brian Christopher

Radford University
Central amylin causes more potent anorexigenic effects in chicks selected for low rather than high body weight

Quinn, Kathleen

McMaster University
Effects of peritoneal dialysis solutions on the murine peritoneal microcirculation

Reglin, Bettina

Charité Berlin
Development of collateral flow pathways in microvascular networks

Rettig-Zimmermann, Juliane

Charité-Universitätsmedizin Berlin
Expression of endothelin, endothelin type A receptor, isoforms of nitric oxide synthase, and angiotensin receptors in endothelin type B receptor deficient mice

Roby, Mackenzie Anne

College of William and Mary
Effects of age on training-induced adaptations of the neuromuscular junction