Meet Our 2009 Undergraduate Researchers!

Type of Institution
65% US Doctoral/Research Universities-Extensive
9% US Doctoral/Research Universities-Intensive
10% US Medical Schools/Medical Centers
4% US Master’s Colleges & Universities
10% US Baccalaureate Colleges-Liberal Arts
3% Canadian Universities
6% International Universities

Graduation Year (Anticipated)
2008: 3%
2009: 54%
2010: 28%
2011: 10%
2012: 5%

Majors
46% Biology (animal science, life sciences/physiology/nutrition/cell)
11% Biochemistry
9% Health Sciences/Medicine
9% Neuroscience/psychology
8% Exercise Science/Kinesiology
6% Chemistry
5% Biomedical Engineering
6% Liberal Arts

Research Focus
56% Cardiovascular
39% Cell & Molecular
39% Central Nervous System
6% Comparative & Evolutionary
28% Endocrinology & Metabolism
16% Environmental & Exercise
10% Gastrointestinal & Liver
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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Hannah V. Carey, Past President        Gary C. Sieck, President-Elect

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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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Department of Physiology and Cellular Biophysics
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Indiana University School of Medicine
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Department of Molecular and Cellular Physiology
Louisiana State University Health Sciences Center, New Orleans
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The Pennsylvania State University
The Huck Institutes of Life Sciences
Texas A&M Health Science Center
Baylor College of Dentistry
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
Effects of gender and age on hypothalamic redox signaling and adrenomedullary catecholamine biosynthesis

Wayne, Michelle Marie
University of Tennessee School of Medicine
Involvement of NF-κB in the cross talk between the renin-angiotensin system and insulin signaling in macrophages.

Bakhrurin, Konstantin I.
University of Michigan
Scleraxis is expressed in adult tendons and is upregulated in response to mechanical loading

Yemane, Henok T.
Saint Louis University
Sympathetic nerve activity during development of DOCA-salt hypertension

Sliwa, Lindsay Nicole
Radford University
Sensitivity of neuromuscular junctions to unloading and pre-habilitation

Sherman, Elizabeth Grace
College of William and Mary
Sensitivity of neuromuscular junctions to unloading and pre-habilitation

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
North Carolina at Chapel Hill
LC-MS/MS analysis of differential centrifugation fractions from native inner medullary collecting duct (IMCD) of rat

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

Ander, Alyson K.
University of Kansas Medical Center
Deletion of both transient receptor potential vanilloid-1 (TRPV1) and TRPV4 genes disrupts osmoregulatory thirst and central fos activation

Amaral, Sylwia
Wright State University
Glycosylation of aquaporins in the freeze tolerant tree frog, Hyla chrysoscelis

Amer, Linda
Wright State University
Glycosylation of aquaporins in the freeze tolerant tree frog, Hyla chrysoscelis

Amirjani, Sarah K.
University of Missouri
Effect of exercise training on coronary endothelin-1-mediated constriction and receptor expression in hypercholesterolemic swine

Alajajian, Sarah K.
University of Missouri
Effect of exercise training on coronary endothelin-1-mediated constriction and receptor expression in hypercholesterolemic swine

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

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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, Sunith  
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

Larney, 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

McCurdy, Sarah M.  
University of Texas Health Science Center at San Antonio  
SPARC mediates early extracellular matrix remodeling following myocardial infarction

Meyers, Kristen A.  
Bates College  
Exercise performance in moderate hypoxia in rats with impaired carotid bodies

Muncie, Christopher  
Murray State University  
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  
Penn State Erie  
Exercise performance in moderate hypoxia in rats with impaired carotid bodies

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

Reglin, Bettina  
McMaster University  
Effects of peritoneal dialysis solutions on the murine peritoneal microcirculation

Rettig-Zimmermann, Juliane  
Saint Louis University  
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