

Department of: Neuroscience, Cell Biology & Physiology

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1. Refereed publications and book chapters

Dr. Alvarez

Mentis, G. Z., Siembab, V. C., Zerda, R., O'Donovan, M. J., & Alvarez, F. J. (2006). Primary afferent synapses on developing and adult rensaw cells. *J. Neurosci.*, 26(51), 13297-13310.

Dr. Brown

Gultice, A. D., Selesniemi, K. L., & Brown, T. L. (2006). Hypoxia inhibits differentiation of lineage-specific rho-1 trophoblast giant cells. *Biol. Reprod.*, 74(6), 1041-1050.

Kulkarni, K., Selesniemi, K., & Brown, T. L. (2006). Interferon-gamma sensitizes the human salivary gland cell line, hsg, to tumor necrosis factor-alpha induced activation of dual apoptotic pathways. *Apoptosis*, 11(12), 2205-2215.

Lauf, P. K., Warwar, R., Brown, T. L., & Adragna, N. C. (2006). Regulation of potassium transport in human lens epithelial cells. *Exp. Eye Res.*, 82(1), 55-64.

Misri, S., Chimote, A. A., Adragna, N. C., Warwar, R., Brown, T. L., & Lauf, P. K. (2006). Kcc isoforms in a human lens epithelial cell line (b3) and lens tissue extracts. *Exp. Eye Res.*, 83(5), 1287-1294.

Dr. Corbett

Jarnot, M., & Corbett, A. M. (2006). Immunolocalization of nav1.2 channel subtypes in rat and cat brain and spinal cord with high affinity antibodies. *Brain Res.*, 1107(1), 1-12.

Dr. Engisch

Wang, X., Engisch, K. L., Teichert, R. W., Olivera, B. M., Pinter, M. J., & Rich, M. M. (2006). Prolongation of evoked and spontaneous synaptic currents at the neuromuscular junction after activity blockade is caused by the upregulation of fetal acetylcholine receptors. *J. Neurosci.*, 26(35), 8983-8987.

Dr. Fyffe

Adragna, N. C., Ferrell, C. M., Zhang, J., Di Fulvio, M., Temprana, C. F., Sharma, A., Fyffe, R. E., Cool, D. R., & Lauf, P. K. (2006). Signal transduction mechanisms of k⁺-cl⁻ cotransport regulation and relationship to disease. *Acta Physiol. (Oxf)*, 187(1-2), 125-139.

Leao, K.E., Leao, R. N., Sun, H., Fyffe, R. E., & Walmsley, B. (2006a). Hyperpolarization-activated currents are differentially expressed in mice brainstem auditory nuclei. *J. Physiol.*, 576(Pt 3), 849-864.

Leao, R. N., Sun, H., Svahn, K., Berntson, A., Youssoufian, M., Paolini, A. G., Fyffe, R. E., & Walmsley, B. (2006b). Topographic organization in the auditory brainstem of juvenile mice is disrupted in congenital deafness. *J. Physiol.*, 571(Pt 3), 563-578.

Walmsley, B., Berntson, A., Leao, R. N., & Fyffe, R. E. (2006). Activity-dependent regulation of synaptic strength and neuronal excitability in central auditory pathways. *J. Physiol.*, 572(Pt 2), 313-321.

Dr. Gomez-Cambronero

Di Fulvio, M., Lehman, N., Lin, X., Lopez, I., & Gomez-Cambronero, J. (2006). The elucidation of novel sh2 binding sites on pld2. *Oncogene*, 25(21), 3032-3040.

Lehman, N., Di Fulvio, M., McCray, N., Campos, I., Tabatabaian, F., & Gomez-Cambronero, J. (2006). Phagocyte cell migration is mediated by phospholipases pld1 and pld2. *Blood*, 108(10), 3564-3572.

Dr. Halm

Halm, S. T., Liao, T., & Halm, D. R. (2006). Distinct k⁺ conductive pathways are required for cl⁻ and k⁺ secretion across distal colonic epithelium. *Am. J. Physiol. Cell Physiol.*, 291(4), C636-C648.

Dr. Rich

Khan, J., Harrison, T. B., Rich, M. M., & Moss, M. (2006). Early development of critical illness myopathy and neuropathy in patients with severe sepsis. *Neurology*, 67(8), 1421-1425.

Teener, J. W., & Rich, M. M. (2006). Dysregulation of sodium channel gating in critical illness myopathy. *J. Muscle Res. Cell Motil.*, 27(5-7), 291-296.

Dr. Wyatt

Buckler, K. J., Williams, B. A., Orozco, R. V., & Wyatt, C. N. (2006). The role of task-like k⁺ channels in oxygen sensing in the carotid body. *Novartis Found. Symp.*, 272, 73-85; discussion 85-94, 131-140.

Evans, A. M., Hardie, D. G., Galione, A., Peers, C., Kumar, P., & Wyatt, C. N. (2006a). Amp-activated protein kinase couples mitochondrial inhibition by hypoxia to cell-specific ca²⁺ signalling mechanisms in oxygen-sensing cells. *Novartis Found. Symp.*, 272, 234-252; discussion 252-238, 274-239.

Evans, A. M., Mustard, K. J., Wyatt, C. N., Dipp, M., Kinnear, N. P., & Hardie, D. G. (2006b). Does amp-activated protein kinase couple inhibition of mitochondrial oxidative phosphorylation by hypoxia to pulmonary artery constriction? *Adv. Exp. Med. Biol.*, 580, 147-154; discussion 351-149.

Wyatt, C. N., Kumar, P., Aley, P., Peers, C., Hardie, D. G., & Evans, A. M. (2006). Does amp-activated protein kinase couple hypoxic inhibition of oxidative phosphorylation to carotid body excitation? *Adv. Exp. Med. Biol.*, 580, 191-196; discussion 351-199.

2. Presentations and invited talks

Dr. Brown

Innexus Biotechnologies and the University of Kentucky. Cellular Paradigms of Signal Transduction

University of Kentucky College of Medicine, Department of Microbiology, Immunology, and Molecular Genetics and Immpheron, Inc., Regulation of Apoptotic Cell Death: Defining Avenues for Therapeutic Intervention

Dr. Cope

Dept. of Physiology, Northwestern University, Chicago, IL “Estimating PIC From Paired-unit Firing in Decerebrate Cats”

Dept. of Physiology, University of Wisconsin, Madison, WI “Injury Signals in Synaptic Plasticity”

Dept. of Kinesiology Action Club, Penn State University, Philadelphia, PA “Functional Assemblies of Motor Units “The Limits of Regeneration (Post-Regeneration Constraints on Recovery)”

Indiana University School of Medicine, Stark Neurosciences Research Institute

Dr. Fyffe

Steamboat Springs, CO 39th Annual Winter Conference on Brain Research Panel Organizer and Session Chair

Copenhagen, Denmark, Copenhagen Motoneurone Meeting “Reorganization of membrane ion channels in motoneurons following axotomy”

University of Leeds, UK, Dept. of Neuroscience “Voltage-gated potassium channels in motoneurons”

Indiana University School of Medicine, Stark Neurosciences Research Institute “Kv2.1 channel clustering in motoneurons”

Dr. Gomez Cambronero

39th National Meeting, Society Leukocyte Biology. San Antonio, TX, Phospholipase D is involved in chemotaxis.

Wells Research Center, Indiana University School of Medicine, Indianapolis, IN;
Molecular Basis of Leukocyte Inflammation: A Kinase/Phospholipase Interplay

Dr. Halm

Dayton Area Pathology meeting, Dayton OH, Intestinal Secretions: Ions, Water and Mucus.

Lake Cumberland Biological Transport Group Meeting, Cryptic rafting during secretory signaling.

Dr. Miska

The Buckeye Area Chapter of the American Association for Medical Transcription

Dr. Putnam

Department of Zoology, University of British Columbia, Vancouver, Canada

pH, CO₂ and the Brain meeting sponsored by the Finnish Graduate School of Neuroscience, Helsinki, Finland

Dunaway/Burnham invited lecture at the Department of Physiology, Dartmouth Medical School, Hanover, NH

Dr. Rich

European Muscle Conference, Heidelberg, Germany, Dysregulation of sodium channel gating in Critical Illness Myopathy

Dr. Wooley

Harvard Medical School, Boston, MA, Department of Microbiology and Molecular Genetics

25th Annual Meeting, American Society for Virology, Madison, WI. A new phenotypic assay for HIV-1-infected patients

Tri-Service (Air Force, Army, Navy) Biomarker and Biomonitor Conference, Fairborn, OH, Genomic Biomarkers for Early Detection of Threat Exposure

3. *Invitations to participate or chair symposia*

Dr. Fyffe

Central Research Forum, School of Medicine

Dr. Wooley

Annual GLRCE Meeting, Hilton Head, SC, Session Chair for Virology

4. Editorial board memberships

Dr. Brown

American Journal of Physiology-Cell Physiology

Dr. Goldfinger

J. Integrative Neuroscience

Dr. Halm

American Journal of Physiology: Cell Physiology

Dr. Putnam

American Journal of Physiology: Cell Physiology

5. Granting Agency Study Section Memberships

Francisco J. Alvarez

National Institute of Health, Sensory Motor Integration Study Section, regular member

Nancy J. Bigley

Alzheimers Foundation

Thomas L. Brown

National Science Foundation-Molecular & Cellular Biosciences Program

Julian Gomez Cambronero

American Heart Association Research Consortium, Panel for Molecular Signaling, Basic Cell and Mol Biol

NIH, Innate Immunity and Inflammation (III) Study Section

Timothy C. Cope

Ad Hoc member NIH Study Section

Adrian Corbett

American Heart Association (Ohio Valley Affiliate) grant review panel section 4A

Robert E.W. Fyffe

External Scientific Advisory Board, NIH Center of Biomedical Research Excellence (COBRE), University of North Dakota (Site visit, Nov 30-Dec 03, 2006); COBRE internal seed grant reviews

NIH Study Section Member – Interdisciplinary Center Core Grants (Neuroscience Blueprint; NINDS ZNS1 SRB-W 20 Study Section)

NSF Grant proposal review

Dan R. Halm

NIH Special Emphasis Panel

Robert W. Putnam

Lytmos Consulting Group, LLC

Dawn P. Wooley

NIH/NIAID GLRCE Study Section

6. Offices held in National professional organizations

Dr. Bigley

American Academy of Microbiology, Abbott Laboratories Award in Clinical and Diagnostic Immunology Nominating Committee. This award honors a distinguished scientist in clinical or diagnostic immunology for outstanding contributions.

Dr. Halm

Ohio Physiological Society, Treasurer

Dr. Wooley

NIH/NIAID Region V "Great Lakes," Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research, Executive Board Member

7. Special events, symposia or colloquia

None

8. Faculty who were awarded professional development leave

None

9. Faculty, staff or students who were given awards locally, nationally or internationally

Faculty

Dr. Cambronero

Outstanding Achievement in Medical Education and Research Award, Academy of Medicine, Dayton

Dr. Miska

2006 National Society of Collegiate Scholars Faculty of the Year Award Nomination.

Dr. Wyatt

Finalist in the young investigator awards, 10th Oxford Conference, Modeling and the Control of Breathing, Lake Louise, Canada

Students

Jessica Hoying

2006 Student Excellence Award, Anatomy, School of Graduate Studies, WSU

Adam Deardorff

2006 Galen Award, scholastic excellence in anatomy, Department of Neuroscience, Cell Biology and Physiology, WSU

10. Outreach programs

Dr. Alvarez

Tour of Electron Microscopy facility Troy Christian High School students, one-day event in spring

Dr. Bigley

Mentored (with Ken Frey) a High School science project (Derek Smith) that won top awards at all levels including the state level.

Dr. Fyffe

Miami Valley School Board of Trustees
University Honors Institute – Neuroscience/CBR Information Booth
Miami Valley School – senior's career day

Dr. Miska

Exploring Human Anatomy: An Interactive Anatomy Lab Experience. The functions of the major organs and organ systems of the human body were presented using preserved human specimens, included healthy and diseased organs. Presentations were given to over 1000 high school and technical college students.

Miami Valley Career Technology Center (19 students) January 9
Springfield Shawnee High School (22 students) January 11
Fort Jennings High School (25 students) March 1
Northmont High School (50 students) April 3
Northmont High School (50 students) April 5
Beavercreek High School (40 students) April 7
Chaminade-Julienne High School (30 students) April 10
Carroll High School (30 students) April 12
Ivy Tech State College (20 students) April 14
Fairmont High School (50 students) April 17
Fairmont High School (50 students) April 19
Beavercreek High School (40 students) April 21
Miami Valley Career Technology Center (20 students) April 24
Lakota East High School (45 students) April 24
Alter High School (40 students) April 26
Lakota East High School (45 students) April 26
West Carrollton High School (30 students) April 28
Carroll High School (30 students) May 1
CTC (20 students) May 3
Springfield North High School (30 students) May 5
Springfield JVS (25 students) May 8
Monroe High School (40 students) May 10
Green County Career Center (20 students) May 12
Green County Career Center (25 students) May 15
Reading High School (10 students) May 17
Centerville High School (15 students) May 19
Franklin High School (25 students) May 22
Centerville High School (40 students) May 24
St. Henry High School (25 students) May 26
Springfield Shawnee High School (25 students) June 5
Darke County Developing New Physicians' Medical Summer Camp (10 students) June 9
Miami Jacobs Career College (10 students) June 19
Miami Jacobs Career College (10 students) June 21
RETS Tech (35 students) July 14
Miami Valley Career Technology Center (30 students) August 9
Greenville High School (10 students) October 23
Green County Career Center (20 students) October 25
Miami Valley Career Technology Center (5 students) October 30
WSU Biology Honors Students (15 students) November 8
WSU Biology Honors Students (15 students) November 9

Ridgeville Christian High School (10 students) November 15
Southwestern College (30 students) November 22
Miami Valley Career Technology Center (35 students) November 27

Dr. Nieder

Horizons in Medicine – directed medical students in the instruction of HS students for the one week anatomy segment

Dr. Pearson

Mini-Med School Neuroscience teaching demonstration

11. Student clubs and activities

None

12. Undergraduate honors students

Roger Fecher

Mentor: Dr. Robert Fyffe, “Activity dependent modulation of KV2.1 channels”

13. Off campus or special interest courses

Dr. Wooley

Biosafety, taught on campus, educates people how to work safely with biological hazards

Dr. Rich

Summer lectures in the Neurology course for psychiatry residents at Elizabeth Place

14. Graduate students

Jordan Bohnic, “Role of platelet-rich plasma in acceleration of bone fracture healing,” entering medical school Toledo

D’Wan Carpenter

Susan Conrad, “Development of chemosensitivity in neurons from the nucleus tractus solitarius (NTS),” year two medical student, WSU Boonshoft SOM

Trevor Downing, “The relationship between lactic acid, reactive oxygen species and the hypoxia-induced acidification seen in chemosensitive neurons of the nucleus tractus solitarius (NTS),” year one medical student, WSU Boonshoft SOM

Eileen FitzSimons, “Progression of amyotrophic lateral sclerosis: changes in the recurrent inhibiting circuit of G93A SOD-1 mice”

Amy Gultice, “Hypoxia inhibits trophoblast giant cell differentiation”

Jessica Hoying, “The role of hyaluronic acid treatment in the prevention of keloid formation,” year one medical student, WSU Boonshoft SOM

McMillan, Patricia, “The distribution and expression of the G-protein-activated inward rectifying potassium channel subunits: GIRK-1 (Kir 3.1), GIRK-2 (Kir 3.2) and GIRK-3 (Kir3.3) in the rodent spinal cord”

Nadia Regis

John Roebel, “developmental expression of calcium-binding proteins in the AVCN and MNTB of normal hearing and congenitally deaf mice,” year one medical student, WSU Boonshoft SOM

Holly Short, “Prefrontal activation and volume in a group of never-medicated schizophrenics: an examination of gray and white matter by Brodmann areas,” entering PA school in Kentucky

Nathan Smith, year one medical student, WSU Boonshoft SOM

Ethan Stoll, in osteopathic medical school in Florida

Farnaz Tabatabaian, “The measurement of endogenous mRNA expression of PLD isoforms in HL-60 cells using QRT-PCR and the impact of these isoforms on gene expression of mTOR and S6K,” in medical school Illinois

Cynthia Wingert, “CD11b+ microglia in the trigeminal ganglion of immunized BMB/c mice following ocular challenge with HSV-1,” faculty, Cedarville University