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Grants & Clinical Studies/Trials ............................ 1

Sergio D. Bergese, MD is a co-investigator on a new NIH R01 grant titled “Developing individualized strategies to prevent nausea and vomiting” in humans with faculty at the University of California, San Francisco. The grant, which is currently pending, received an excellent score.

AJ Cardounel, PhD was awarded an NIH American Recovery and Reinvestment Act (ARRA) subaward, “Enzymology of dimethylarginase,” to develop small molecule inhibitors for dimethylarginase enzymes. The dimethylarginase enzymes regulate nitric oxide production and are involved in angiogenesis. The current award will assess the effects of dimethylarginase inhibitors as potential therapeutic agents for limiting the growth of solid tumors.

Lawrence J. Druhan, PhD, co-PI, submitted a R01 grant titled “Regulation of p53 transcriptional activity by heat shock proteins in doxorubicin-induced cardiotoxicity” with investigators at the Dorothy M. Davis Heart & Lung Research Institute (DHLRI). The principal investigator is Govindasamy Ilangovan, PhD, associate professor, cardiovascular medicine.

Mark A. Gerhardt, MD, PhD and Gretel Monreal, PhD submitted a “FAER – research in education” two-year developmental grant to FAER to implement their annual CA-1 skills lab. Dr. Gerhardt is the PI.

Fievos L. Christofi, PhD submitted a new NIH R01 grant application, “Neuroimaging of purinergic pathways in the human enteric nervous system,” which involves an international collaboration to study neurobiology of disease in humans. The grant is in partnership with a team of investigators at OSU, NIH/NIDDK and foreign national investigators.

Studies will explore the role of purines in the neurophysiology, neuroplasticity, and neurogenic diarrhea in inflammatory bowel disease and irritable bowel syndrome in the colon.

Dr. Christofi has teamed up with investigators at the Technische Universität München, Germany (Michael Schemann, PhD, chair of human biology and Sabine Buhner, senior research scientist); investigators at OSU, including Wendy L. Frankel, MD (professor and director of clinical pathology), Alan E. Harzman, MD (assistant professor, GI surgery), Maher Azzouz, MD (associate professor, director of endoscopy), AJ Cardounel, PhD (research scientist, anesthesiology), Roger R. Dzwonczyk (clinical engineer, anesthesiology), Jacqueline E. Wunderlich, MD, PhD (clinical instructor house staff, anesthesiology), and Kenneth Jacobson, PhD (chief medicinal chemistry, NIH NIDDK).

The work hopes to provide a basis for novel therapeutic targets involving purinergic/adenosine receptors. Targeting adenosine receptors or enzymes involved in its metabolism has shown promising results in alleviating or preventing experimental colitis.

Anesthesiology residents are encouraged to apply for research awards from the Dominic and Lisa Mandalfino Memorial Fund in Anesthesiology. Contact Fievos L. Christofi, PhD at (614) 688-3802 for more information.

Donations can be made to the Mandalfino memorial fund as part of Campus Campaign 2011. Make a donation to fund number 604460.

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Research News is a publication of the Department of Anesthesiology.

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Roger R. Dzwonczyk, an electrical and biomedical engineer, has provided research/technical support and guidance to our faculty, residents and students for over 28 years.

Roger mentors medical students who pursue research during medical school. His students have received several achievement awards for their accomplishments; they have presented their work at scientific meetings and many have published their work in medical journals. Recently, he and an OSU medical student completed a cost/benefit analysis of the use of low-field intraoperative MRI for tumor resection, which will be published in the Journal of MRI. Roger is a member of the OSU College of Medicine Medical Student Research Faculty Advisory Council.

Roger has done independent research with several departments at The Ohio State University Medical Center. With cardiothoracic surgery, he developed a method to estimate heart muscle viability using myocardial electrical impedance (MEI). This research group is the first in the world to measure MEI on patients clinically; they received a patent for the technology in February 2010. In addition, Roger developed a real-time method to predict the outcome of defibrillation in cardiac arrest patients with emergency medicine, as well as a method to diagnose obstructive sleep apnea with neurology’s sleep disorder center. He has also patented these technologies.

Roger spends a lot of time volunteering professionally. He advises OSU engineering students who bring sustainable technology to people both locally and internationally. For the past seven years, Roger and the students have traveled to Honduras to implement their technology at an HIV orphanage. There, they have set up a computer lab, improved drinking water quality and introduced passive cooling techniques to this tropical area. In 2008, Roger received the OSU College of Engineering Boyer Award for teaching innovations in the college. For Project HOPE, a medical relief organization, Roger has traveled to many developing countries to work on medical equipment. He recently spent three weeks in Haiti, assessing and fixing equipment at hospitals damaged by the January 12, 2010 earthquake. He has been appointed as one of Project HOPE’s two clinical engineering directors and technical advisors. In his tenure in the Department of Anesthesiology, Roger has published 46 peer-reviewed journal articles, 72 abstracts and 20 engineering reports. He has 10 U.S. patents.

OSUMC Selected as Host Site for Medical Student Anesthesia Research Program

The Ohio State University Medical Center has been designated as a host site for the 2011 Foundation for Anesthesia Education and Research (FAER) Medical Student Anesthesia Research Fellowship program. Two medical students will be participating in an eight-week anesthesia research fellowship this summer at Ohio State.

Renuka Shenoy (Northeastern Ohio Universities College of Medicine) and Zachary Rost (University of Toledo College of Medicine) will begin their fellowships in June 2011. In addition to gaining valuable research experience, Renuka and Zachary will have the opportunity to present their research findings at the American Society of Anesthesiologists’s annual meeting.

To learn more about this exciting opportunity, contact Sergio D. Bergese, MD at (614) 293-8487 or click here.
Anesthesia Department Research Meeting

At the March 15 anesthesia department research meeting, presentations were given by **Erika Puente, MD** (clinical trials and investigator-initiated studies, industry funded), **Hamdy Elsayed-Awad, MD** (wound healing, CCTA Pilot Award), **AJ Cardounel, PhD** (bench side to bedside, NIH studies), and **Lawrence J. Druhan, PhD** (*Nature* 2011). The next meeting will be **Tuesday, May 17 at 2:30 PM in James 518A**. Meetings will be held every other month, and all faculty, Fellows, residents, CRNAs and research staff are invited to attend.

**Resident Award**

**Mushoba Njalamimba, MD** received the “resident travel award” for her poster presentation, “Transient vision loss during cervical radiofrequency ablation - a case report,” at the American Society of Regional Anesthesia and Pain Medicine’s 2010 annual Pain Medicine Meeting and Workshops.

**Abstracts**

Nine abstracts were presented as medically challenging cases at the annual meeting of the American Society of Anesthesiologists.

In addition, 17 residents/medical students will present 19 abstracts at the Midwest Anesthesia Residents Conference in April.

**Resident & CBY Research Rotation**

The resident research rotation has expanded to include CBY interns. Seven CBYs completed their research rotation: **Erie Egeler, MD**, **Jeffrey Fujii, MD**, **Warren Grace, MD**, **Kyle Macaluso, MD**, **Matthew McConnell, MD**, **Jesse Richards, MD**, and **Christian Walker, MD**. Two CA-1 residents also completed rotations: **Moumen Asbahi, MD**, and **Jennifer Watson, DO**.

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**Faculty-authored Publications**

**Lawrence J. Druhan, PhD**, anesthesiology, is a member of a team of investigators from DHLLI with a landmark publication in *Nature*.


**Other publications:**


*The mistake clearly says it was published in 2009; it was published in December 2010.*


Continued on page 4
Promotions & Leadership Activities in Research

- Deven Kothari, MD and Ravi S. Tripathi, MD were appointed to the Ohio Pregnancy Associated Mortality Review Board for the Ohio Department of Health.
- New staff:
  - Suejong Jang, PhD - post doctoral researcher
  - Travis Smith - student research assistant
- Eric L. Lopez was promoted to clinical research coordinator.
- David B. Tulman was promoted to clinical research assistant.

Effective February 1, Fievos L. Christofi, PhD was inducted as a Fellow of the American Gastroenterology Association (AGAF). Fewer than 5% of AGA members are inducted as Fellows!

Faculty-authored Publications (continued from page 3)


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