March 2008

FROM THE DIRECTOR

It is hard to believe spring is just around the corner but after this winter many of us are ready for it to arrive. We have had an exciting quarter with the launch of our New Website that can be found at http://dalton.missouri.edu/. It is packed with useful information about the Dalton Cardiovascular Research Center, its investigators, their ongoing research programs and news and events around the Center. I hope you get a chance to stop by and view it.

We have several new News Release items the details of which can be found in this newsletter. Congratulations to each of you for the well earned recognition.

We are continuing our Recruitment Efforts for two new investigators in partnership with the Department of Biomedical Sciences in the College of Veterinary Medicine and the Department of Medical Pharmacology & Physiology in the School of Medicine. We are hoping that we will soon be able to announce the acceptance of our offers.

This year’s Cardiovascular Day was a great success. This event is co-sponsored each year by the Dalton Cardiovascular Research Center, the Department of Biomedical Sciences in the College of Veterinary Medicine, the Department of Medical Pharmacology and Physiology in the School of Medicine, the University Lectures Committee, and the National Center for Gender Physiology. This year the Department of Biomedical Sciences deserves a round of thanks for acting as lead organizers of the event. Additional thanks are in order for all of you who attended and participated in the scientific program. This year we had a total of 52 abstracts presented and a little over 100 attendees!

-Gerry Meininger

Dalton Welcomes a New Investigator

Cuihua Zhang, MD, PhD joined Dalton as an Investigator on January 1, 2008.

Dr. Zhang joins us as a researcher from Texas A&M University and holds an Associate Professor position with tenure in Departments of Internal Medicine, Medical Pharmacology & Physiology and Nutritional Sciences.

Dr. Zhang’s basic research is aimed at understanding the coronary microcirculation. She is currently investigating factors that contribute to ischemic heart disease by assessing a potential role of the inflammatory cytokine, tumor necrosis factor-alpha. She is also investigating factors that contribute to vascular disease in diabetes.

2008 Intel Science Talent Search

Evan Mirts, a high school student from Jefferson City, won 10th place in the Intel Science Talent Search (National Science Fair).

Evan's project involved using a Scanning Ion Conductance Microscope to image chloroplasts at ~100 nm resolution.

The research was conducted in the laboratory of Dr. Kevin Gillis, a resident Dalton Cardiovascular Research Center Investigator and a Professor in the Department of Biological Engineering.

Evan was the only finalist (among 40) from Missouri and won a $20,000 scholarship and a laptop computer for placing 10th.

The press release is at:

http://www.intel.com/pressroom/archive/releases/20080311edu.htm

Discovery Channel News Story

The Discovery Channel recently ran a news article about Dr. Shubhra Gangopadhyay and Dr. Polo-Parada’s research on Nanoparticles designed to deliver shockwaves and how their device will enhance drug delivery to treat disease.

To view the news story, click here.

Because of Dr. Polo-Parada’s work with the "microshockwave generator integrated with nanoparticle delivery for cell transfection, cell imaging and gene therapy", he has been offered to present at the WBT showcase 2008 in Arlington, TX, March 26-28, 2008 as part of an outstanding group of researchers and entrepreneurs representing breakthrough technologies.
Inaugural Franklin Lecture

Dean Franklin, a former Dalton Director from 1980 - 1991, passed away May 2, 2007. In recognition of his scientific accomplishments and service to the University of Missouri and Dalton Cardiovascular Research Center, an endowed lectureship has been established. Plans are underway for our Inaugural Franklin Lecture. This was made possible due to the donations of family and friends of Dean Franklin.

The Franklin Lecture will enhance the scholarly environment of the University of Missouri-Columbia and Dalton Cardiovascular Research Center for faculty and students. The Lecture will be used to invite distinguished speakers of high caliber that are considered to be at the top of their field. Speakers will be selected for their expertise in the cardiovascular sciences and the technologies that drive the field forward.

Stephen F. Vatner, M.D., Chair, Department of Cell Biology & Molecular Medicine Director, Cardiovascular Research Institute, Newark NJ has accepted our invitation to be our first speaker.

If you are interested in attending, you may want to mark your calendar for Friday, September 12th, 2008 at 1:00pm to attend this first lecture. It will be held at Acuff Auditorium MA217, School of Medicine. For more information about this event please contact Laura McClaskey, mcelaskeyl@missouri.edu.

CV Day

Cardiovascular Day was held, Monday, March 17, 2008 at the Reynolds Alumni Center. The highlight of the day was the James O. Davis Distinguished Lecture in Cardiovascular Science. The guest speaker was Dr. Michael I. Kotlikoff, V.M.D, Ph.D, who is the Austin O. Hooey Dean, College of Veterinary Medicine at Cornell University.

Poster winners were:

Catharine Clark (BioMedical Sciences)
Amber Stratman (Medical Pharmacology & Physiology)
Colin Young (Medical Pharmacology & Physiology)
Madelyn Hanson (Dept of Pharmacological & Physiological Sciences, St. Louis University)

Graduate Student receives Fellowship

Congratulations to Candace Caroll, graduate student in Dr. Salman Hyder’s laboratory. She was recently awarded a pre-doctoral fellowship by the National Cancer Institute for her studies of breast cancer.

Mizzou Wire rounds up the best, brightest and biggest of 2007

Walk into a University of Missouri lab, and you might find someone trying to cure cancer. Walk around the corner, and you’ll find another researcher studying diabetes.

See more of the story by Chris Blose:

Super Mario rounds up the best, brightest and biggest of 2007

A $6 Million gift supports medical research at MU. To view the MU News Bureau story, go to:


To view more about Margaret Proctor Mulligan and the other recipients click here.
Live Cell Imaging Center

Our Live Cell Imaging Center is but one of the features in the “Year of Champions” 2008 Chancellor’s Update.

We have established a state-of-the-art microscope facility at the Dalton Cardiovascular Research Center. This facility includes two high end imaging systems for live cell and tissue imaging at cell and sub cellular levels. One of the systems consists of a Leica TCS SP5 Confocal-Multiphoton microscope built on a DMi6000 inverted platform. Multiphoton excitation allows for the visualization of living cells or tissues while reducing photobleaching and photo-toxicity.

In addition, the high focused intensity achieved by the femtosecond pulsed laser used in multiphoton microscopy and the nonlinear interaction of the light with symmetrical molecules generates second harmonics for imaging and structural analysis of molecules such as collagen in living tissues. The system is also capable of scanning at very fast rates to visualize dynamic events within living cells and tissues.

The second system is built on an Olympus IX81 inverted platform and it is integrated system that includes both laser scanning confocal microscopy and total internal reflection microscopy (TIRF).

In addition to regular imaging studies at the cellular level such as immunocytochemistry, this system is equipped with the capability for molecular imaging, e.g., single molecule fluorescent detection and fluorescence energy transfer (FRET), in live cells. It also incorporates a patch-clamp electrophysiological system so that both imaging and electrical signals can be acquired simultaneously.

The system also includes an ultra fast switching monochromator (Polychrome V) with a fully digital high precision galvanometer driven grating. It allows high speed ratio metric imaging. Both systems allow the utilization of a large variety of fluorophores. Together these powerful technologies enable investigators to undertake new research directions that tackle the molecular function of cellular proteins.

Seated in the Live Cell Imaging Center is Dr. Luis Martinez-Lemus, Assistant Professor, Department of Medical Pharmacology and Physiology and resident Dalton Investigator.

International Media Coverage

Dr. Marc Hamilton’s research on inactivity (as reported in our last issue) is now reaching global media coverage. See two of the articles below:

EarthTimes-United Kingdom
Daily News & Analysis-India

Visiting Professor

We would like to welcome Dr Philip Clifford, Professor and Associate Dean for Postdoctoral Education, Medical College of Wisconsin who is undertaking a research sabbatical (March - June) at the DCRC.

Dr Clifford has a particular interest on rapid vascular responses occurring at the onset of skeletal muscle contraction.

Grad Student Places Second

On March 8, Hanrui Zhang, graduate student in Dr. Cuihua Zhang’s lab was recognized with 2nd place for her oral paper about resveratrol in the Veterinary, Medical, and Health Sciences Category at the 25th Graduate Professional Council, “Research and Creative Activities Forum.”

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To remove your name from our mailing list, please contact us at the above email address.