
THE NEWSLETTER OF THE DAVIS HEART AND LUNG RESEARCH INSTITUTE

SPRING 2007

Feedback Wanted

We'd like to know what you think about this publication so that we can improve it. Please take a moment to answer these questions and email to Kirsten.Houck@osumc.edu or drop off your responses at the front desk in room 110 DHLRI. Thanks, DHLRI FYI Editors

1. Have you read other editions of the FYI newsletter? If not, why not?
2. Do you prefer a monthly or quarterly newsletter? Why?
3. Is there anything you'd like us to include in the future issues?
4. Is there anything that you'd like to see eliminated?
5. Any other input? We welcome your great ideas!

Give Life, Get a Buddy



There is still time to earn your Buddy the Blood Drop bobble head doll. Anyone who has donated blood at the Medical Center three times since January 1, 2006 is eligible to receive this thank you gift. Start racking up your three donations by giving blood at the next drive on **Monday, June 4** in the Ross Heart Hospital lobby from 11 am. – 5 pm. Visit www.givelife.org (sponsor code “buckeyes”) or call 293-LIFE to register. To find out if you are one donation away from receiving a Buddy or to find more information on the giveaway and upcoming blood drives visit the Health and Wellness page located under Workplace on OneSource. Donors must wait eight weeks between donations.

New Employees



Please join us in welcoming these new employees to the DHLRI. Contact Kirsten.Houck@osumc.edu to announce a new employee in the next issue.

- Jared Kemp – Student Assistant, Core Computer Services
- Sudha Prasad – Post Doctoral Researcher, PI: Rajagopalan
- Tse-Yao “Arthur” Wang – Research Associate 1, PI: Cardounel
- Taonga “Tina” Ziba – Clinical Research Assistant, PI: Gordillo
- Fuchun Yang – Post Doctoral Researcher, PI: Zweier
- Tiansheng Wang – Post Doctoral Researcher, PI: Zweier
- Babar Habib – Part-time Research Assistant, PI: Xiaoping Liu
- Eric Collard – Research Assistant, PI: Xiaoping Liu
- Pam Massulo – Post Doctoral Researcher, PI: Avalos
- Yongbin Han – Post Doctoral Researcher, PI: Villamena
- Donald Kuhn – Senior Research Associate, PI: Elton
- Pedro Vargas Pinto – Post Doctoral Researcher, PI: Zweier

Second Annual DHLRI Research Retreat

On April 25, 2007, the second annual DHLRI Research Retreat took place. The focus of this year's retreat was on the crossroads where "Basic Science and Translational Research" intersect. A day filled with related symposia concluded with the announcement of winners of the associated Abstract Competition. For a program booklet, which includes all abstracts submitted, contact Kirsten Houck: Kirsten.Houck@osumc.edu. The Research Retreat was sponsored by the DHLRI Education Committee. Abstracts were presented orally or as posters and the winners excelled in the following criteria: Scientific Content, Oral presentation, Response to Questions and Overall Presentation. The winning abstracts follow here:

Pre-doctoral graduate students

1st	Roberts, Ryan
1st	Seshadri, Sudarshan
2nd	Joshi, Trupti
joint 2nd/3rd	Chacko, Simi
joint 2nd/3rd	McAlees, Jaclyn
joint 2nd/3rd	Meenakshisundaram, Guruguhan
joint 2nd/3rd	Sharma, Amit
joint 2nd/3rd	Varian, Kenneth
3rd	Kohr, Mark

Research Scientists

1st	Capone, Jesse
1st	Baran, Christopher
2nd	Folcik, Virginia A.
2nd	Hunter, Melissa
3rd	Terentyev, Dmitry

Post-doctoral researchers

1st	Sarkar, Anasuya
1st	Khan, Mahmood
2nd	Shilo, Shani
2nd	Yue, Peibin
3rd	Batra, Sanjay
3rd	Wang, Hsiang-Ming

Research Staff

1st	Lacombe, Véronique
1st	Monreal, Gretel
2nd	Vedam, V K Kaushik
2nd	Lacombe, Véronique
3rd	Wang, Yijie
3rd	Bao, Shengying

Clinical Fellows

1st	Ezzie, Michael
1st	Luce, Wendy
2nd	Brinkman, Vincent
2nd	Dickerson, Jennifer
3rd	Torres, Carlos A

Cardiovascular Research Grid Receives \$8.5 Million

With \$8.5 million in federal support, leading researchers at three universities, including Ohio State, are creating an ambitious digital network that will allow cardiovascular researchers worldwide to easily exchange data and expertise on heart-related illnesses. The project, called the Cardiovascular Research Grid, is expected to be a boon to the large community of heart researchers who will use these digital tools to find new ways to prevent, detect and treat life-threatening cardiac ailments. To launch this effort, the National Heart, Lung and Blood Institute, part of the National Institutes of Health, has approved an \$8.5 million grant to be allocated over a four-year period that began March 1. The digital project will be based at the Institute for Computational Medicine at Johns Hopkins, in collaboration with the Department of Biomedical Informatics at Ohio State University College of Medicine and the Center for Research in Biological Systems at the University of California, San Diego. During the first year of funding, the organizers of the new grid plan will deploy the initial infrastructure and software that will enable researchers to begin sharing and analyzing information. To accomplish this, Joel Saltz, chair of the Department of Biomedical Informatics at Ohio State, and his team will develop the software infrastructure that ties together resources on the grid.

'Gene Screen' Hopes to Find the 'Why' Behind Wound Healing

“Traditionally, in wound healing, there has been no way to tell what’s going on in the wound except by visualization and what a biopsy says – whether it’s infected or cancerous. We’re advancing the depth and level of this knowledge in our investigation,” said **Dr. Gayle Gordillo**, director of the plastic surgery research lab at Ohio State’s Medical Center and principal investigator of the study, informally called the “Gene Screen.”

The study leaders have two primary goals: to be able to determine earlier which wounds won’t heal, and to identify genetic targets for potential new drugs that could stimulate wound healing. Approximately 1,000 wound tissue samples will be collected at seven U.S. centers affiliated with National Healing Corp. The results of the research could help reduce the cost of wound care, estimated at over \$8 billion annually, and help improve the quality of life and work productivity for the roughly 2% of Americans at any given time who are suffering with a difficult wound.

“This is the first time screening is being done like this in a wound clinic,” said **Dr. Chandan Sen**, executive director of Ohio State’s Comprehensive Wound Center and professor and vice chair of surgery. The researchers are taking biopsies from healing and non-healing wounds and using laser capture microdissection to study a homogeneous cell population and run a full genome screen. Laser capture technology allows scientists to zero in on the microvessels, which are expected to sprout when tissue is healing. If the microvessels are not sprouting, they can then analyze endothelial cells to see if there is a genetic basis for why the wounds do or don’t heal.

“The goal is...to see if there’s a relationship between gene expression patterns and healing outcomes,” said Sen. **Dr. Sashwati Roy**, assistant professor of surgery, is a molecular biologist whose expertise lies in sorting out the meaning of the data collected from the genes and identifying candidate genes involved in healing. “One little genetic mutation can affect a person’s response to medications. The laser capture microdissection is really precise and gives us all the material we need from a single cell. But the main problem of studying gene expression is that it generates oceans of data,” Roy said. She also noted that the genetic approach to treatment is particularly important for wounds, which, though not routinely studied as a disease process, are similar to cancer. “No one wound can be compared to another. In the future we’ll look at the gene expression profile and treat accordingly,” she said.

Quarantine Mail = Spam Mail = Junk Mail

Excerpt from the CIO Newsbrief. Story contributed by Mike Ross

Daily, OSU Medical Center receives twice the number of external messages that came through the e-mail system a year ago and the number keeps increasing. Almost 85% of those e-mails are spam mail, junk mail, viruses and e-mail attacks. To provide better service to the Medical Center, MedCenter IS has moved to a new spam filter solution. The new spam filter will:

- ◆ Provide better performance and stability to handle growing e-mail usage.
- ◆ Improve the accuracy of determining whether e-mail is malicious, or not.
- ◆ Help protect the OSUMC network from viruses and e-mail attacks.

The new site to check your quarantine is here: <http://login.postini.com/exec/login>. The site is also accessible, along with a user guide from OneSource via the home tab > common applications > quarantine e-mail site. The old quarantine system will only be available through the end of May.

To check and clean up your old quarantine, visit the following site:

<http://ms1.medctr.ohio-state.edu/user/index.php>

Kudos

Janet Doolittle, an Honor Student in Dr. Doseff's lab received the College of Biological Sciences Deans' Undergraduate Research award for winter, 2007

At the 6th Annual OSUMC Graduate and Postgraduate Research Day competition (3/29/07), student research posters were presented and judged by OSUMC faculty. Winners, who received a scientific travel award, included our own **Charles (Chad) I. Jones III** (PI: Rita Alevriadou), **Cameron Rink** (PI: Chandan Sen) and **Trupti Joshi** (PI: Susheela Tridandapani).

Dr. Chandan Sen was recently granted board membership in the Wound Healing Society.

Dr. Frederick Villamena won a competitive appointment as a Visiting Scholar in a laboratory that is world renowned in the field of spin trapping at the University of Provence in Marseille, France. He's scheduled to visit the lab during the month of July, 2007. Bon Voyage!

"More or Less Oxygen" Lecture Series

"More or less Oxygen" is a new lecture series consisting of about 10 lectures by DHLRI investigators. The series will focus on the role, mechanism and measurement of oxygen in the pathophysiology and treatment. The lectures will be on Thursdays at 5:00 pm in 623, DHLRI. The series began on Thursday, April 5. For more information, contact aditi.kulkarni@osumc.edu.

Clinical Studies Made Easier

Excerpt from the [CIO Newsbrief](#). Article by Scott Silvey

The Information Warehouse (**IW**) team (part of OIT) recently developed a software framework specifically aimed at helping researchers collect, manage and analyze data pertaining to clinical studies more efficiently. In collaboration with **Clay Marsh, MD**, the IW team has piloted the **Pulmonary/Critical Care Portal (CCP)** web-based applications. Since the initial deployment last year, the IW has produced CCP applications for eleven other studies. These applications are used to help enroll patients, collect data, manage progress through the study and review the information. All data is integrated with the IW's comprehensive clinical repository. This enables health history to be tied in during analysis. A security layer controls access, so staff can only see data in their study. Smart forms are employed to help guide staff through often complex data entry processes. These forms also work to reduce errors through pre-population of data fields and by identifying potential mistakes at the time they are entered. Double data entry is supported to further reduce the chances for error. This technology can be generalized to support clinical studies in any medical area. When a Medical Center-wide Clinical Trials Management System is selected in the future, these IW tools will be adapted to interoperate with or transition smoothly to the new system. If you would like to learn more about this technology, please contact Jyoti Kamal, PhD, IW director at jyoti.kamal@osumc.edu.

Recruiting Healthy Subjects for Clinical Study

Larissa Brophy, a GRA in the Division of Cardiothoracic Surgery; laboratory of Sampath Parthasarathy, PhD, MBA is currently recruiting HEALTHY individuals for a Phase I Clinical Study regarding modulation of atherosclerotic risk factors. If you are interested in nutrition or learning how to decrease your atherosclerotic risk factors, then this study may be right for you.

Subject Criteria:

- ✓ Men and women aged 20 to 45 years
- ✓ Must be healthy
- ✓ Must be a non-smoker
- ✓ No history of dyslipidemia, hypertension, hypotension, impaired glucose intolerance or diabetes, inflammatory or immunological disease
- ✓ Willing to follow NCEP ATP III dietary guidelines for fourteen (14) weeks
- ✓ Cannot be a vegetarian or “formally” exercise more than five (5) hours per week
- ✓ Must voluntarily abstain from any overt anti-oxidant supplementation, dietary intake, or anti-oxidant fortified (Vitamin C, sports water) drinks during the fourteen (14) weeks
- ✓ Be willing to consume a low amount of alcoholic beverages for fourteen (14) weeks*

Requirements:

- ✓ Diet adherence with randomly assigned edible oil
- ✓ Pick-up of supplemental oil during twelve (12) weeks on four occasions (two times at regularly scheduled GCRC visit)
- ✓ Screening visit with only a finger stick, plus paperwork
- ✓ Initial nutrition education and review of study criteria
- ✓ Only three study visits to GCRC for a blood draw and paperwork
- ✓ Complete four (4) food diaries for three (3) days each

To inquire or sign-up, please contact:

Larissa Brophy, MS, RD, LD (614) 247-4466 larissa.brophy@osumc.edu

*Alcohol consumption is not a requirement. This criterion is only for individuals who drink alcoholic beverages.

New Awards: Federal, State, and Foundations

PI: Sandor Gyorke
CO-PIs: Cynthia Carnes, Dmitry Terentyev
Sponsor: NHLBI, Award No.2 R01 HL074045-06
Title: Abnormal intracellular calcium release in heart failure
Amount: \$1,875,000
Start date: 05/01/2007 End date: 04/30/2012

PI: Daren Knoell
Sponsor: NHLBI, Award No.1 R01 HL086981-01A1
Title: The cytoprotective role of zinc transporters in human lung epithelia
Amount: \$1,859,035
Start date: 04/05/2007 End date:03/31/2012

PI: Christine Lawless
Sponsor: Guidant, Medtronic, St. Jude (subcontract Yale University)
Title: ICD sports registry: safety of sports for patients with implantable cardioverter defibrillators: a multi-site study
Amount: Clinical Trial
Start date: 3/22/2007 End date: 12/31/2009

PI: Nic Moldovan
Sponsor: NIH R01, (PI: Maria Grant, subcontract with University of Florida)
Title: Circulating progenitors determine angiogenic retinopathy
Amount: \$105,169
Start date: 01/01/2007 End date: 12/31/2011

PI: Sanjay Rajagopalan
Co-PI: Qinghua Sun
Sponsor: NIEHS, Award No. 12 R01 ES015146-01
Title: Air pollution and hypertension: vascular mechanisms
Amount: \$2,339,920
Start date: 04/01/2007 End date: 12/31/2011

PI: Sanjay Rajagopalan
Sponsor: Harvard University/subcontract for NIH
Title: Engineering capillary networks
Amount: \$32,731
Start date: 09/01/2006 End date: 08/31/2007

PI: Erick Villamena
Co-PI's: Jay Zweier, Christopher Hadad
Sponsor: NHLBI, Award No. 1 HL081248-01A2
Title: Novel spin traps for biological free radical detection
Amount: \$1,046,500
Start date: 04/06/2007 End date: 03/31/2011

PI: Mark Wewers
Sponsor: NHLBI, Award No. 2 T32 HL007946-06A2
Title: Molecular mechanisms of lung inflammation
Amount: \$1,244,850
Start date: 04/01/2007 End date: 03/31/2012

New Industry Support

PI: Ayesha Hasan
Sponsor: CardioMEMS
Title: CM-06-03
Amount: Clinical trial
Start date: 10/16/2006 End date: 12/31/2012

PI: Steven Kalbfleisch
Sponsor: ProRhythm, Inc.
Title: FOCUS-AF
Amount: Clinical trial
Start date: 03/26/2007 End date: 03/25/2009



Recent Publications

Rose, JL, Reeves, KC, Likhovotvorik, RI, Hoyt, DG: Base excision repair proteins are required for integrin-mediated suppression of bleomycin-induced DNA breakage in murine lung endothelial cells. *Journal of Pharmacology and Experimental Therapeutics* 321(1): 318-26, 2007.

Hypoxia induced reactive oxygen formation in skeletal muscle. *J Appl Physiol.* 2007 Feb 8;

Schwarzwald CC, Hamlin RL, Bonagura JD, Nishijima Y, Meadows C, Carnes CA. Atrial, SA nodal, and AV nodal electrophysiology in standing horses: Normal findings and electrophysiologic effects of quinidine and diltiazem. *J Vet Intern Med*, 2007 Jan-Feb;21(1):166-75.

da Cunha DNQ, Hamlin RL, Billman GE, Carnes CA. n-3 Polyunsaturated Fatty Acids Prevent Acute Atrial Electrophysiologic Remodeling. *Br J Pharmacol* 2007; 150: 281-5.

“Interaction of Discoidin Domain Receptor 1 with Collagen type 1”, G. Agarwal, Cosmin Mihai and Daniel F. Iscru *J. Mol Biol.* (2007), Volume 367, Issue 2 , 23 March 2007, Pages 443-455



Upcoming Programs and Events

May 18: Research in Progress: Nicanor Moldovan, Ph.D.; noon, DHLRI 165.

May 25: Research in Progress: Estelle Cormet-Boyaka, Ph.D.; noon, DHLRI 165.

June 20: Discovery Series: David Lefer, Ph.D.; noon, DHLRI 170.

July 25: Discovery Series: Jeffrey Duerk, Ph.D.; noon, DHLRI 170

To submit news items, for more information, or to unsubscribe, contact the editors: Kirsten.Houck@osumc.edu and Colette.Tornik@osumc.edu.
The newsletter is also available online at <http://heartlung.osu.edu>.

