

DHLRI

FYI



DOROTHY M. DAVIS
HEART & LUNG
• RESEARCH INSTITUTE •

THE NEWSLETTER OF THE DAVIS HEART AND LUNG RESEARCH INSTITUTE AT OSU

October 2005

Institute Commemorates 5th Year Anniversary

On October 13th, 2005 the Institute will reach a historic milestone; five years of benchmark research in an effort to cure patients affected with heart and lung diseases, and to prevent these diseases from developing in individuals at risk. In an effort to recognize and celebrate this event, the month of October is being showcased with several events.

The American Lung Association 3rd Annual Blow the Whistle on Asthma Walk kicks off the month long activities on October 1st at 9:00 am. Help the estimated 10 million individuals who have had an asthma attack this year, raise funds for important research and programs, reduce the soaring economic costs of asthma, and join with your neighbors, family and friends to fight the asthma epidemic. Everyone is invited and encouraged to attend this event.

In an effort to recognize the achievements over the past five years of all faculty and staff, a **picnic** is scheduled for October 14th from 11:30 am-1:30 pm in the Neuropsychiatric Facility Gymnasium. Bill Wells, nephew of Dorothy M. Davis, will commence the activities with a few words about his beloved aunt. The remaining time is dedicated to a picnic-style lunch, the chance to meet others within the Institute and to receive a small token of appreciation from DHLRI leadership. This event is by invitation only to DHLRI faculty, staff and members.

Throughout the month of October, a series of four **research symposiums** are being conducted on the new programmatic themes of the Institute. The symposiums will bring awareness to the OSU community regarding current research happening within the Institute. Everyone in the OSU community is invited to attend all symposiums. All symposiums will take place in 170 DHLRI (Auditorium). See calendar of events for specific dates and times.

On October 27th at 3:00 pm, Dr. Zweier, Director of DHLRI, will conclude activities for the month of October with a **“State of the Institute Address”**. In his address, he will highlight key research accomplishments of the past five years and discuss the future direction of the Institute. Everyone in the OSU community is invited to attend. Location is 170 DHLRI (Auditorium).

Dorothy M. Davis and the Davis Foundation

Dorothy M. Davis was vitally interested in the future of the university, medical research, and higher education, and was one of OSU's most generous supporters.



Through **The Davis Foundation** and their

generous support of the Davis Heart and Lung Research Institute, the partnership continues today. Dorothy M. Davis, her family - William H. Davis, William C. Davis, and William and Jacquelyn Wells - and the Davis Foundation, have spurred tremendous growth for the university, and have served as an inspiration to the community. In honor of the family's philanthropic generosity and support, the Heart Center's Heart & Lung Research Institute bears the Davis name. Over time, the family's commitment has enabled The Ohio State University to develop and implement renowned, landmark programs and facilities, which have garnered local and national recognition and have opened doors to new ideas that will benefit generations to come.

Flavahan Awarded 4th NIH Grant

Nick Flavahan, PhD has been awarded a new R01 grant from the NIH. The total award of \$1,308,125, which began on August 1st, 2005 and will be for 5 years, is from NIOSH - the National Institute for Occupational Safety and Health. The objective of the award is to determine the mechanisms responsible for vasospasm and vascular remodeling in occupational Raynaud's Phenomenon. This is Dr Flavahan's 4th currently active award from NIH as a Principal Investigator. In addition to his NIH funding, Dr Flavahan is also Principal Investigator on grants from the Peninsula Foundation and from the Scleroderma Research Foundation. Congratulations to Dr Flavahan and the Flavahan Laboratory for maintaining a highly successful vascular biology program!

International Meetings a Success

From September 4 - 8, OSU hosted a unique interactive consortium of three major international meetings. These meetings included EPR 2005, which served as the joint meeting of the 11th International Conference for *In Vivo* EPR Spectroscopy and Imaging and the 8th International Conference for EPR Spin Trapping. These meetings were followed by the 2nd International Wound Healing Conference which served to inaugurate the new Ohio State University Comprehensive Wound Center. Support was provided by the National Institutes of Health and OSU's College of Medicine.

Over 200 of the most prominent scientists from across the nation and around the world were in attendance at EPR 2005, with an approximate additional 100 scientists attending the Wound Healing Conference. The conference made support available to 32 young investigators who otherwise would have been unable to participate in the conference. The highlight of the conference was the talk given by Prof. Albert Overhauser of the physics department of the Purdue University in which he gave a detailed account on how he invented the phenomenon of dynamic nuclear polarization 52 years ago that has revolutionized MRI technology.

Two eminent EPR scientists were recognized with Lifetime Achievement Awards. Prof. Lawrence J. Berliner, then Professor of Chemistry at the Ohio State University and currently Professor and Chair of Department of Chemistry and Biochemistry at the University of Denver, Colorado, was honored with Lifetime Achievement Award for his 35 years of pioneering research in the field of biological magnetic resonance spectroscopy. Prof. P.T. Manoharan, Professor Emeritus of Chemistry, Department of Chemistry - Sophisticated Analytical Instruments Facility, the Indian Institute of Technology, Chennai, India was honored with Lifetime Achievement Award for his outstanding service as a mentor, scientist, and promoter of EPR spectroscopy.

Drs. Periannan Kuppusamy, Narasimham L. Parinandi, Frederick Villamena and Chandan Sen did a tremendous job organizing the meetings and bringing all of this together. The organizers had a unique vision in bringing together three synergistic conferences in one. For the first time, this allowed these groups to interact and form links for future collaborations that will enrich science and medical research across the world for years to come. This interaction and collaboration is very much in the spirit of the Institute!

Kudos

On November 14, 2005 **Dr. Nicanor Moldovan** will present the paper "Mature Macrophages Develop Vascular Lumens And Integrate Into Functional Capillaries" at the AHA Scientific Session in Dallas. This work was accepted for oral presentation in the "Basic Angiogenic Mechanisms" section.

An article coauthored by **Stephen Lee** and **Edward Eteshola** is featured on the cover of Applied Physics Letters (APL). This solicited piece includes engineering design philosophies that are novel and have been used to design nanodevices at DHLRI here at OSU, including recently developed ultrasmall paramagnetic iron oxide particles (USPIOs) for combined drug delivery to and imaging of atheromatous plaque. These novel USPIOs were designed under support of the Cardiovascular Bioengineering Enterprise of Ohio and are schematically depicted on the cover of APL in association with this article. (see the Recent Publications section of this newsletter for the citation).

Alex Rekhtman of Dr. Parinandi's lab has been accepted in to the graduate program at the Cornell University, Ithaca. Alex also has been accepted in to the University of Cincinnati College of Medicine, but has chosen to join the Cornell University.

New Members

Please welcome these new members to the Institute:

Ilya Ioschikhes, PhD; Member (Biomedical Informatics). Dr. Ioschikhes is interested in bioinformatics and computational biology aspects of the DHLRI research. Particular areas of interest include analysis of microarray data, sequence analysis of promoters specific for heart and lung tissues or those related to organism response to specific heart and lung diseases, computational approaches to mapping to tissue-specific transcription factors (TF) binding sites, molecular modeling of TF-DNA interactions, and more.

Valery Khrantsov, PhD; Investigator (Internal Medicine/Division of Pulmonary, Critical Care, and Sleep Medicine). Dr. Khrantsov's research involves ischemia/acidosis and redox status in isolated hearts, imaging/spectroscopy of pH, free radical detection methods, and oxidative stress in hypoxia.

Ronald Xu, PhD; Member (Biomedical Engineering). Dr. Xu's research interests include biomedical imaging, tissue optics, medical device design and instrumentation. Currently he is developing two imaging platforms: 1) functional imaging of tissue oxygen saturation and hemoglobin concentration by near infrared light with ultrasound/MRI guidance; 2) in vivo cellular imaging with depth resolution. Both imaging platforms may provide novel detection tools for various heart diseases.

Message from the DHLRI Education Committee

Mission: To develop and coordinate all educational activities on behalf of the Institute.

The 2005-2007 Education Committee of the Dorothy M. Davis Heart and Lung Research Institute consists of the following members: Yong Xia, Susheela Tridandapani, Sashwati Roy, Orlando Simonetti, Mark Ziolo, Glen Cooke, Narasimham Parinandi, Cynthia Carnes, and Lorri Fowler. The committee is responsible for coordinating the following: Research in Progress (RIP) Lectures, Discovery Series Lectures, the selection of annual outstanding mentor, outstanding research staff, and outstanding post-doctoral fellow award winners, special lectures, and other educational activities as needed. As a number one priority, the committee is considering modifying the format of the RIP presentations. The goals of the modification are to enhance interaction among speakers and the audience, encourage an increase in attendance, and greater participation of the audience in the discussions. In this context, all the investigators, members, staff, post-doctoral fellows, graduate students are invited to attend the RIP lectures which will disseminate novel scientific findings, nurture growth of science, and foster collaboration. In order to encourage junior level investigators

to present at RIP Lecture Series, judges will select one speaker every month as the outstanding lecturer and that individual will be presented with the “Lecture of the Month” award. In addition, the committee strongly encourages everyone to attend the Discovery Series Lectures. These lectures are given by prominent scientists who provide an opportunity to the investigators in the institute to listen to stalwarts in a given discipline, provide a ground for future contacts and collaborations, and give visibility to the institute nationwide.

Identifying a greater need for a journal club in the institute to bring clinician scientists and basic scientists together, Dr. Yong Xia has taken the responsibility to launch monthly journal club meetings under the auspices of “DHLRI Translational Journal Club”. Very soon, Dr. Xia will distribute a memorandum explaining the guidelines and specifying time and venue of the journal club meeting. Everyone is requested to attend the DHLRI Translational Journal Club meetings.

In spring of 2006, the committee is planning to host a day long research retreat inviting all investigators to participate in a research symposium. Each investigator will be given 10 minutes to explain his/her major focus of current and ongoing research. This event will disclose the current state of research being conducted in the Institute and also bring individuals together in an effort to foster collaboration.

In June 2006, the DHLRI Education Committee will also conduct an annual “Junior Investigator Research Day” for undergrad students, graduate students, and post-doctoral fellows. The junior investigators will present their research either as posters or mini lectures. The posters and presentations will be judged; outstanding investigators will be selected and presented with an award.

--Pari Parinandi
DHLRI Education Committee Chair

Request of Nominations for Discovery Series Speakers

The Dorothy M. Davis Heart and Lung Research Institute organizes monthly lectures under the “Discovery Series Lecture” program given by highly accomplished scientists with national and international repute in the areas of myocardial, cardiovascular, pulmonary and related sciences. These lectures provide an opportunity to listen to the stalwarts in a specific area and the opportunity to foster contacts for further collaboration among interested investigators.

To organize lectures for the year 2006, the DHLRI Education Committee is seeking all DHLRI investigators and members to nominate high profile scientists in their areas of interest who would be suitable to be an invited speaker. Along with the name of the speaker, we also request the person nominating the speaker to submit (1) a brief account on the speaker’s specialization and accomplishments and (2) a curriculum vita of the speaker.

Please submit information to: Narasimham Parinandi (DHLRI Education Committee Chair) and/or Lorri Sayre-Fowler (DHLRI Administrative Director) by October 31, 2005. If you have any further questions, please contact Parinandi [Narasimham.Parinandi@osumc.edu] and/or Lorri [Lorri.Sayre-Fowler@osumc.edu].



October Programs and Events

October 1: American Lung Association “Blow the Whistle on Asthma” Walk;
Easton Town Center, registration at 8:00 am, walk begins at 9:00 am.

October 3: 5th Year Anniversary Research Symposium: Ischemia & Metabolism; Jay Zweier, MD. 170 DHLRI (Auditorium), Noon.

October 6: 5th Year Anniversary Research Symposium: Regenerative Medicine; Chandan Sen, PhD. 170 DHLRI (Auditorium), Noon.

October 7: Research in Progress; TBA.*

October 12: 5th Year Anniversary Research Symposium: Myocyte Biology & Disease; Muthu Periasamy, PhD. 170 DHLRI (Auditorium), Noon.

October 14: DHLRI Faculty & Staff Anniversary Picnic; Neuropsychiatric Facility Gymnasium, 11:30 am; *by invitation only to DHLRI faculty and staff.*

October 19: Discovery Series: Joseph Loscalzo, MD, PhD; Boston University School of Medicine. 170 DHLRI (Auditorium), Noon.

October 21: Research in Progress; TBA.*

October 24: 5th Year Anniversary Research Symposium: Inflammation, Fibrosis, & Immune Function; Clay Marsh, MD. 170 DHLRI (Auditorium), 3:00 pm.

October 27: The State of the Institute Address; Jay Zweier, MD. 170 DHLRI (Auditorium), 3:00 pm.

October 28: Research in Progress; Kottil Rammohan, MD; Neurology.*

**Research in Progress presentations are held at noon on Fridays in room 165 Davis Heart & Lung.*

New Glassware Washer Available for Use

The Institute has purchased a FlaskScrubber Vantage Glassware Washer. This unit replaces the aging and not always operable washer and dryer in 308. This new piece combines both the washer and dryer in the same unit. A copy of the manual is available in 308, or you can refer to the online manual at <http://www.labconco.com/manual/glass/VantageManual.pdf>.

New Color Copier in 419

The new shared copier in 419 is up and running. The Xerox Workcentre Pro has the ability to print color or black and white copies. To apply for an access code to the copier, contact Karel Smith at karel.smith@osumc.edu.



Recent Publications

Abraham W, et al. ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult. *Circulation*. September 2005

Angelos MG, Kutala VK, Torres CA, He G, Stoner JD, Mohammad M, Periannan K. Hypoxic Reperfusion of the Ischemic Heart and Oxygen Radical Generation. *Am J Physiol Heart Circ Physiol*. 2005 Aug 26; [Epub ahead of print]

Beharka AA, Crowther JE, McCormack FX, Denning G, Lees J, Tibesar E, Schlesinger LS. Pulmonary Surfactant Protein A activates a PI3 Kinase / calcium signal transduction pathway in human macrophages: participation in the up-regulation of mannose receptor activity. *J. Immunol.* 175: 2227-2236, 2005

K. D. Bhalerao, E. Eteshola, M. Keener and Stephen Craig Lee. October 3, 2005. Functional abstraction of biological macromolecules for design of nanodevices. *Applied Physics Letters* 87: *in press*.

Crowther JE and Schlesinger LS. Defining the phagocytic pathway for Surfactant Protein A in human macrophages: binding, clathrin-dependent Uptake, and trafficking through the endolysosomal pathway (in press, *Am J Physiol.*).

Carlos L del Rio, Patrick I McConnell, Bradley D Clymer, Roger Dzwonczyk, Robert E Michler, George E Billman, Michael B Howie. Early time course of myocardial electrical impedance during acute coronary artery occlusion in pigs, dogs and man. *J Appl Physiol* (June 16, 2005, currently published online, will appear in print in October 2005).

Kang PB, Azad AK, Torrelles JB, Kaufman TM, Beharka A, Tibesar E, Schlesinger LS. The human macrophage mannose receptor directs Mycobacterium tuberculosis lipoarabinomannan-mediated phagosome biogenesis (in press, *J Exp.Med*).

McCarthy TR, Torrelles JB, MacFarlane A, Katawczik M, Kutzbach B, Clegg S, DesJardin LE, Goldberg JB, Schlesinger LS. Mycobacterium tuberculosis manB, a phosphomannomutase that increases phosphatidylinositol mannoside biosynthesis in *M. smegmatis* and mycobacterial association with Human Macrophages (in press, *Mol. Micro.*).

Sponsored Programs Awareness Week

The Ohio State University Research Foundation invites you to participate in a week of events offered to build awareness of sponsored programs administration. All of the events will take place at the Research Foundation Building, 1960 Kenny Road. To register, visit the "Training and Events" page of the Research Foundation website at <http://rf.osu.edu>.

New Faculty Open House Reception

Tuesday, October 11, 4:00 - 6:00 PM

Exclusively for faculty who have joined OSU within the last two years.

Survey Workshop in Research Administration for College and Department Research Administrators

Wednesday, October 12, 1:00 - 4:00 PM

For all OSU staff who perform research administration functions.

Open House Reception for College and Department Research Administrators

Wednesday, October 12, 4:00 - 5:00 PM

For all OSU staff who perform research administration functions.

Survey Workshop in Research Administration for Investigators

Thursday, October 13, 1:00 - 5:00 PM

Open to all OSU faculty; highly recommended for junior investigators or faculty new to the university.

Electronic Research Administration (eRA) Tools Open House

Friday, October 14, one-hour sessions between 9:00 AM and 4:00 PM

Open to all OSU faculty and staff who perform research administration functions.



Grants Office Tip of the Month: Research Support vs. Other Support (NIH)

Although “Research Support” and “Other Support” sound similar, these parts of an NIH application are very different.

- ➔ **Research Support** is included in the NIH biosketch. This information is used by reviewers in the assessment of each individual's qualifications for a specific role in the proposed project.
 - **Warning:** NIH may return your application without review if you submit more information on Research Support than is required!

Sample of Research Support:

R01 AI12345-05 Dostoyevsky (PI) 4/01/01-3/31/06
NIH/NIAID
Grime and Nourishment: Salmonella in Borscht
The study will assess the danger of food contamination in popular Russian soups.
Role: PI

- ➔ **Other Support** for key personnel is needed as part of the Just-in-Time request made after a favorable peer review.
 - Information included in **Other Support** but not **Research Support** includes percent effort, annual direct funding levels, and explanations of any overlap with the proposed research.

Sample of Other Support:

ACTIVE

2 R01 HL 00000-13 (Bronte) 3/1/1997 – 2/28/2002 30%
NIH/NIDDK \$186,529

Dithering Mice: Exploration of Delayed Response to Cheese

The major goals of this project are to explore molecular mechanisms of delayed response to cheese stimuli in mice and the role of these mechanisms in loss of appetite.

OVERLAP

There is scientific overlap between aim 2 of NIH R01 HL 00000-13 and aim 4 of the application under consideration. If both are funded, the budgets will be adjusted appropriately in conjunction with agency staff.

-- Liberally, but not completely, quoted from the 398 application kit

Please see Karla Gengler-Nowak or Elaine Wakely in the DHLRI Grants Office (110 DHLRI) with any questions about this tip.

New Awards

PI: Nick Flavahan
Title: Mechanisms of vascular dysfunction in vibration injury
Sponsor: NIOSH, (1 R01 OH008531-01)
Amount: \$1,308,125
Start Date: 8/1/05 End date: 7/31/10

PI: Garrie Haas
Title: Hemodynamically guided home self-therapy in severe heart failure patients (HOMEOSTASIS II)
Sponsor: Savacor, Inc.
Start date: 9/1/05 End date: 2/1/08

PI: John Mastronarde
Title: Leukotrine modifiers or corticosteroids trial (LOCS)
Sponsor: Children's Research Institute
Start date: 7/1/04 End date: 12/31/05

PI: Larry S. Schlesinger
Title: TB and Innate Immune Regulation of Lung Macrophages
Sponsor: NIH/NIAID (1 RO1 AI059639-01A1)
Amount: \$1,450,150
Start Date: 4/15/05 End date: 12/31/09

PI: Karen Wood
Co-PI: Clay Marsh
Title: Lung alloimmunity after bone marrow transplantation
Sponsor: NHLBI (1 K08 HL080701-01)
Amount: \$652,590
Start date: 9/5/05 End date: 8/31/10

PI: Xiaolan Zhang
Title: SELDI application in urine proteomic profiling in lupus nephritis
Sponsor: National Kidney Foundation of Ohio
Amount: \$6,500
Start date: 7/1/05 End date: 6/30/06

For more information on this newsletter, contact the editor, Chris Brakenbury, at 247-7155 or chris.brakenbury@osumc.edu. The newsletter is also available online at <http://heartlung.osu.edu>. To unsubscribe, please contact Chris via e-mail.