



Office of Research News

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Office of Research
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First Word

As we move on from superheated summer into fall, here are some very cool announcements and news items: In June, Dr. Leslie Parise, professor and chair of biochemistry & biophysics, was elected to the Public Affairs Advisory Committee of the American Society for Biochemistry and Molecular Biology (ASBMB). Leslie was one of three people elected to the committee this year.

Our McAlister Heart Institute has a new director: Nigel Mackman, PhD, professor of hematology in the department of medicine. Learn more about Nigel and his work elsewhere in this issue of OoR News.



*Terry Magnuson, Ph.D.
Vice Dean for Research*

The spring and summer months also contained a number of highly publicized news reports that showcase our considerable strength in HIV/AIDS research. All involve members of our Center for AIDS Research (CFAR).

First, Dr. Myron Cohen, the J. Herbert Bate Distinguished

Continued on page 2...

Nota Bene

N.B. Core Facilities Equipment Requests – Proposals are being requested from faculty across the campus for new equipment purchases that will support cancer research. These proposals are on behalf of the UCRF for equipment to be purchased with UCRF funds. This year two types of proposals will be accepted:

- 1) Equipment for a core facility. This should be proposed by the core director, but can be advocated by a group of users;
- 2) Equipment for a well-defined group of faculty. This would be considered shared equipment and requires a cost-sharing contribution in addition to funds from the UCRF. If you haven't seen the RFA, contact me at dede_corvinus@med.unc.edu. **Please submit your request to me electronically by Friday August 26, 2011.**

N.B. Bridge Funds – Another round of bridge fund applications will be due by late September. This applies to faculty with R01 grants or who are part of a Program Project and who need “bridge” funding to help fill the financial gap that often occurs between the end of a grant’s funding period and its renewal. **For details, contact me via email.** 

Cheers,
Dede Corvinus

Serving the UNC School of Medicine research community

Terry Magnuson, PhD
Vice Dean for Research

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Director, Office of Research

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Carolyn Marlow
Director of Sponsored Programs

Faculty at Large

Miriam Braunstein, PhD
Microbiology & Immunology

Mohanish Deshmukh, PhD
Cell & Developmental Biology

Henrik Dohlman, PhD
Biochemistry & Biophysics

Janet Rubin, MD
Department of Medicine

Anna Spagnoli, MD
Department of Pediatrics

First Word (continued from page 1)

Professor of medicine, microbiology & immunology, and director of our Center for Infectious Diseases (CID), made national and international news as leader of a landmark NIH prevention study—the first randomized clinical trial to definitively indicate that an HIV-infected individual can reduce sexual transmission of HIV to an uninfected partner by beginning antiretroviral therapy sooner.

Then in July it was announced that Dr. David Margolis, professor of medicine, microbiology & immunology, will lead a \$32 million 5-year NIH grant aimed at purging the dormant reservoir of HIV from the immune systems of people

taking antiretroviral therapy. This multi-center “collaboratory” grant will fund a team of 20 pioneering scientists in HIV latency research. And it’s the first major funding initiative to focus on HIV eradication, which is considered key to developing a cure for AIDS. NC TRaCS Institute here at UNC will administer the grant.

CFAR and CID member Dr. J. Victor Garcia-Martinez, professor of medicine, is a pioneer in humanized mouse model development. Also in July, he was awarded a \$3 million federal grant to develop and test a new generation of treatments aimed at preventing sexual transmission of HIV to uninfected individuals. This

remains the most common cause of HIV infection worldwide. Preclinical experiments with candidate drugs will be conducted in humanized BLT mice. These mice have a fully functioning human immune system and can be infected with HIV in the same manner as humans. Victor’s lab pioneered the development of this model.

Finally, OoR News will be published three times a year. Look for it in January, April and September. 📖

Best wishes,
Terry

Core Facilities Report

Our column for this issue highlights two of our 18 Animal Models Core Facilities: the Mouse Cardiovascular (CV) Models Core directed by Mauricio Rojas, MD, MPH, and the Animal Metabolism Phenotyping (AMP) Core, Daniel Pomp, PhD, director. Mauricio and Daniel provided the following summaries of their respective cores.

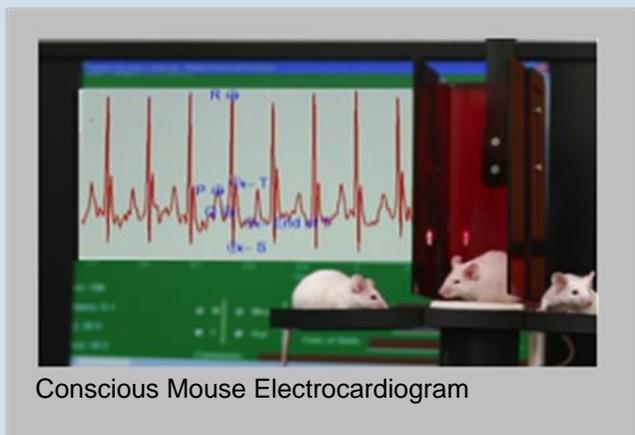
The Mouse Cardiovascular Core

(<http://www.med.unc.edu/mhi/mcvcorelab>)

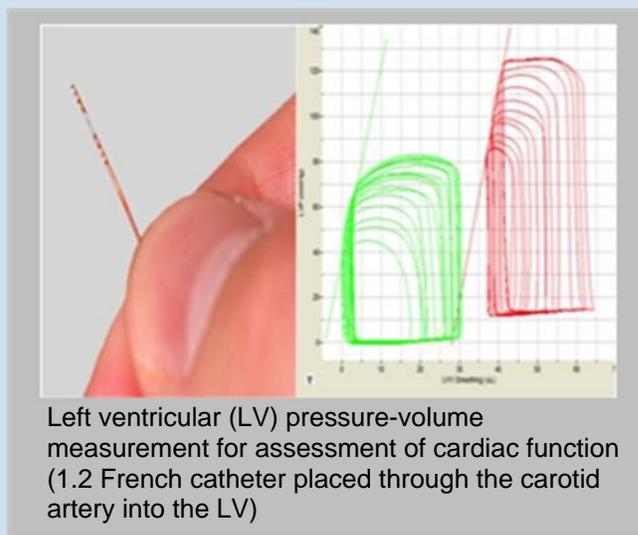
This offers a variety of procedures that are used to evaluate environmental and genetic factors that affect cardiac function, blood pressure, thrombosis and

angiogenesis in wild type and genetically modified mice. A skilled surgeon performs the surgeries.

These include ligation of the left anterior descending coronary artery to produce cardiac ischemia, ligation and release of the same artery to produce cardiac ischemia-reperfusion, aortic banding to produce pressure overload, inferior vena cava ligation to induce thrombosis, and femoral artery ligation to induce angiogenesis.



Conscious Mouse Electrocardiogram



Left ventricular (LV) pressure-volume measurement for assessment of cardiac function (1.2 French catheter placed through the carotid artery into the LV)

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Core Facilities Report (Continued from page 2)

In addition, the core can measure electrical activity of the heart by EKG, cardiac function by echocardiography, cardiac pressure volume using a catheter introduced into the left ventricle, invasive and non-invasive blood pressure monitoring, blood flow measurement by color laser Doppler, oxygen saturation, and leukocyte adhesion, rolling and extravasation and vascular leakage by intravital microscopy. The core provides a unique service to UNC cardiovascular research. Schedule a consultation with Mauricio Rojas: (marojas@med.unc.edu). 

The Animal Metabolism Phenotyping (AMP) Core

(http://www.sph.unc.edu/cnrc/core_e.html)

The UNC Nutrition and Obesity Research Center created the Animal Metabolism Phenotyping (AMP) Core Facility to provide state-of-the-art, full-service energy balance phenotyping services for mice to a broad array of NIH-funded biomedical researchers from across the UNC campus, including the Schools of Medicine, Public Health, Arts and Sciences and Pharmacy.



Analysis of voluntary exercise with home cage and running wheel compartments. This device collects running distance, time spent running and running speed in requested intervals.

The AMP core offers high quality and high throughput measurement of energy intake, food preference, metabolic rate, home cage activity, voluntary exercise, glucose metabolism, gut microbiome characterization, and serial measurements of body fat, lean mass and bone. AMP scientists can help investigators with their study design, quality control and data

interpretation, and provide support for grant applications and publications. All AMP equipment is fully mirrored in both the Genetic Medicine Building and McGavran Greenberg Hall.

(dpomp@unc.edu).

Scheduling AMP services: Kunjie Hua

(hua@unc.edu); Consultation: Daniel Pomp

(dpomp@unc.edu).



Evaluating and interpreting energy expenditure using new, state of the art indirect calorimetry from TSE Systems. The system measures O₂ consumption & CO₂ production, respiratory exchange rate, and energy expenditure in the home cage environment.

Here's a complete listing of our Animal Models Cores:

Animal Clinical Chemistry & Gene Expression, Animal Histopathology, Animal Models Core, Animal Studies Facility, BAC Engineering Core Facility, CGBID Gnotobiotics Core, Histology Research Core Facility, In Situ Hybridization Core Facility, Mouse Cardiovascular Models Core, Mouse Cost Recovery Center, Mutant Mouse Regional Resource Center, NDRC Mouse Behavioral Phenotyping Core, NORC Animal Metabolism Phenotyping Core, Oligonucleotide Synthesis, Xenopus Aquatic facility, Zebrafish Acquaculture Core Facility.

For details on each and more, visit our new website: <http://www.med.unc.edu/corefacilities> 

-Mike Topal

Mackman Tapped to Direct McAllister Heart Institute



Nigel Mackman, PhD.

The School of Medicine announced the appointment in June of Nigel Mackman, PhD, as Director of the McAllister Heart Institute (MHI). Dr. Mackman, the John Parker Professor of Hematology in the Department of Medicine, has served as Associate Director of McAllister Heart Institute since 2009. Dr. Mackman came to UNC in 2007 from The Scripps Research Institute in San Diego, CA. His research in blood coagulation has been recognized by the American Heart Association with multiple awards including an Established Investigator Award and a Special Recognition Award in Thrombosis in 2004. Currently he is the Vice Chair of the ATVB Council of the American Heart Association. Dr. Mackman's research explores gene expression patterns in human monocytes, focusing on tissue factor (TF), which is the primary cellular initiator of blood coagulation, and the proinflammatory cytokine $\text{TNF}\alpha$. The SOM is confident that Dr. Mackman will provide the vision and leadership that will establish the MHI as a leading cardiovascular center with excellence in research. The MHI will continue to strengthen and develop its cross-disciplinary collaborations and interactions with other departments and centers on campus. [📄](#)