

## The CVRC Acquires a Poster Printer

The CVRC is happy to announce the HP designjet 500 poster printer is set up and ready for your poster print jobs. Please contact Sarah Ponzi @ 2-6385 or sep8x@virginia.edu to schedule your appointment for her to print your poster. ■

## Mark Your Calendars...

2006 Robert M. Berne Lecture  
Thursday, 26 October • Jordan Hall Auditorium

This year's speaker, David Clapham, MD, PhD, is the Aldo R. Castañeda Professor of Cardiovascular Research, Investigator, Howard Hughes Medical Institute, Professor of Neurobiology, Harvard Medical School, he will speak on TRP ion Channels. □



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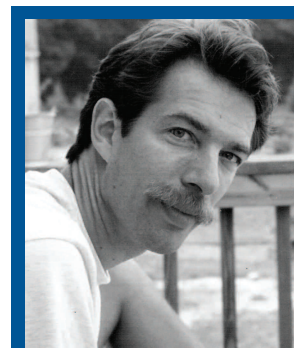
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## In Remembrance of Walter Rogers, Jr. (1952 – 2006)

On March 30, 2006, Dr. Walter Rogers, Jr. passed away from complications of leukemia.

The suddenness of this devastating loss of our



Dr. Walter Rogers, Jr.

friend and colleague, who was working alongside us very recently, is difficult to comprehend. Many of you will remember when he first interviewed and then was recruited to UVA. Our thoughts and sympathies go

out to Walt's wife and family. Walt was a pillar

of our MRI program here.

Walter was born and grew up in Erie, Pennsylvania. He attended Gannon University in Erie, where he majored in Biology. After graduation in 1976, he went on to receive an M.S. in Radiation Physics from Johns Hopkins University and subsequently was awarded a Ph.D. in Cardiovascular Biology from Duquesne University. From 1993 to 2002, he advanced from the position of Research Scientist to Associate Professor and Director of Cardiovascular MRI at Allegheny-Singer Research Institute/Allegheny General Hospital in Pittsburgh. During this period, he first met Chris Kramer, now UVA's Director of Cardiac

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## Ley and Co-Investigators' Bioengineering Research Partnership (BRP) Renewed for Five Years!

Dr. Klaus Ley along with project leaders, Drs. Michael Lawrence, William Guilford, John Hossack and Alexander Klibanov and in cooperation with Dr. Richard Cummings at Emory University have just received an NIH Notice of Award of their renewal application for a five-year Bioengineering Research partnership (BRP) titled, "Biomechanics of Leukocytes and Molecular Imaging Agents" for a total of \$5.5 million.

Drs. Ley, Lawrence and Guilford, have been part of this BRP from its inception in 1999. In 2001, the focus of the BRP was expanded to include more molecular imaging work while the basic biomechanics work continued. In this renewal, selectin ligands such as glycosulfopeptides and controls are provided by Dr. Rick Cummings' lab at Emory University.

The major goals of the project are to develop ultrasound contrast agents for targeted imaging of atherosclerotic plaques and to provide innovative and improved diagnosis and prevention of the ischemic diseases. Part of the innovation is to use a microbubble design with unique molecules that target them to inflamed tissue expressing receptors called selectins. ■



Drs. John Hossack, William Guilford,  
Michael Lawrence, Klaus Ley  
and Alexander Klibanov

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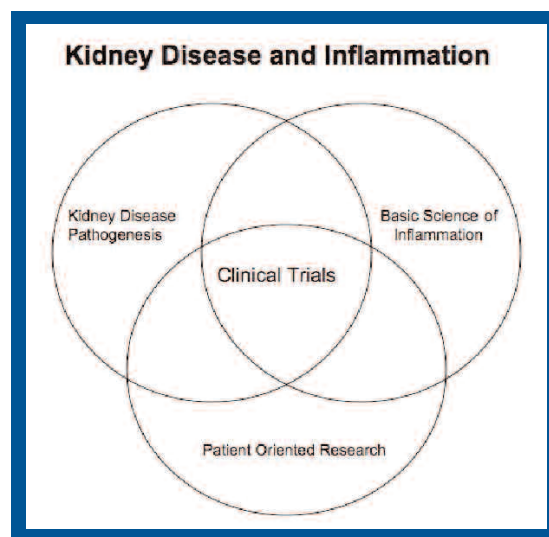
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## Training the Next Generation of Investigators in Kidney Disease Research

Kidney disease is a major health problem that continues to grow at a rapid rate that necessitates training of investigators in kidney-related translational research. To begin to meet this need at



the University of Virginia, Dr. Mark D. Okusa, John C. Buchanan Distinguished Professor of Internal Medicine, on behalf of the Nephrology Division was recently awarded from the National Institutes of Health a new 5 year T32-training grant (DK072922) entitled Kidney Disease and Inflammation. This award represents an interdisciplinary research program that includes basic translational research and patient oriented clinical

research programs. Faculty mentors are from several Department and Centers including: Medicine, Pediatrics, Pharmacology, Biochemistry and Molecular Genetics, Biomedical Engineering, Molecular Physiology and Biophysics, the Robert M. Berne Cardiovascular Research Center, Center for Cell Signaling, Carter Immunology Center and Specialized Center for SLE. The program provides training and didactic instruction in fundamental and state of the art disciplines, including molecular, cellular, transgenic technologies, immunology, functional genomics and novel imaging technologies. The patient-oriented clinical research program provides training in clinical investigation, epidemiology, and biostatistics.

It is the goal of the program that its graduates contribute to a new generation of academic nephrologists and renal investigators with training in translational biomedical research to address the growing problem of kidney disease. The Executive Committee working with Dr. Okusa includes: Drs Klaus Ley, James Garrison, Gary Owens, ShuMan Fu, Eugene Barrett and Elizabeth Laws (Administrative Assistant). ■

## The CVRC Welcomes New Staff Members and New Faculty Members

When you visit the Administration offices of the Robert M. Berne Cardiovascular Research Center you will be greeted by a couple of new administrative assistants. Angela "Angie" McRay, has joined our staff as the front desk administrative assistant and Becky Ellwood has taken the position of Klaus Ley's administrative assistant. We are so excited to have both of these smiling faces join our team so stop by and introduce yourselves and welcome them!

Also, Drs. Zhen Liu and Edward Perez-Reyes, have joined the CVRC Faculty. Dr. Liu is an Assistant Professor in the Department of Internal Medicine, Division of Endocrinology. His research focuses on insulin resistance and cardiovascular complications of diabetes. Dr. Perez-Reyes is an Associate Professor in Pharmacology. His research focuses on molecular biology of voltage-gated calcium channels and the cloning of T-type calcium channels. ■

## 2006 Robert M. Berne Cardiovascular Research Center Faculty Retreat Held at Wintergreen

The Annual CVRC Faculty Retreat was held June 2 - 3, 2006 at the Wintergreen Resort. In order to foster broader interaction with the research community within the University Health System this year's retreat was again held in conjunction with the Beirne B. Carter Immunology Center and the Division of Infectious Diseases, Department of Medicine.

The CVRC faculty arrived Friday afternoon for a casual lunch and then adjourned for scientific presentations by Rich Price, "Bioengineering approaches to understanding and stimulating angiogenesis" and Mark Okusa, "The Immune Response to Kidney Ischemia-Reperfusion" and then held their annual Business Meeting. The faculty assessed the Center's current status and shared their ideas about the Center's future direction and development. This discussion was followed up by a joint reception and dinner to welcome the entire faculty, followed by a joint science session. Dr. Kevin Lynch, from the CVRC faculty, spoke on "Modulators of Sphingosine 1-phosphate Signaling as Therapeutics" and Dr. David Brautigan, Director of the Cell Signaling Center, spoke on "Charting an Intracellular pathway for Cytokine Induced Apoptosis".

The second day of the retreat started with a joint breakfast where all of the faculty members could mingle and exchange information. Each group then split into their respective sessions. The CVRC faculty went straight to scientific presentations by Alexander Klivanov speaking on "Gas-filled microbubbles: Ultrasound con-

trast agents for targeted molecular imaging and drug delivery" and Jim Garrison spoke on his science, "Inhibiting Inflammatory Signals: Regulation of PI3-kinase and PRex-1 by Gβγ and Phosphorylation". Brett Blackman rounded out the faculty presentations with "Hemodynamic Regulation of Endothelial Cell Phenotype in In Vitro Models of Atherosclerosis and Vascular Remodeling"

For the first time this year, senior postdoctoral fellows and research associates were invited to give a short presentation of their research and receive feedback from the faculty. Those presenting were: Wayne Orr – Schwartz Lab, "Matrix-specific PAK activation regulates vascular permeability in early atherosclerosis"; Rebecca Deaton- Owens Lab, "Molecular mechanisms controlling changes in myocardium and KLF4 expression in phenotypically modulated smooth muscle cells"; Ashish Sharma – Laubach Lab, "Resident alveolar macrophage and epithelial cell activation in pulmonary ischemia-reperfusion injury"; Alexis Broisat – Glover Lab, "Persistent Reduction in Myocardial Infarct Size after a Brief I.V. Infusion of the Adenosine A2A Receptor Agonist ATL146e"; Tracy Deem – Ley Lab, "Dendritic cells preferentially accumulate in atherosclerosis"; Elena Galkina – Ley Lab, "B lymphocytes and atherosclerosis"; and Alexandra Kadl – Leitinger Lab, "Oxidized phospholipids induce a unique macrophage phenotype". ■

## Did you know..... (Something to Think about from The National Institutes of Health)

### Thirty Years Ago

- In the 1960's it was no uncommon for Americans to die of heart attacks in their 50's or 60's.

Had this rate of coronary heart death continued unabated, today more than 1.6 million lives each year would be lost. Fortunately, the toll is much less, fewer than 500,000 deaths from heart disease. In addition, the death has declined by 70%.

### Today

- The gain in longevity has been remarkable! Between 1970 and 2000, the life expectancy of the average American increased by 6 years, and nearly 4 years of this gain is due to reductions in cardiovascular disease deaths. We can attribute this remarkable improvement, in large part, to NIH research

- For example, The Framingham Heart Study was the first to define the concept of risk factors for heart disease, which include high blood pressure, elevated serum cholesterol, smoking, obesity, diabetes, and physical inactivity.

- Beyond reducing risk factors for heart disease, advanced technologies are dramatically improving diagnosis and treatment. Implantable cardiac defibrillators significantly reduce sudden cardiac death. If detected early, tPA can be administered to patients to stop a heart attack before the heart muscle is severely damaged.

Following angioplasty to widen a blocked section of an artery of the heart, the artery often re-

clogs even with the insertion of a small mesh stent designed to hold the artery open. NIH scientists developed a stent imbedded with the cancer drug Taxol, which is slowly released the inhibits artery-closing scar formation. This revolutionary drug-device combination dramatically reduced artery re-closing rates to 3 to 6 % and is expected to substantially reduce the 350,000 open-heart bypass surgeries-previously the only alternative for some patients.

### Tomorrow

The NIH is poised to make major discoveries in the prediction of heart disease, to personalize individual treatments, and to use this information to preempt disease.

- Predicting heart disease. The new Framingham Genetic Research Study will identify in 9000 individuals genetic variations of predispose to the development of high blood pressure, high cholesterol, diabetes, obesity and heart disease. This knowledge will lead to early detection and improved treatments tailored to the individual's risk profile.

- Personalized treatments. In 2007, NIH will begin the Cardiovascular Cell Therapy Clinical Research Network to further investigate the feasibility of this personalized cell therapy approach. Research topics will include determining exactly how cell therapy improves heart function and developing screening methods to monitor cell therapy treatment in individual patients. ■

## Congratulations to CVRC Faculty Members and their Laboratories!

Brian Wamhoff, Ph.D., had his new RO1 entitled "Calcium-dependent regulation of smooth muscle cell phenotype" officially started July 1, 2006. Also on July 1, he accepted a position in Internal Medicine, Cardiovascular Division as Assistant Professor. With this move came new lab space in MR4, 6th floor, Room 6022 - down the hall from Drs. Duling and Leitinger. Brian welcomes everyone in the RMBCVRC to come visit!

Kenneth S.K. Tung, M.D., successfully renewed his NIH RO1 grant from NIAID, entitled "Zone pellucida: immunopathologic studies" (priority score 3.4%) at \$250,000 direct cost per year (July 1, 06 to June 30, 2011). This NIH grant supports the long term ongoing research on the regulatory T cells as a critical mechanism in the control against autoimmune disease development and disease relapse.

Richard J. Price, Ph.D., received a new NIH R01 grant entitled "Arteriogenesis by Ultrasonic Microbubble Destruction". The grant is for \$1.75 million dollars over 5 years. The goal of the project is to develop contrast ultrasound based drug and gene delivery methods for stimulating therapeutic neovascularization and blood flow restoration to tissues and organs affected by arterial occlusion.

Kevin S. Lee, Ph.D., was just awarded a new NIH grant entitled, "Neurological Impact of Cardiopulmonary Bypass Surgery" (PI: Kevin Lee). This project is a collaborative effort involving laboratories in the Department of Neuroscience (Lee Lab) and the Department of Surgery (Thoracic and Cardiovascular Research Laboratory, Irv Kron et al.). The studies use an experimental model of CPB to examine mechanisms of, and treatments for cognitive decline after CPB.

Robert M. Carey, M.D., has begun a two-year term as Chair of the Council Operations Committee of the American Heart Association on July 1, 2006. And is serving the second year of

a two-year term as Chair of the Council for High Blood Pressure Research of the American Heart Association.

Helmy M. Siragy, M.D., FACP, FAHA, was part of the task force that wrote and had published the "Medical Guidelines for Clinical Practice for the Diagnosis and Treatment of Hypertension" for The American College of Endocrinology and the American Association of Clinical Endocrinologists. This guideline aspires to implement a comprehensive strategy for healthcare professionals to provide better treatment to patients with cardiovascular risk factors, including hypertension, while measuring outcomes and impact. He has also been appointed to the editorial board of two Journals, namely: Current Hypertension Reports and Journal of the CardioMetabolic Syndrome.

Benjamin M. Gaston, M.D., has been awarded the Ivy Foundation Distinguished Professorship in Pediatrics. The Ivy Foundation is an independent, endowed foundation that assists UVA biomedical research efforts.

Stuart S. Berr, Ph.D., along with Drs. French, Kundu, Roy, and Williams won for their entry "Myocardial Infarction in Mice Followed by microPET and MRI" the 2006 New Point of View, Siemens Preclinical Image of the Year Competition, microPET® Image of the Year category receiving an award of \$20,000 and a Siemens New Point of View trophy.

Joel M. Linden, Ph.D., has been named Vice Chair of Research in the Department of Internal Medicine effective July 1, 2006.

Coleen McNamara, M.D., has been named Vice Chair for Faculty Development in the Department of Internal Medicine effective July 1, 2006.

Jerry L. Nadler, M.D., has received one of 6 Pfizer Visiting Professorships this year. He will be visiting the University of

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MR. This was the beginning of a long and extremely productive collaboration. The two researchers published together over 30 peer-reviewed original research articles in high impact medical journals. Most involved magnetic resonance evaluations of cardiac performance investigated in a variety of functional conditions.

In January 2002, Walter moved to the University of Virginia as Associate Professor of Radiology and member of the Robert M. Berne Cardiovascular Research Center. He was recruited to our department by Dr. Hillman to serve as the Vice Chair for Research. More recently, he was an active leader as the Department's Chair of the Research Committee. A member of numerous professional societies, Walt was a Founding Member of the Society for Cardiovascular Magnetic Resonance and held the position of Vice Chair, Interventional MRI Study Group, of the International Society of Magnetic Resonance in Medicine. In addition, his editorial and peer review skills were highly valued by numerous journals including, *Circulation*, *Journal of*

*Cardiovascular Magnetic Resonance* (where he served on the Editorial Board), *Journal of the American College of Cardiology*, etc., and a variety of grant awarding organizations. His history of receiving research grant funding was exemplary and he held multiple active awards at UVa. He was the recipient of five U.S. patents and two European patents.

Dr. Michael Dake, chair of the Department of Radiology at UVa, had the following words: "As tough as it is to come to grips with his passing, we remember the essential Walt...a generous and considerate individual, who was always spontaneously willing to lend a helping hand; a truly collaborative colleague, who happily applauded the success of fellow faculty with genuine admiration; a man whose easy enthusiasm for a variety of subjects and positive attitude provided unflinching support for co-workers that helped drive their projects to success; a talented and determined researcher who we will always respect as someone who gave more to us than he received. His presence in our lives will be deeply missed."

*Klaus Ley*

## Cardiovascular Research Training Grant: Another Year Stronger!

The Basic Cardiovascular Research Training Grant has had an amazing year, and this year marks our 30th consecutive year running! Along with a deep applicant pool of very qualified students and postdoctoral fellows, we also submitted our 5 year grant renewal. We currently have 21 very qualified pre and postdoctoral fellows on our training grant.

### Postdoctoral Fellows

Rebecca Deaton	Owens Lab
Aaron Franke	Somlyo Lab
Patrick Helm	Epstein Lab
Feilim Mac Gabhann	Skalak/Peirce-Cottler Lab
Anthony Wayne Orr	Schwartz Lab

### Predocctoral Fellows

Amanda Doran	McNamara Lab
Abigail Flower	Moorman Lab
Gradley Gelfand	Blackman Lab
Cornelia Hahn	Schwartz Lab
Reid Harris	French Lab
Melissa Hatley	Hedrick Lab
Melissa Lansey	Ley Lab
Courtney Lappas	Linden Lab
Kimberly Mitchell	Szabo Lab
Ronald Nepl, Jr	Somlyo Lab
John Pickard	Ley Lab
Michael Simmers	Blackman Lab
Alyssa Taylor	Skalak Lab
Bryan Thorne	Peirce-Cottler Lab
Kori Wallace	Linden Lab
Hanna Woldeyesus	Epstein/Meyer Lab

## A Fond Farewell!

Linda Mikell, the business manager of the Robert M. Berne Cardiovascular Research Center, joined the Beirne Carter Immunology Center. Linda became business manager and head of the RMB CVRC office in April of 2005. She built a strong team of administrators that is serving the cardiovascular research community extremely well. As Director of the

Center, I would like to thank Linda for her exemplary and inspiring service to all of us. Her leadership and upbeat spirit will be missed, but she has promised to be available to give advice as needed. Please join me in wishing Linda all the best in her new position.

## Congratulations to CVRC Faculty Members cont.

Florida in September. His NIH PPG on Diabetes and Atherosclerosis was renewed.

Christopher M. Kramer, M.D. and Dan Theodorescu, M.D., Ph.D., have been elected to membership into the American Society of Clinical Investigation.

Alaa Awad, M.D., was the recipient of a First Place Junior Faculty Award at the Northwestern University Feinberg School of Medicine's Cardiovascular Young Investigators' Forum, held in Chicago, IL in the late fall of 2005. This is a yearly competition in which 20 junior faculty are selected from applicants throughout the United States to present their research. His talk was entitled, "Adenosine 2A Receptor (A2AR) Agonists Protect Kidneys in a Model of Diabetic Nephropathy".

Shetal H. Padia, Dr. Carey's post-doctoral research fellow, has received the coveted American Heart Association Fellow-to-Faculty Transition Award for 5 years at approximately \$ 600,000 beginning July 1, 2006.

Matt Alexander, received a Predoctoral Award and Tadashi Yoshida, Ph.D. received a Scientist Development Grant from the American Heart Association. Both are in Gary Owens, Ph.D. laboratory.

Tracy Deem, Ph.D., a Research Associate in Klaus Ley's laboratory, received an American Heart Association grant.

Jeremy P. Mauldin, a graduate student in Lynn Hedrick's laboratory, was awarded a 2-year American Heart Association Predoctoral Fellowship entitled "ABCG1 and Foam Cell Formation in Type 2 Diabetes".

Ronald P. Taylor, Ph.D., was honored as an invited speaker at the UK CLL Forum in London on May 4, 2006. His presentation was titled, "Rituximab Mediates Shaving of CD20 in Chronic Lymphocytic Leukemia: The Cutting Edge of Antigenic Modulation". ■