



## Summer 2013 Research Opportunity



- Conduct research during summer of 2013 (June 1-August 1) under direction of a Vanderbilt scientist (stipend provided)
- Laboratory-based, clinical or translational research in kidney disease or hypertension (no research experience required)
- Career advice, clinical and research seminars and discussions

**Complete Application Deadline is  
February 17th, 2013 (limited to 20 students)**

**For more information and registration details visit:**

**<https://www.mc.vanderbilt.edu/mkpdc>**

Nancy Lightsey, MSRTP-NH Program Administrator  
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## Division of Nephrology and Hypertension



- The Division of Nephrology and Hypertension at Vanderbilt conducts a broad range of NIH funded, cutting edge basic science and human and patient-oriented research
- Ranked in the top Nephrology Divisions (2011 US News and World Report) and in an elite group of top NIH funded Nephrology Divisions
- Our goal is to advance and acquire new knowledge that will advance our understanding of kidney biology and the pathogenesis and treatment of renal disease and hypertension
- Over 50 clinical and research faculty, 14 NIH funded laboratories with over 25,000 sq. ft. of office and research space, and more than \$13 million in annual external research funding
- Human and patient-oriented research conducted at the Clinical Research and Nephrology Clinical Trials Centers
- Close ties between the Division of Nephrology and world renowned research in the Division of Clinical Pharmacology and the Centers for Matrix Biology, Developmental Biology and Stem Cell Biology



## Organization of the Course

### • Dates

You will spend a total of 8-10 weeks over the summer of 2013. Core curriculum is June 4th-July 30th but, you must be able to start on June 1st and to complete the 8-week core curriculum in order to be eligible. You are also expected to present your research at the National Symposium at the end of the summer (July 31<sup>st</sup> – August 1<sup>st</sup>).

### • Orientation

Will be on June 1<sup>st</sup>, 2013. Students must be able to arrive prior to this date.

### • Lunchtime meetings (June 4<sup>th</sup>-July 30<sup>th</sup>)

Monday: Lecture (Clinical topic)

Tuesday: Work in Progress - informal “chalk board” presentations by 2-3 students and round table discussions. Preparation of posters for the final symposium at the end of the summer.

Wednesday: Round table discussion with 2-4 different preceptors each week to discuss career paths and opportunities in academic medicine. This class will be combined with the Vanderbilt Summer Training Program in Diabetes and Endocrinology, and will include academic physician scientists and physician educators at different stages of their career development from across the campus.

Thursday: Diabetes seminar or free day

Friday: Lecture (Basic science related to the clinical topic)

### • Clinical rotations (June 4<sup>th</sup>-July 30<sup>th</sup>)

Students will have clinical exposure by attending renal clinics or wards at Vanderbilt Medical Center for one morning or afternoon each week

### • Summer Research Symposium at Vanderbilt (July 31<sup>st</sup> & August 1<sup>st</sup>)

Attend and present research poster at the National Summer Research Symposium that is being jointly organized with the Diabetes Center at Vanderbilt.



## Preceptors

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### **Kelly Birdwell, M.D., M.S.C.I., Assistant Professor in Nephrology**

Dr. Birdwell's research interests focus on metabolic changes and cardiovascular complications in kidney transplant recipients, and the impact of immunosuppression pharmacogenomics on these risks.

### **Bogdan Borza, Ph.D., Assistant Professor in Nephrology**

Dr. Borza studies the pathogenic mechanisms of antibody-mediated glomerulonephritis and hereditary glomerulopathies affecting the glomerular basement membrane.

### **Rich Breyer, Ph.D., Professor in Nephrology**

Dr. Breyer's lab studies eicosanoid signaling in the kidney and vasculature.

### **Nancy J. Brown, M.D., Professor and Chair of Medicine**

Dr. Brown's research focuses on the mechanisms of end organ damage in hypertension and the pathophysiology of cardiovascular disease in renal failure.

### **Mark de Caestecker, M.D., Ph.D., Associate Professor in Nephrology**

Dr. de Caestecker is Director of the Medical Student Research Training Program (Basic Science Research). His lab studies renal development and renal regenerative therapies.

### **Kerri Cavanaugh, M.D., M.H.S., Assistant Professor in Nephrology**

Dr. Cavanaugh is Co-Director of the Medical Student Research Training Program (Clinical Research). Her research interests focus on the impact of psychosocial and behavioral factors in kidney disease care.

### **Peter Clark, M.D., Associate Professor of Urologic Surgery**

Dr. Clark is Co-Director of the Vanderbilt Center for Benign Urologic Disease and Residency Program Director in Urology. His research focuses on MAPK and canonical Wnt signaling in renal epithelial neoplasms.

### **Douglass B. Clayton, MD, Assistant Professor of Pediatric Urology**

Dr. Clayton focuses his research on the role of ischemia and reperfusion injury in bladder diseases.

### **Agnes Fogo, M.D., Professor and Director, Renal Pathology**

Dr. Fogo an expert on human and experimental renal pathology, with many years of experience studying the effects of chronic renal injury models in rodents.



## Preceptors

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### **Al George, M.D., Professor and Chief of Genetic Medicine**

Dr. George studies the molecular genetics of ion transporters.

### **Leslie Gewin, M.D., Instructor in Nephrology**

Dr. Gewin's research investigates the role of growth factors in renal injury and fibrosis.

### **Volker H. Haase, M.D., Associate Professor in Nephrology**

Dr. Haase studies the molecular machinery that senses cellular oxygen levels and its role in renal physiology and pathophysiology.

### **Ray Harris, M.D., Professor and Chief of Nephrology**

Dr. Harris is Director of the O'Brien Kidney Disease Center. His research interests focus on the role of growth factors and eicosanoids in renal physiology and pathophysiology.

### **David Harrison, Professor and Chief of Clinical Pharmacology**

Dr. Harrison is director of the Vanderbilt Vascular Biology Center. His laboratory studies the role of inflammation and immunity in hypertension.

### **Adriana Hung, M.D., M.P.H., Assistant Professor in Nephrology**

Dr. Hung studies the genetics of renal disease.

### **Alp Ikizler, M.D., Professor in Nephrology**

Dr. Ikizler's research focuses on the translational/metabolism physiology in kidney disease.

### **Deborah P. Jones, M.D., Professor of Pediatric Nephrology**

Dr. Jones is the fellowship training program director in pediatric nephrology. Her research interests include: the acute and chronic effects of cancer therapy on the kidney, factors which predict poor outcome in children with glomerular disease and cardiovascular alterations among children with chronic kidney disease and hypertension.

### **Valentina Kon, M.D., Professor in Pediatric Nephrology**

Dr. Kon is investigating the mechanisms underlying CKD-associated dysfunctions of lipid handling and inflammatory functions in atherosclerotic heart disease.

### **Matt Luther, M.D., M.S.C.I., Assistant Professor in Clinical Pharmacology**

Dr. Luther studies the effects of the renin/angiotensin/aldosterone system on glucose metabolism and vascular function, utilizing clinical studies and model systems.



# Preceptors

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## **John Oates, M.D., Professor in Clinical Pharmacology**

Dr. Oates' laboratory studies the role of eicosanoids in vascular disease and therapy.

## **Ambra Pozzi, Ph.D., Professor in Nephrology**

Dr. Pozzi is the Associate Director of the O'Brien Kidney Disease Center. Her research interests focus on the role collagen binding receptors in renal physiology and pathophysiology

## **Heidi Schaefer, M.D., Associate Professor in Nephrology**

Dr. Schaefer is a transplant nephrologist whose research interests including living donation and medical issues related to kidney transplant recipients.

## **Edward Siew, M.D., M.S.C.I., Assistant Professor of Medicine**

Dr. Siew's research interests include the translational and clinical study of Acute Kidney Injury. Specifically, he has a research program centered around validating novel biomarkers for the diagnosis and prognosis of AKI as well as examining the processes of care patients experience following an AKI event.

## **Takamune Takahashi, M.D., Ph.D., Associate Professor in Nephrology**

Dr. Takahashi studies the molecular controls of renal vascular development and the pathogenic mechanisms of diabetic vascular injury.

## **Jens Titze, M.D., Associate Professor in Clinical Pharmacology**

Dr. Titze's research uses both experimental rodent models and human studies to evaluate renal and extra-renal control of electrolyte and water homeostasis by immune cells.

## **Roy Zent, M.D., Ph.D., Professor in Nephrology**

Dr. Zent's research focuses on understanding the role of cell-matrix interaction in renal development as well as performing structure/function analysis of the matrix receptors integrins.



## Registration

### Vanderbilt Medical Student Research Training Program In Nephrology & Hypertension Summer of 2013 Application

**Complete Application Deadline (must receive ALL items by): February 17th, 2013.**  
Notifications will be sent the week of March 4<sup>th</sup>, 2013.

The Vanderbilt Medical Student Research Training Program in Nephrology & Hypertension (MSRTP-NH) is sponsored by the National Institutes of Health and allows medical students to conduct research under the direction of an established scientist in the areas of Nephrology and/or Hypertension at Vanderbilt University during the summer between the first and second year, or second and third year of medical school. You are expected to work on your research for 8-10 weeks and must participate in the National Symposium at Vanderbilt on July 31<sup>st</sup> and August 1<sup>st</sup>, 2013. <http://www.mc.vanderbilt.edu/mkpcdc>

#### **Instructions:**

1. Please complete the accompanying 2-page registration form and send this along with: 1) a copy of your CV; 2) two letters of recommendation from physicians and/or scientists who you have worked with at some point in your training address (these can be emailed or faxed separately directly to the Program Coordinator, although you are ultimately responsible for them arriving before the deadline) or with your packet; and 3) a written statement explaining why you are interested in this kidney related research experience, how much research experience you already have, and what your long term career goals are. Send by email or FAX to:

Nancy Lightsey  
MSRTP-NH Program Administrator  
1161 21<sup>st</sup> Avenue South  
MCN S-3223  
Nashville, TN 37232

Phone: 615-322-3146  
Fax: 615-343-9391  
[nancy.lightsey@vanderbilt.edu](mailto:nancy.lightsey@vanderbilt.edu)

2. **If you are NOT a Vanderbilt student**, you must obtain a letter from the Dean of your Medical School indicating you are a student in good standing and send it with the application.
3. **If you are NOT a U.S. citizen**, please include documentation which certifies your U.S. permanent residency status (a PDF copy of your green card).
4. **Submit your completed application by February 17<sup>th</sup>, 2013.**

**Notifications regarding the Program will be sent out the week of March 4<sup>th</sup>, 2013.**

For questions and information about registration and accommodations, please contact Nancy Lightsey at 615-322-3146 or [nancy.lightsey@vanderbilt.edu](mailto:nancy.lightsey@vanderbilt.edu)



# Registration Form

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1. \*Name (Last, First, Middle Initial):

2. \*Current Mailing Address (Street, City, State & Zip Code):

3. \*Permanent Mailing Address (Street, City, State & Zip Code):

4. \*Contact Telephone (Area Code-XXX-XXXX):

5. \*Permanent Contact Telephone (Area Code-XXX-XXXX):

6. \*Email Address:

7. \*Medical School's Name:

8. \*Medical School Classification:  1<sup>st</sup> year  2<sup>nd</sup> year

9. \*Date of Birth (Month/Day/Year – XX/XX/XXXX):

10. \*Gender:  Male  Female

11. \*Are you a U.S. Citizen or a Permanent Resident? (You must be a U.S. Citizen or U.S. Permanent Resident to participate in this Program.)

Citizen  Permanent Resident

For non-U.S. Citizens, please make a copy of your Permanent Resident Card (green card).

12. Race/Ethnicity:

- American Indian or Alaskan Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or other Pacific Islander
- White
- Other \_\_\_\_\_





## Registration Form

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13. \*What was your undergraduate major?

14. \*Please indicate your research preferences:

- Animal Research
- Cell Biology
- Clinical Research
- Basic Science Research on Humans
- Any Research

15. \*Please indicate your research interests:

- Chronic Kidney Disease
- Dialysis
- Glomerulonephritis
- Kidney Development
- Fibrosis
- Cardiovascular Disease
- Hypertension
- Molecular Genetics
- Acute Kidney Injury
- Other

16. \*Please list your top 10 choices for a preceptor, with 1 being your first choice.

1. \_\_\_\_\_ 6. \_\_\_\_\_

2. \_\_\_\_\_ 7. \_\_\_\_\_

3. \_\_\_\_\_ 8. \_\_\_\_\_

4. \_\_\_\_\_ 9. \_\_\_\_\_

5. \_\_\_\_\_ 10. \_\_\_\_\_

**ALL items marked with an asterisk \* are required fields and must be completed.**

Please print Registration Form, fill out completely, and send with other required documents by email or FAX to Nancy Lightsey before the February 17<sup>th</sup>, 2013 deadline.