

RESEARCH AND DISCOVERY

IN THE EMORY DEPARTMENT OF PEDIATRICS AND EMORY-CHILDREN'S CENTER

Welcome to our newest faculty members!

FY10 was marked by tremendous growth in research and FY11 will be no different. As we start a new year of ePeds Research, we are going to start a new feature of introducing you to our new faculty and also sharing with you news from our current colleagues in research each month.

Since September 2009, 19 new faculty members have joined DOP:

Hematology/Oncology:

Dolly Aguilera, MD	Tobey MacDonald
Kevin Bunting, PhD	Zengqhi Wang, PhD
Kelly Goldsmith, MD	
Jacques Galipeau, MD (<i>joint appt with adult HemOnc</i>)	
James Zimring, MD (<i>joint appt with Pathology</i>)	

Infectious Disease:

Gregory Melikian, PhD	Mariana Marin, PhD
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VA Biochemical Pharmacol:

James Kohler, PhD

Neurology:

Cherise Frazier, MD

Emergency Medicine:

Sheila Goel, MD

Neonatology:

Christel Biltorf, MD

Marcus Institute:

Eboni Smith, PhD

PACS:

Roberta Leu, MD
Josh Freedman, MD

Sibley Heart Center:

Nikil Chanani, MD	Clifford Lindsey, MD
Michelle Wallace, MD	

Keep watching – we'll be welcoming more new faculty throughout the Fall!

DON'T FORGET!

The Children's Research Center's are seeking new members!

[Click here for Information and Application for Membership to one of the Centers](#)



Research focus on Leukemia and other Hematologic disorders:

Dr. Kevin Bunting, PhD

Dr. Bunting joined the HemOnc division this past April and is located on the 4th floor of the ECC building. Dr. Bunting's research is focused on understanding the biology of the latent transcription factor STAT5, in particular its roles in normal hematopoietic stem cell function and its aberrant activation associated with a variety of hematologic malignancies. Activation of STAT5 by phosphorylation is required at tightly regulated levels for normal hematopoiesis but its persistent activation is prevalent in adult and pediatric leukemias. A major focus of the Bunting lab is to identify key STAT5 downstream target genes associated with both normal and leukemic hematopoietic cell function and to utilize this knowledge to develop novel approaches to manipulate STAT5 activity in a therapeutic setting. In leukemia therapy, the goal is to disengage leukemic cell survival and to facilitate leukemia cell sensitivity in combination with other targeted agents. In hematopoietic stem cell transplantation, the goal is to develop innovative forms of conditioning based on STAT5 signaling inhibition.



Dr. Bunting also studies the Grb2-associated binding (Gab) family of adapter proteins and their role in PI3K-AKT-mTOR activation in hematopoietic and immune cell biology. The Gab family of scaffolding adapter proteins are synergistic with STAT5 in controlling hematopoietic stem cell self-renewal and leukemogenesis and thus represent an attractive cooperative signaling node in which to focus on

therapeutics targeting both STAT5 and AKT mediated signals.

Introducing Greg Melikian, PhD: Furthering the understanding of how viruses enter cells

Dr. Melikian is the first recruit of the **Children's Research Center for Immunology & Vaccines** and just arrived in August 2010. His research program is aimed at understanding the early steps of entry of enveloped viruses into cells, from receptor binding to the nucleocapsid release into the cytosol. We focus on entry of the Human Immunodeficiency Virus (HIV) and of the model oncogenic retrovirus, Avian Sarcoma and Leukosis Virus. A new project in the laboratory is aimed at understanding the mechanism of membrane fusion mediated by the Hepatitis C Virus E1/E2 glycoproteins. Our strategy to elucidate the viral fusion mechanism is to characterize both viral protein and lipid intermediates leading to merger of viral and cellular membranes. My laboratory develops and employs state-of-the-art functional techniques, including the time-resolved visualization of single viral particles in live cells. Using these approaches, we have shown that, contrary to common perception, HIV enters susceptible cell lines by receptor/coreceptor-mediated endocytosis followed by fusion with endosomes. This and other findings implicate the cell endocytic machinery in productive entry of viruses that do not require low pH for infection. We are currently working on defining the compartments conducive for virus entry and identifying cellular factors hijacked by viruses to enhance the fusion efficiency.



Clinical Research Highlight on Type 1 Diabetes and the ITN: Mark Rigby, MD, Eric Felner, MD



Back row: Stephanie Meissner, Mark Rigby, Eric Felner
Front row: Greg Smallwood (adjunct), Sol Jacobs (Emory DOM)

At Children's and ECC there are about 400 newly Type 1 diabetes diagnosed children annually, and well over 5000 with the disease in the Atlanta area. This is one of the largest institutional populations of children with Type 1 diabetes in the United States. To date, there has not been a coordinated institutional effort for Type 1 diabetes studies.

Recent progress in understanding the basic properties of the immune system has created the opportunity to develop approaches to detect, treat and hopefully cure Type 1 diabetes. The NIH created a national coalition called The Immune Tolerance Network (ITN) to develop and implement novel strategies for autoimmune diseases and organ transplantation. One of their focus areas is Type 1 diabetes.

Eric Felner and Mark Rigby, joined the ITN to assist with a trial aimed at evaluating anti-thymocyte globulin in new onset diabetes. This is a drug that depletes T cells and has been used in organ transplantation. T cells coordinate autoimmunity in Type 1 diabetes. In the 7 months since their site opened, the Emory/Children's group has been the most productive center in the country, surpassing centers in California (UCLA and UCSF), Denver (Barbara Davis Center) and Children's Hospital in Philadelphia. Drs. Rigby and Felner attribute this success to the support of the local pediatric endocrinology groups (Pediatric Endocrine Associated and Emory Pediatric Endocrine), the Children's Diabetes Nurse Educators headed by Sue Tocher, and support from the ACTSI and the Emory Clinical Research Site.

Drs. Rigby and Felner have set their goals beyond this one project. Their research group, which includes coordinators Stephanie Meissner and Greg Smallwood, will be setting up at least 2 other multi-center national clinical trials supported by the ITN. One study will be for evaluating the anti-inflammatory agent alpha-1-

PLEASE TAKE NOTE:

NIH is dropping the 2-day window for error correction effective January 25, 2011. This window has been available for a period of two days AFTER the stated deadline, and we have had to use it several times! **Proposals will now need to be submitted via Grants.gov 2 days ahead of deadline** in order to have time to correct any errors and hence **PI's will need to plan ahead accordingly..** See [NIH NOT-OD-10-123](#).

antitrypsin. The other study is spearheaded by Dr. Rigby, who is the national Protocol Chair, and will evaluate a drug called alefacept (LFA3IG), which is a biologic agent that targets highly active pathogenic T cells.

In addition NIAID and ITN have recently developed a national steering committee called the Type 1 Diabetes Clinical Consortium to assist with the oversight and development of future national and international clinical trials in Type 1 diabetes. Ours is 1 of 8 national sites to be part of that group, and Dr. Rigby serves on that committee. With this association, our group will be both contributing to the development of future novel translational and clinical studies, and have preferred access to participate in them.

As a result of these current and future projects to evaluate some of the most progressive approaches in reversing Type 1 diabetes, Atlanta will be on the international forefront of translating concepts derived from basic research into clinical reality and paving the way to finding a cure for Type 1 diabetes.

Support for Nursing Research

Linda Riley is the Director of Nursing Research and Evidence Based Practice at Children's Healthcare of Atlanta. The Nursing Research and Evidence Based Practice initiative was created to support the professional standards for nursing excellence of evidence based practice and nursing research. The objectives are to:

- Facilitate the conduct of independent, extramurally funded studies that generate new knowledge
- Engage nurses in ongoing systematic examination of their clinical practice
- Provide educational opportunities and one on one mentorship
- Promote the formation of multidisciplinary research teams
- Establish evidence based nursing practice as a professional responsibility to ensure optimal care of children

Upcoming Event

OCTOBER 1, 2010: "An Evidence-Based Practice ToolKit for Bedside Nurses" Conference to be held at Kennesaw State University Center.

This is a conference for nurse administrators, nurse managers, clinical nurse specialists, nurse educators, nurse researchers, and nurses who are interested in conducting nursing research, quality improvement processes and embracing evidence-based practice in clinical healthcare settings. The objectives of the conference are to:

- ❖ Identify methods for generating and conducting nursing research in clinical practice

- ❖ Differentiate between quality improvement and nursing research
- ❖ Identify use of evidence-based practice in clinical settings

For information on registration and program details, please [access this link](#).

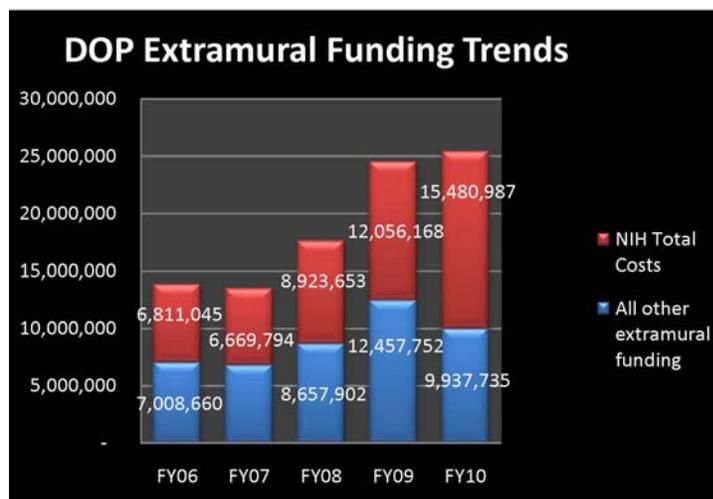
Other ongoing opportunities:

- New Computer Based Training Modules defining key elements of nursing research and the EBP clinical decision making process model
- Journal Clubs promote skill in critically evaluating research evidence. A two hour workshop for club leaders is posted in Aspen.
- Nursing Research & Evidence Based Practice Short Course. This new six session research course that will begin in September is designed to provide information for the novice researcher about navigating the steps of research process, and completing forms for IRB approval. The 18 hour course is currently available in Aspen with manager approval.
- Pilot funding from the Dudley Moore Nursing and Allied Health Fund is available on an annual basis to support pilot studies lead by nurses and allied health professions at Children's. The next round of applications will be due in spring, 2011.

For more information, contact Linda Riley, Director of Nursing Research and Evidence Based Practice, at linda.riley@choa.org or 404-785-9377 or visit us on Careforce at [Nursing Research and Evidence Based Practice](#)

Funding Progress Made in FY10

In FY10, our goal was set to become a Top-10 NIH funded Department of Pediatrics. After the success in funding seen in FY10, this goal is much closer than we thought! The final rankings have not yet been calculated for the NIH FY10 year, but we hope to see final data later this Fall.



What were our extramural funding numbers for FY10? As of July, they were looking grim, but OSP processed **almost 70 awards** in August alone!

TOTAL EXTRAMURAL FUNDING FY10:
\$25,418,722

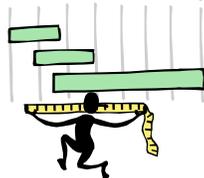
TOTAL NIH FUNDING FY10:
\$15,480,987

In the chart above, you can see that we took a big leap forward in the percentage of NIH funding that makes up our total funding.

85 faculty and trainees received extramural funding this year and brought us to the all-time peak in funding!

Updating Faculty and Research Metrics

It was a year ago that we started introducing the faculty research index / scorecard to help track progress in growing the excellence and national prominence of our research. Over the next month we will be reviewing these with faculty and leadership. Data is being pulled



from CVs and funding-related reporting to keep this from being an onerous process for the faculty but we will still need your help in reviewing them and making sure activity was appropriately captured.

New funding received in June, July, and August 2010

Kevin Bunting, PhD, HemOnc, NIH R01, "STAT5 STRUCTURE-FUNCTION IN HEMATOPOIESIS"

Anne Fitzpatrick, PhD, PACS, NIH R01, "REDOX DISTURBANCES AND CORTICOSTEROID RESPONSES IN CHILDREN WITH SEVERE ASTHMA"

Kelly Goldsmith, MD, HemOnc, Children's Healthcare of Atlanta, "BH3 DEATH DOMAIN PEPTIDES IN NEUROBLASTOMA"

Larry Greenbaum, MD, Nephrology, Abbott Labs, "A Phase 3, Prospective, Randomized, Double-blind, Placebo-controlled Multicenter Study to Evaluate the Pharmacokinetics, Safety and Efficacy of Paricalcitol Capsules in Decreasing Serum Intact Parathyroid Hormone Levels in Pediatric Subjects Ages 10 to 18"

Larry Greenbaum, MD, Nephrology, Children's Mercy Hospital, "Chronic Kidney Disease in Children (CKiD) Admin Supplement"

Larry Greenbaum, MD, Nephrology, Raptor Therapeutics, "A Pharmacokinetic and Pharmacodynamic Study to Determine the Safety and Efficacy of Cysteamine Bitartrate Delayed-release Capsules (RP103), Compared to Cystagon® in Patients with Nephropathic Cystinosis"

Julie Gutman, MD, Infectious Disease, CDC, "CASE MANAGEMENT OF MALARIA IN LATIN AMERICA"

Ann Haight, MD, HemOnc, NATL CHILDHOOD CANCER FOUNDATION, "Multi-Center, Open Label, Randomized Trial Comparing Single Versus Double Umbilical Cord Blood (UCB) Transplantation in Pediatric Patients With High Risk Leukemia and Myelodysplasia"

Ann Haight, MD, HemOnc, NEW ENGLAND RESEARCH INSTITUTES, "A Pilot Trial of Unrelated Donor Hematopoietic Cell Transplantation for Children with Severe Thalassemia Using a Reduced Intensity Conditioning Regimen (The URTM Trial)"

Shannon Hamrick, MD, Neonatology, Thrasher Foundation, "ROLE OF INFLAMMATORY RESPONSE IN BRAIN INJURY"

Veda Johnson, MD, Gen Peds Grady, ABRAHAM J & PHYLLIS KATZ FOUNDATION, "PACE Project: Comprehensive Family Support"

Christine Kempton, MD, HemOnc, Hemophilia of Georgia, "HoG Comprehensive Care Grant 2010-2011"

Patty Lin, MD, Neonatology, NIH R01 Sup, "PROBIOTICS AND INNATE INTESTINAL DEFENSE"

Nael McCarty, PhD, PACS, NIH R01, "The Dynamic Nature of the CFTR Channel Pore: Coupling Gating to Permeation"

Jan Mead, PhD, VA Biochem, Bayer, "Evaluation of anti-cryptosporidial agents in an acute model of infection"

Shannon Meeks, MD, HemOnc, NIH K08, "MECHANISMS OF IMMUNOGENICITY OF FACTOR VIII"

Gregory Mellikian, PhD, Infectious Disease, NIH R01, "Entry Mechanisms used by a model retrovirus"

Marty Moore, PhD, Infectious Disease, NIH R01, "ROLE OF THE RESPIRATORY SYNCYTIAL VIRUS FUSION"

Andy Muir, MD, Endocrinology, George Washington University, "TODAY STOPP TD2: Studies to Treat or Prevent Type Two Diabetes"

Jim Nettles, PhD, VA Biochem, UNIVERSITY OF PITTSBURGH, "Rational Design of NRTI for Drug Resistant HIV-1"

Tamara New, MD, HemOnc, CONNECTICUT CHILDRENS MEDICAL CENTER, "Sickle Cell Pain: A Novel Approach to Assessment and Relief"

Matt Paden, MD, Critical Care, Children's Hospital of Boston, "Clinical Coordinating Center for a Clinical Research Network for the Treatment of Acute Lung-Injury (ALI) and the Acute Respiratory Distress Syndrome (ARDS)"

Matt Paden, MD, Critical Care, Children's Hospital of Boston, "Genetic epidemiology of life-threatening influenza infection in children"

Richard Plemper, PhD, Infectious Disease, NIH R21, "COUNTERACTING RESISTANCE THROUGH HOST-DIRECTED MYXOVIRUS INHIBITORS"

Richard Plemper, PhD, Infectious Disease, NIH R56, "CRYO-ELECTION AND BIOCHEMICAL ANALYSIS OF NATIVE PARAMYXOVIRUS FUSION COMPLEXES"

Mark Rigby, MD, PhD, Critical Care, NIH R01, "GLYCEMIC CONTROL IN PEDIATRIC CRITICAL ILLNESS: THE PED-E-TROL TRIAL"

Michael Schechter, MD, PACS, Bayer, "A study to evaluate the safety and pharmacokinetics of ciprofloxacin in adults and children aged 6 - 12 years with cystic fibrosis following inhalation of ciprofloxacin dry powder"

Michael Schechter, MD, PACS, GlaxoSmithKline, "A Randomized, Double Blind, Parallel Group, Placebo Controlled 28 Day Study to Investigate the Safety, Tolerability and Pharmacodynamics of SB-656933 in Patients with Cystic Fibrosis."

Ray Schinazi, PhD, VA Biochem, UC Davis, "PRIMATE MODEL TOWARDS HIV ERADICATION STRATEGIES"

Paul Spearman, MD, Infectious Disease, Georgia Research Alliance, "EVALUATION OF HIV"

Paul Spearman, MD, UC Irvine, "Broadly Reactive Antibodies Against Chimeric virus-Host Antigens"

Shilpa Vyas-Read, MD, Neonatology, NIH K08, "THE ROLE OF REACTIVE OXYGEN SPECIES IN ALVEOLAR EPITHELIAL-MESENCHYMAL TRANSITION"

Other Newsletter links:

[Emory Office of Sponsored Programs Monthly Newsletter for July/August](#)

[Emory Environmental Health & Safety Office Lab Rat Newsletter](#) for September

[NIH Office of Extramural Research Nexus for September](#)