UAB DEPARTMENT OF MICROBIOLOGY

Micro Newsletter | Fall 2012

Welcome New Faculty Member Guangxiang (George) Luo, M.D., M.P.H.

A native of Hunan Province in Southern China, George Luo comes to UAB from the University of Kentucky College of Medicine. His research focuses on viral hepatitis, in particular hepatitis B and C and their link to cancer.

"Our overall objective is to combine reverse genetic, biochemical, cell biological, proteomic, and transgenic approaches to a thorough understanding of the molecular mechanisms of HCV RNA expression, replication, virion assembly, and viral pathogenesis," says Luo. "We are developing novel technologies leading to the discovery of new antiviral therapies and effective vaccines for the control of viral hepatitis."

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Luo graduated from Hunan Medical College (currently Xiang-Ya School of Medicine, Central South University) in 1983 and received his MPH from Beijing Capital University of Medical Sciences in 1986. He did postdoctoral training at Fox Chase Cancer Center in Philadelphia and Mount Sinai School of Medicine in New York. Luo worked on antiviral drug discovery and development at Bristol-Myers Squibb Pharmaceutical Research Institute before joining the Department of Microbiology, Immunology and Molecular Genetics of the University of Kentucky College of Medicine in 2000.

During his career, Luo has focused on molecular biology, pathogenesis, and antiviral drug discovery and development for a number of important human pathogens, including retroviruses, hepatitis B (HBV), C (HCV), and D (HDV) viruses, influenza viruses, and respiratory syncytial virus (RSV).

In addition to having more than 60 research articles published in peer-reviewed international journals, Luo is a member of the editorial board of several journals, including *Journal of Virology*, *Journal of Antivirals and Antiretrovirals*, and *World Journal of Gastrointestinal Pathophysiology* (WJGP). He also serves as a guest editor for *PLoS Pathogens* and is an ad hoc reviewer for more than 20 journals.

Guangxiang (George) Luo, M.D., M.P.H.

Luo brings with him two students and two postdoctoral fellows from Kentucky and expects to expand his lab soon. In addition to working with the Microbiology Department, he will also work closely with CFAR and the Comprehensive Cancer Center.

Luo has two daughters—one in law school and the other finishing undergraduate school at Case Western University in Cleveland, Ohio, and pursuing an application to medical school.

Promotions

Congratulations to Elena Frolova, Ph.D., and Sunnie Thompson, Ph.D., who were promoted to Associate Professors with tenure in the Department of Microbiology.

Seminars

UAB Graduate Kicks Off Micro's Seminar Series

"Bacterial Mutualism in Recurrent Otitis Media" was the title of the first seminar for the fall quarter of 2012. UAB Department of Microbiology graduate, W. Edward Swords, Ph.D., presented the seminar. Swords is now Associate Professor in the Department of Microbiology and Immunology at Wake Forest University, School of Medicine.

November's seminar will be presented by Carlos Bustamante, Ph.D. Bustamante is a Howard Hughes Medical Institute investigator and Professor of Molecular & Cell Biology, Physics, and Chemistry at the University of California, Berkeley. His seminar will be November 13, 2012, at noon in BBRB 170.

December's seminar will be presented by Ann M. Rothstein, Ph.D. Rothstein is a Professor in the Department of Medicine, Division of Rheumatology at the University of Massachusetts Medical School. Her seminar will be December 11, 2012, at noon in BBRB 170.

Follow link for a list of upcoming seminars.

Two Positions = Twice the Research Opportunities

Adrie Steyn, Ph.D., has accepted a faculty position at the KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH), a Howard Hughes Medical Institute (HHMI) funded institution in Durban, South Africa. This makes two positions for Steyn, as he will also keep his faculty position and research program in the Department of Microbiology here at UAB.

Steyn's unique situation will allow him to send South African students for training in Alabama and bring American students to KwaZulu-Natal to see TB close up. Since South Africa gets more than 400,000 new tuberculosis cases each year, compared to around 23,000 in the US, Steyn's research at K-RITH will extend his lab's capacity to better understand the disease and, therefore, translate basic scientific discoveries into the clinic.

The KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH) is a groundbreaking collaboration between the Howard Hughes Medical Institute and the University of KwaZulu-Natal in South Africa. As an independent research institute K-RITH will work in collaboration with academic and clinical institutions in Africa, North America, Europe, and Asia.

For more information about K-RITH, go to www.k-rith.org.

Awards

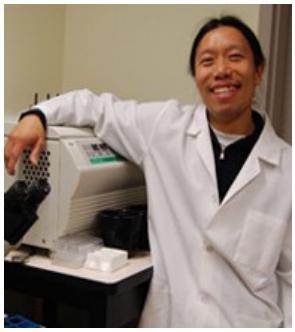
Micro Mentor Receives 2012 Excellence Award

Congratulations to Scott Barnum, Ph.D., who was awarded the 2012 Graduate Dean's Award for Excellence in Mentorship. The *Dean's Excellence in Mentorship Award* recognizes full-time regular UAB faculty members who have demonstrated exceptional accomplishments as mentors of graduate students and/or postdoctoral fellows.

November 16, 2012 is the deadline for nominations for the 2013 *Dean's Excellence in Mentorship*. For more information, go to http://www.uab.edu/graduate/faculty/deans-award-for-excellence-in-mentorship

National Football League Charities Sponsors UAB Research

Hubert Tse, Ph.D., and Candace Floyd, Ph.D., Associate Professor and Director of Research in the Department of Physical Medicine and Rehabilitation have received a grant from NFL Charities to study a new compound that might minimize the effects of a concussion.



The compound known as a catalytic oxidoreductant, which was developed by Hubert Tse and collaborators at Duke University to combat rejection in organ transplantation, will be examined for its beneficial effects following injury to the nervous system.

NFL Charities, the charitable foundation of the National Football League owners, provided $1.5 million for sports-related medical research at 15 institutions, including UAB.

Noteworthy

Terje Dokland, Ph.D., has been appointed to the editorial board of the new journal *Bacteriophage*. For more information about the journal, go to, http://www.landesbioscience.com/journals/bacteriophage/.

International Collaboration Could Yield Positive Impact for Patient Treatment

Jan Novak, M.D., Ph.D., and UAB nephrologist, Bruce Julian, M.D., are participating in an ongoing collaborative study with researchers Francois Berthoux, M.D., of the University Hospital of Saint-Etienne, in France; and Hitoshi Suzuki, M.D., Ph.D., of Juntendo University, in Tokyo, Japan. The results of their recent study published in the *Journal of the American Society of Nephrology*, and featured in *Kidney News,* indicates that increasing blood levels of certain autoantigens and autoantibodies may act as warning signs that a patient's disease is worsening. These findings could lead to better diagnosis and treatment of patients.

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Commenting on the research, Novak says, "Bruce Julian and I are very pleased with the response to our collaborative study with our colleagues in France. In fact, we are working on developing the next generation of assays with enhanced specificity and sensitivity. We hope that such assays can be clinically applicable in the near future for assessment of severity of IgA nephropathy as well as predicting disease progression."

ASN Kidney News is the authoritative source for analysis of trends in medicine, industry, and policy affecting all practitioners in nephrology. To read the article in the September 2012 issue, go to www.asn-online.org. To read the paper, go to http://jasn.asnjournals.org/content/23/9/1579.abstract.

Milestones

20 Years of Service

Elliot Lefkowitz, Ph.D.; Tobithia McKinney; Amy Perkins; and Mark Walter, Ph.D., were honored at UAB's annual service awards ceremony earlier this year—each for 20 years of continuous service with the university. Through the years, these dedicated men and women have contributed valuable insights and talents to the Department of Microbiology. We thank each one of you! We are proud to have you on our team!

Cindy Pratt Retires with 28 Years

Administrative Associate Cindy Pratt has always worked in the Microbiology Department, but she has worn many hats during her employment at UAB.

"I started with Dr. Gillian Air [now at the University of Oklahoma] in October 1984. When she moved on, I began working for Dr. David Bedwell, and later on for Drs. Bedwell and Zajac," says Cindy. In addition, Cindy served as course director for Sophomore Medical Microbiology and designed and maintained the Microbiology website until July 2012.

"Cindy has provided great administrative help over the years, and she's also a great friend. We'll miss her tremendously," says Bedwell. Agreeing wholeheartedly, Zajac, jokingly added, "She's the only person who can keep me sane. She must return for my sanity."

In true form, Cindy eases the anxiety, saying, "I will be coming back part-time to work with Drs. Bedwell and Zajac, but I am also looking forward to having more time to play with my grandchildren."

Student Spotlight

First UAB Beckman Scholar Named

Timothy Fernandez, a senior undergraduate student working in the lab of Jamil Saad, Ph.D., has been awarded a Beckman Scholarship for 2012, the first of its kind in the history of UAB.

Although the Beckman Scholars Program was established in 1997, this is the first year for UAB to be named a recipient of the prestigious award. The program is named in honor of Arnold O. Beckman, founder and Chair Emeritus of Beckman Instruments Inc., and presented by the Arnold and Mabel Beckman Foundation. It is a highly competitive three -year grant for exceptional undergraduate students in the biological, chemical, and biomedical sciences. Beckman Scholars participate in high-impact research and engage in a long-term, intensive collaboration with their faculty mentor while learning how to conduct independent research in a nurturing environment.

In 2011, Fernandez received Honorable Mention from the Barry M. Goldwater Scholarship Program. The program, named in honor of Barry M. Goldwater who served as a US Senator for 30 years, was created to encourage outstanding students to pursue careers in mathematics, natural sciences or engineering and to foster excellence in those fields.

Carmichael Award 2012

Congratulations to Mikhail Pavlenok for being chosen to receive the 2012 Marie and Emmett Carmichael graduate scholarship. The Carmichael Fund provides stipend support for graduate students in biomedical sciences at UAB.

The Carmichael award was established in 1988 and is named in honor of its endowers, Marie and Emmett Carmichael. Dr. Emmett Carmichael was an important member of the UAB community between 1945-1966 and served as Chair of the Department of Biochemistry as well as Assistant Dean of the Medical College and the School of Dentistry.

Pavlenok works in the lab of Michael Niederweis, Ph.D.

Micro Graduate Students Attend ASM San Francisco

By Melissa Oliver

The American Society for Microbiology meeting in San Francisco, California, was my first opportunity presenting my research at the national level. At the poster sessions, my lab mate, Allison Brady, and I met collaborators, major contributors to the pneumococcal field and networked for post-doctoral positions with scientists in government, industry and academia.

The Women in Science seminar taught us tips and tricks of how to succeed as a professional female scientist. We also had the opportunity to meet Dr. Moon Nahm's (our mentor) family, his first graduate student, HoSeung, and visit major landmarks we've only seen in pictures or movies. I am very grateful for this experience and hope one day I can be a mentor and inspire greatness in someone.

The 112th General Meeting of the American Society of Microbiology was held June 16-19, 2012, in San Francisco, California. For more information about this meeting, go to http://gm.asm.org. The ASM General Meeting will be held May 18-21, 2013, in Denver, Colorado.

Welcome New GBS Students 2012 - 2013

Microbiology Theme Students

Ivan Akhrymuk
Frolova

Kyle Brawner
Mountz

Jaleesa Garth
Steele

Preeyam Patel
Niederweis

Christopher Radka
Dokland

Shannon Romano
Thompson

Cathy Yea Won Sung
Nahm

Katherine Taylor
Wu

Arthur Totten
Atkinson

Yuge Wang
Goepfert

Immunology Theme Students

Daniel DiToro
Weaver

Sara Gibson
Desarno

Jennie Hamilton
Mountz

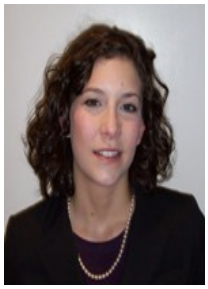
Jason Peng
Raman

Kristen Reeder
Steele

Boyoung Shin
Benveniste

Candace Pilgrim
Tse

Jeffrey Singer
Weaver



Sara Stone
Lund

**Current Rotation Lab*

Just Published

S.R. Barnum

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D.M.Bedwell

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D.E. Briles

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D.D. Chaplin

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T. Dokland

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M. Niederweis

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M.R. Walter

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Grant Awards

Barnum
(Theresa Ramos Service Award), NIH, *The Role of the Terminal Complement Pathway in Experimental Cerebral Malaria*, 8/15/12 - 8/14/14

Bedwell
NIH, UAB CF Research and Translation Core Center - Core B, 5/1/12 - 4/30/17

Burrows
NIH, *Defining the Interaction of FCRLA with Immunoglobulin*, 2/15/12 - 1/31/14

Frolov
NIH, *Mechanism of Alphavirus Packaging: Designing of Pseudoinfectious Viruses*, 2/1/12 - 1/31/17

Frolov
NIH, *New Generation of Efficient Vaccines Against Encephalitogenic Alphaviruses*, 8/1/12 - 7/31/13

Kabarowski
Lupus Research Institute, *Modulation of Autoimmunity by High-Density Lipoprotein in Lupus-Prone Mice*, 1/1/12 - 12/31/14

Kearney
NIH, *Effects of Neonatal Microbial Exposure on Anti-polysaccharide B Cell Development*, 3/1/12 - 2/28/17

Kearney
Juvenile Diabetes Research Foundation, *Antibodies to Beta Cell GlcNAc - Modified Autoantigens Blocks T1D in NOD Mice*, 7/1/12 - 6/30/14

Lund
Israel Binational Science Foundation, *The Mechanism Whereby CD38 Deficiency Hibits Alzheimer's Disease Pathology in a Mouse Model*, 10/1/12 - 9/30/16

Luo, M.
NIH/Emory University, *Developing Myxovirus Inihibitors with Expanded Pathogen Target Range*, 7/1/12 - 6/30/17

Michalek
NIH/Agile Sciences, *Treating Oral Biofilms with 2-Aminoimidazole/Triazole Conjugates*, 4/1/12 - 3/31/13

Novak
NIH, *Molecular Basis of Pathogenicity of IgA1-containing Immune Complexes*, 8/1/12 - 7/31/13

Steyn
(Vikram Saini Training Grant), American Lung Association, *Cigarette Smoke and Drug Resistant Tuberculosis*, 7/1/12 - 6/30/13

Thompson
NIH, *Host Factors Required for Dengue and Yellow Fever Virus Amplification*, 8/3/12 - 7/31/14

Tse
American Diabetes Association, *Synergism of Innate Immune-Derived Reactive Oxygen Species and T Cell Effector Responses in Type 1 Diabetes*, 7/1/12 - 6/30/17

Zajac
NIH, *The Regulation of T Cell Exhaustion by Adhesion Molecules*, 2/1/12 - 1/31/14

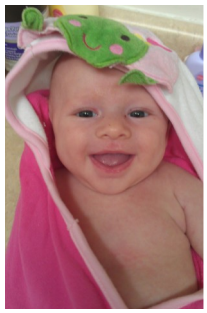
Extended Family

The summer of 2012 brought two new babies to the Microbiology Department extended family.

Oliver Martin Meredith was born on May 9 to Jill Meredith and her husband Jim.

and …...…

…..just two days earlier, Amy Perkins became a grand mother for the first time. Her granddaughter is named Avariah.



Around Campus and About Town

A Night to Believe: A Benefit Concert for Children's of Alabama
Presented by Children's of Alabama at Workplay
October 2, 2012 at 7 p.m. – admission is $35
This one-night-only event will feature Wiseman, Bob DiPiero, Tony Mullins and Jeffery Steele – collectively known as *The Hitmen of Music Row* of country music and reality TV fame. Proceeds from the event will benefit the Pediatric Transplant Program at Children's of Alabama.

Jazz in the Park at the Avondale Park Amphitheater
Presented by Magic City Smooth Jazz
October 4, 2012 6 p.m. – admission is free
The Neo Collective will open this special Jazz in the Park concert at 6:00 p.m. Japanese born pianist, composer and producer Keiko Matsui will take the stage at 7:00 p.m. Everyone is encouraged to bring blankets, seat cushions, coolers, food, small TV trays and votive candles to enjoy the concerts. The concession stand will provide food and beverages.
(http://www.magiccitysmoothjazz.com)

Christmas Village Arts, Crafts and Gifts Festival
Birmingham Jefferson Convention Complex (BJCC) Arena and Exhibition Halls
October 31-November 4, 2012 – Wednesday-Private Shopping: 9:00 am – 4:00 pm; Thursday, Friday, Saturday: 10:00 am – 8:00 pm; Sunday: 12:00 Noon – 5:00 pm
Wednesday—Private Shopping: $20.00 All other days: Adults $10.00; Children 6-12 $4.00; Children under 6 Free
Birmingham's most anticipated arts and crafts event with more than 700 booths of quality crafts and stocking stuffers suitable for holiday gift-giving.
(http://www.christmasvillagefestival.com/)

Moss Rock Festival
Presented by Freshwater Land Trust at Town Hall at The Preserve
November 3-November 4, 2012 – Saturday 10:00 to 5:00; Sunday 10:00 to 4:00
Admission is free.

(Continued on page 12)

Mark Your Calendar!

Department of Microbiology

- Research Retreat -

November 9-11, 2012

Destin, FL

Abstract Submission Deadline November 1st

(Continued from page 11)

This eco-creative two-day festival combines nature and eco-ideas with art and design. Activities for the day include more than 100 artists showing work inspired by nature; an eco-district featuring green living ideas; live music; interactive activities for children and much more.

George Balanchine's
The Nutcracker™
Presented by Alabama Ballet at Leslie S. Wright Fine Arts Center - Samford University December 14 - 23, 2012. Tickets range from $20 - $55.
(See show times at http://www.alabamaballet.org/Nutcracker2012.shtml)

The Alabama Ballet remains one of only 7 companies in the world granted the right to perform this holiday classic by the Balanchine Trust. Performed to Balanchine's exacting specifications; dazzling choreography, opulent costumes and extravagant sets make this production unlike any other.

{Look for us online!}

Employee Intranet Site

Departmental Website

Submit information for the newsletter via email to Ella Robinson at erobnson@uab.edu.