



UAB DEPARTMENT OF MICROBIOLOGY

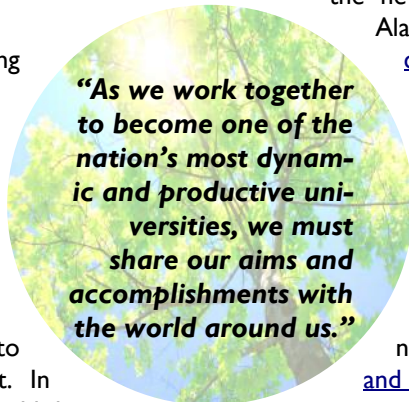
Micro Newsletter | Summer 2013

Microbiology—Raising Awareness

A few years back, the UAB Department of Microbiology could have been called a “well-known secret.” That is, people in the science world were very familiar with the accomplishments of the department; however, the general public knew very little about the important research being done here. That status has changed somewhat since members of the microbiology department are speaking out in more mainstream ways. This spirit of speaking out coincides with the university’s launch of its first unified branding campaign, “Knowledge that will change your world.”

University President Ray Watts came into office, after serving as Dean of the School of Medicine, just as the branding campaign was unveiled. He says that communicating UAB’s reach and influence will elevate the university’s profile with the greater public. “As we work together to become one of the nation’s most dynamic and productive universities, we must share our aims and accomplishments with the world around us.”

As the branding campaign draws attention to the university as a whole, members of the microbiology department are drawing attention to the department. In addition to publishing



“As we work together to become one of the nation’s most dynamic and productive universities, we must share our aims and accomplishments with the world around us.”

research results in science journals, researchers in the microbiology department are popping up in mainstream magazines at grocery store checkout lanes, on podcasts, and on twitter feeds. The potential outreach is well into the thousands.

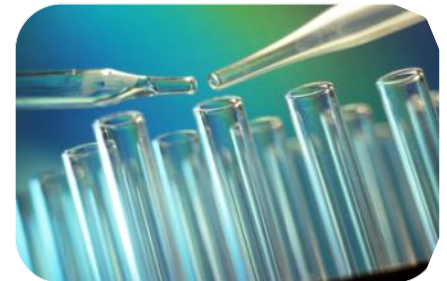
Take a look at a few ways people are going about sharing the accomplishments of research.



Hubert Tse, Ph.D., was seen by grocery shoppers everywhere who were browsing magazine covers while they waited to check out. Tse, who was pictured on the cover of the May 2013 issue of [Diabetes Forecast](#), was interviewed for the magazine’s feature story about funding science research.

Elliot Lefkowitz, Ph.D., has been heard by hundreds of visitors to The Mix-UAB, the news blog for the University of Alabama at Birmingham. His [podcast](#) addresses how efforts to integrate research on cancer and the microbiome depend on bioinformatics.

David Bedwell, Ph.D., has been interviewed about his research in cystic fibrosis for several magazine and television news stories including [US News and World Report](#), [Newswise](#) and [examiner.com](#).



Trainees also are bringing focus to the important research coming from the microbiology department.

Timothy Fernandez, a Beckman Scholar in Dr. Jamil Saad’s lab, was one of six nationwide chosen to present his research at the Beckman Foundation’s Scholars Symposium in Irvine, California.

Kathryn Doornbos is telling people in Amsterdam about the microbiology department as she participates in an 8-week collaboration at the Vrije Universiteit.

Jennifer Rowland is sharing her experiences in the microbiology department with people in Durbin, South Africa as she participates in the K-RITH program.

These are only a few examples of the ways members of the microbiology department are participating in UAB’s branding campaign. As people in Birmingham and around the world learn about the department, they will better understand how their financial support will help fund the necessary research that will bring about better health solutions.

Faculty News



Saad is Editor for Two Publications

Jamil Saad, Ph.D., will serve as an Academic Editor of *PLoS ONE* for one year, and he will serve on the Editorial Board of *Viruses* for three years.

Mesteky Awarded Honorary Doctorate of Medicine

Jiri Mesteky, M.D., Ph.D. was awarded an honorary doctorate of medicine by Palacky's University, School of Medicine, Olomouc, Czech Republic during a ceremony at the Archbishop's Palace on May 14, 2013.



In the picture from the left: Mesteky, Dean of the Medical School, Rector (President) of the University, Promotor (vice-president), two "front" carriers of university insignia and symbols.



What is the new coolest place on campus? The BBRB courtyard! Our old blue fountain has been transformed into a lush green oasis. Tables and seating are scheduled for installation in August.

New Hires

Dewey Brooke

Research Assistant with
Dr. Peter Prevelige

Chris Farley

Student Assistant, Chair's Office

Vojtech Franc

Visiting Scientist with
Dr. Jan Novak

Abdellah Akil

Postdoc with Dr. George Luo

Theresa Ramos

Postdoc with Dr. Scott Barnum

Useful Links

[Faculty Directory](#)

[Annual Retreat](#) **New!**

[Employee Site](#)

[Microbiology Seminar Series](#)

[BBRB Conference Rooms Schedule](#) **New!**

We're on the web:

<http://www.uab.edu/microbiology>

University of Alabama at Birmingham
Department of Microbiology

845 19th Street South, BBRB 276-11
Birmingham, Alabama
35294-2170



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

Upcoming Seminars

{JULY}

July 24, 2013

Faculty Candidate, "Studying Human Immunity in the Mouse", Tim Willinger, M.D., Ph.D., Associate Research Scientist, Yale University School of Medicine, Department of Immunobiology, Yale University (Host: David Chaplin)

July 29, 2013

Faculty Candidate, "Molecular and Environmental Determinants of CD4 T Cell-Mediated Immune Regulation", Craig Maynard, Ph.D., Post-doctoral Fellow, Department of Pathology, UAB (Host: David Chaplin)

July 30, 2013

Faculty Candidate, "Bacterial Adaptations in Lung Colonization and Viral Co-infection Revealed by Genome-scale Approaches", Brian J Akerley, Ph.D., Assistant Professor, University of Massachusetts Medical School, Department of Microbiology and Physiological Systems, Worcester, MA (Host: Michael Niederweis)

{AUGUST}

August 5, 2013

Faculty Candidate, "Unraveling Local Mechanisms of Immune Regulation in Human H. pylori Infection", Diane Bimczok Instructor, Department of Medicine, Division of Gastroenterology and Hepatology, UAB (Host: David Chaplin)

{SEPTEMBER}

September 10, 2013

"The Battle for Metal Between Bacterial Pathogens and Their Hosts", Eric Skaar, Ph.D., Associate Professor Dept of Pathology, Microbiology and Immunology, Department of Pathology, Microbiology, and Immunology, Vanderbilt University Medical Center (Host: Michael Niederweis)

September 17, 2013

Emilio Flano, Ph.D., Center for Microbial Interface Biology, The Ohio State University (Host: Allan Zajac)

September 24, 2013

"CRISPR RNA-Guided Adaptive Immune System in Bacteria", Blake Wiedenheft, Ph.D., Montana State University (Host: Peter Prevelige)

Alum News

UAB Micro Alum Elected to the National Academy of Sciences



Dr. William (Bill) Jacobs, Jr.

William ("Bill") Jacobs, Jr., Ph.D., professor of microbiology and immunology at Albert Einstein College of Medicine, is one of 84 new members of the National Academy of Sciences.

Jacobs received his Ph.D. in 1985 from the University of Alabama at Birmingham. As a student in the microbiology department, he studied leprosy in armadillos, isolating *M. leprae* DNA. He went on to a postdoctoral position at Albert Einstein College of Medicine, where in 1987 he set up his own lab.

Called a pioneer in the use of molecular genetics to control tuberculosis (TB), Jacobs focuses his research on the genes that make *Mycobacterium tuberculosis* (MTB)—the bacterium that causes TB—virulent, identifying

new drug targets and engineering weakened strains that can be used as live vaccines. He was the first scientist to introduce foreign DNA into MTB, a technique now regularly used by TB investigators around the world.

The National Academy of Sciences is a private, nonprofit institution that was established under a congressional charter signed by President Abraham Lincoln in 1863. It recognizes achievement in science by election to membership, and—with the National Academy of Engineering, Institute of Medicine, and National Research Council—provides science, technology, and health policy advice to the federal government. There are 2,179 active members and 437 foreign associates in the Academy.

Takahashi Receives Berger Prize



Drs. Hitoshi Suzuki (left) and Kazuo Takahashi (right)

Kazuo Takahashi, M.D., Ph.D., visiting scientist in Dr. Jan Novak's lab, received the prestigious Berger Prize for the best abstract at the 13th International Symposium on IgA nephropathy in Naging, China, June 4-6, 2013. This is the third consecutive International Symposium on IgA Nephropathy to award the Berger Prize (named in the honor of French nephrologist Dr. Jean Berger who first described IgA nephropathy in 1968). EACH prize was won by an investigator working in the Novak lab at UAB. The first two

(Continued on page 4)

(Continued from page 3)

awards went to Dr. Hitoshi Suzuki for work done in Novak's lab.

Other researchers from the Novak lab and his collaborators who attended the symposium include: Jan Novak (invited speaker, session chair); Hitoshi Suzuki (invited speaker); Ali G. Gharavi (invited speaker); Bruce A. Julian (steering committee, session chair); Zhi-qiang Huang (selected oral communication); Lea Novak (selected oral communication); Koshi Yamada (selected oral communication); Hirouki Yanagawa (selected oral communication); Krzysztof Kiryluk (selected oral communication).

The International Symposium on IgA Nephropathy is an international satellite symposium of the World Congress of Nephrology (WCN). This year's world-class scientific program highlighted the most recent advances in clinical and laboratory research to advance renal care in IgA Nephropathy. The three-day conference focused on presentations by leading researchers from many countries including the United States. New work was presented in poster and free communication sessions.

Student News

UAB Welcomes First K-RITH Student



This summer, James Hove Mazorodze began a one-year assignment in Dr. Andries Steyn's lab here at UAB as a part of his Ph.D. thesis at the KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH) in Durban, South Africa. His work, both here in the US and in South Africa, will be under the supervision of Dr. Andries Steyn, who maintains labs at K-RITH and at UAB.

After earning a bachelor's degree in biochemistry from the University of Zimbabwe, Mazorodze worked for a year in a plant biotechnology lab in South Africa, and then turned his focus to TB and HIV research. He received a Fogarty Fellowship to study *Mycobacterium tuberculosis* (MTB) pathogenesis at the Albert Einstein College of Medicine in New York with Dr. Bill Jacobs, a UAB graduate and recent National Academy of Sciences inductee. Mazorodze then went on to enroll in the Ph.D. program at K-RITH.

Public Defenses

Michael Robert Ludwig

"Surveying the Serum Proteome for Biomarkers of Early-Stage Pancreatic Cancer"

Mentor: Christopher A. Klug, Committee: Donald J.

Buchsbaum, Janusz H.S. Kabarowski,

Richard Lopez, Susan L. Ruppert

Chang receives 2013 Beckman Scholarship

Bliss Chang, an undergraduate majoring in Biomedical Engineering with a minor in Biology, has been awarded the 2013 Beckman Scholarship to work in Jamil Saad's lab for one year starting this summer. He was selected as the only Beckman scholar at UAB this year.

"I am excited to have two Beckman Scholars in my lab at the same time [in addition to Timothy Fernandez who received the 2012 Beckman Scholarship]. Having two Beckman Scholars in the same lab at the same time is a very rare case in the US since it is considered an extremely competitive award," explains Dr. Saad.



Fernandez to Speak at Beckman Symposium



Timothy Fernandez, a Beckman Scholar in Dr. Jamil Saad's lab, will give a 30-minute presentation on his research at the Beckman Foundation's Scholars Symposium to be held July 25-27 at the Beckman Center of the National Academy of Sciences and Engineering in Irvine, California.

A senior in the University Honors Program, Fernandez is one of six students chosen from the nationwide pool of Beckman Scholars to present his research at the symposium. During his time in Saad's lab, he has published three papers in professional journals and currently has a first author paper under review. He has given presentations at more than 15 conferences.

Just Published

Publications

Bedwell, D

Keeling, K., Wang, D., Du, M., Dai, Y., Murugesan, S., Chenna, B., Clark, J.; Belakhov, V., Kandasamy, J., Velu, S., Baasov, T., and Bedwell, D. 2013. Attenuation of Nonsense-Mediated mRNA Decay Enhances In Vivo Nonsense Suppression. *PLoS One* 8: e60478 1-11.

Briles, DE

Vale AM, Kapoor P, Skibinski G, Elgavish A, Mahmoud T, Zemlin C, Zemlin M, Burrows PD, Nobrega A, Kearney JF, Briles DE, Schroeder HW Jr. 2013. The link between antibodies to OxLDL and natural protection against pneumococci depends on *D_H* gene conservation. *J Exp Med*. [Epub ahead of print] PMID: PMC3646500.

Burrows, PD

Liu J, Lange MD, Hong SY, Xie W, Xu K, Huang L, Yu Y, Ehrhardt GR, Zemlin M, Burrows PD, Su K, Carter RH, Zhang Z. 2013. [Regulation of VH Replacement by B Cell Receptor-Mediated Signaling in Human Immature B Cells.](#) *J Immunol* 190(11):5559-66. doi: 10.4049/jimmunol.1102503. [Epub ahead of print] PMID: 23630348.

Vale AM, Kapoor P, Skibinski GA, Elgavish A, Mahmoud T, Zemlin C, Zemlin M, Burrows PD, Nobrega A, Kearney JF, Briles DE, Schroeder HW Jr. 2013. [The link between antibodies to OxLDL and natural protection against pneumococci depends on DH gene conservation.](#) *J Exp Med*. [Epub ahead of print] PMID: PMC3646500.

Kearney, J

Yockey, L.J., Demehri, S., Turkoz, M., Turkoz, A., Ahern, P.P., Jassim, O., Manivasagam, S., Kearney, J., Gordon, J.J., Kopan, R. 2013. The absence of a

microbiota enhances Tslp expression in mice with defective skin barrier but does not affect the severity of their allergic inflammation. *J. Invest. Dermatol* [Epub ahead of print] PMID: 23698100.

Vale AM, Kapoor P, Skibinski G, Elgavish A, Mahmoud T, Zemlin C, Zemlin M, Burrows PD, Nobrega A, Kearney JF, Briles DE, Schroeder HW Jr. 2013. The link between antibodies to OxLDL and natural protection against pneumococci depends on *D_H* gene conservation. *J Exp Med*. [Epub ahead of print] PMID: PMC3646500.

Keeling, K

Keeling, K., Wang, D., Du, M., Dai, Y., Murugesan, S., Chenna, B., Clark, J.; Belakhov, V., Kandasamy, J., Velu, S., Baasov, T., and Bedwell, D. 2013. Attenuation of Nonsense-Mediated mRNA Decay Enhances In Vivo Nonsense Suppression. *PLoS One* 8: e60478 1-11.

Luo, M

Cox, Robert, Green, T.J., Purushotham, S., Deivanayagam, C., Bedwell, G.J., Prevelige, P.E., Luo, M. Structural and Functional Characterization of the Mumps Virus Phosphoprotein. 2013. *J. Virol.* 87(13): 7558-7568

Michalek, SM

Beurel, E., Kaidanovich-Beilin, O., Yeh, W-I., Song, L., Palomo, V., Michalek, S.M., Woodgett, J.R., Harrington, L.E., Eldar-Finkelman, H., and Jope, R.S. 2013. Regulation of Th1 cells and experimental autoimmune encephalomyelitis by glycogen synthase kinase-3. *J. Immunol* 190:5000-5011. PMID: NIHMSID#459713.

Novak, J

Nakata, J., Suzuki, Y., Suzuki, H., Sato, D., Kano, T., Horikoshi, S., Novak, J., Tomino, Y. 2013. Experimental evidence of cell dissemination playing a role

in pathogenesis of IgA nephropathy in multiple lymphoid organs. *Nephrol Dial Transplant* 28, 320-326. PMID: 23136213

Novak J, Renfrow MB, Gharavi AG, Julian BA. 2013. Pathogenesis of immunoglobulin A

Prevelige, PE

Cox, Robert, Green, T.J., Purushotham, S., Deivanayagam, C., Bedwell, G.J., Prevelige, P.E., Luo, M. Structural and Functional Characterization of the Mumps Virus Phosphoprotein. 2013. *J. Virol.* 87(13): 7558-7568

Walter, MR

Deshpande A, Putcha BD, Kuruganti S, Walter MR. 2013. Kinetic analysis of cytokine-mediated receptor assembly using engineered FC heterodimers. *Protein Sci* doi: 10.1002/pro.2285. [Epub ahead of print] PubMed PMID: 23703950.

Yother, J

Oliver MB, Jones C, Larson TR, Calix JJ, Zartler ER, Yother J, and Nahm MH. 2013. *Streptococcus pneumoniae* serotype 11D has a bi-specific glycosyltransferase and expresses two different capsular polysaccharide repeating units. *J. Biol. Chem.* [Epub ahead of print] PubMed PMID: 23737526

Grant Awards

Justement, "Generation of Conditionally Targeted TLT2-Deficient Mice for Analysis of TLT2 Function During Innate Immune and Acute Inflammatory Responses," UAB Immunology, Autoimmunity and Transplantation (IAT)

Michael E Niederweis, Ph.D., "Targeting Siderophore Secretion, An Achilles Heel of *Mycobacterium tuberculosis*," Alabama Drug Discovery Alliance (ADDA)

Around Campus and About Town

Exercise at Railroad Park



– continuing events

Zumba, Yoga, Happy Feet,

Crunk Fitness, Bootcamp

Check out the schedule of events for times.

Free Admission

Jazz in the Park!

Railroad Park Amphitheatre

July 4, 2013

6:00 pm – 9:00 pm

Free Admission



Drum Circle Sundays at Railroad Park!

17th Street Plaza Section B

July 7, 2013

4:00 pm - 6:00 pm

Get Rhythm and Railroad Park present Drum Circle Sunday's hosted by John Scalici. Guests are encouraged to bring their own drum or rhythm instrument.

For more information please visit www.getrhythmprograms.com.

Free Admission

Nite Market @ Alys Stephens Center

July 20, 2013

4:00 pm – 7:30 pm

Performance of Susan Werner's "Hayseed Project," produce from local farmers' mar-

kets, live music from Jason Bailey Trio, food from Jim 'N Nick's Bar-B-Q and craft brews from Good People Brewing Co. Attend talks by local craft brewers, coffee roasters and innovative growers; and play games.

Admission Charged

Patty McDonald @ ArtPlay

1006 19th St. South

August 29, 2013

7:00 pm – 10:00 pm

Young Concert Artists presents cellist Cicely Parnas, granddaughter of illustrious cellist Leslie Parnas. She began playing cello at age four and made her concert debut at 11 with the Woodstock Chamber Orchestra.

Admission Charged

Paul Thorn @ WorkPlay Theater

September 6, 2013

8:00 pm – 10:00 pm

It has been said that a Paul Thorn concert is like "taking a 6-pack to church," as evidenced by his song "Mission Temple Fireworks Stand." **Admission Charged**

Dino Discovery at the Birmingham Zoo

March 16 - July 21, 2013

Journey through time to a pre-historic land, Dino Discovery, at the Birmingham Zoo. Go

on an expedition down a trail filled with 15 life-sized, animatronic dinosaurs, some at heights of almost 20 feet. Explore, search for fossils in the Dino Dig and get your picture taken with a dinosaur. **Admission Charged**

Milestones Walking Tour

April 6 - September 28, 2013

10:00 AM

An hour-long tour allows visitors to experience the culture and history of Birmingham's Historic Civil Rights and Fourth Avenue Business Districts. **Free Admission**

Pepper Place Saturday Market

April 13 - December 14, 2013



The region's farming families grow vegetables and

flowers, bake breads and cookies, cakes and pies, tend the bees, and drive into the Lakeview District of Birmingham to sell the fruits of their labors. In addition to farmers, bakers and beekeepers you can enjoy local musicians on two stages while sipping a fresh cup of coffee or enjoying a light breakfast. There is a cooking demonstration at 9:00 am every Saturday morning by Birmingham's finest chefs. **Free Admission**