



# UAB DEPARTMENT OF MICROBIOLOGY

Micro Newsletter | Winter 2012

## Faculty and Trainees Attend Retreat



The 21st Microbiology Research Retreat was held on November 9-11, 2012, at Sandestin Golf & Beach Resort, Hotel LeCiel, Sandestin, Florida. The 111 attendees took advantage of the opportunity to share their diverse experiences and knowledge in the relaxing atmosphere of the Gulf Coast.

Pete Burrows, director of the Immunology Graduate Theme says, “The retreat provides an informal setting for students and postdocs to present their research and discuss it with the Microbiology faculty.”

The retreat began with a welcome speech from the new department chair, Dr. Frances Lund. Formerly at the University of Rochester Medical Center in New York, Lund brings with her a desire to broaden the Microbiology Department’s tradition of collaborative science.

The retreat schedule, filled with student and faculty presentations, also included an opportunity to honor a distinguished Microbiology Department alumnus, Sean Whelan. As a postdoc in Gail

Wertz’s lab, Whelan focused on vesicular stomatitis virus (VSV). He is now a faculty member in the Department of Microbiology and Immunobiology at Harvard Medical School.

The three-day retreat concluded with the presentation of awards. Trainees receiving awards at the retreat include:

**Most Outstanding Oral Presentation - Postdoc**  
Jiri Vlach

**Most Outstanding Poster - Graduate Student**  
Kimberly Thomas  
Brandon Hatcher

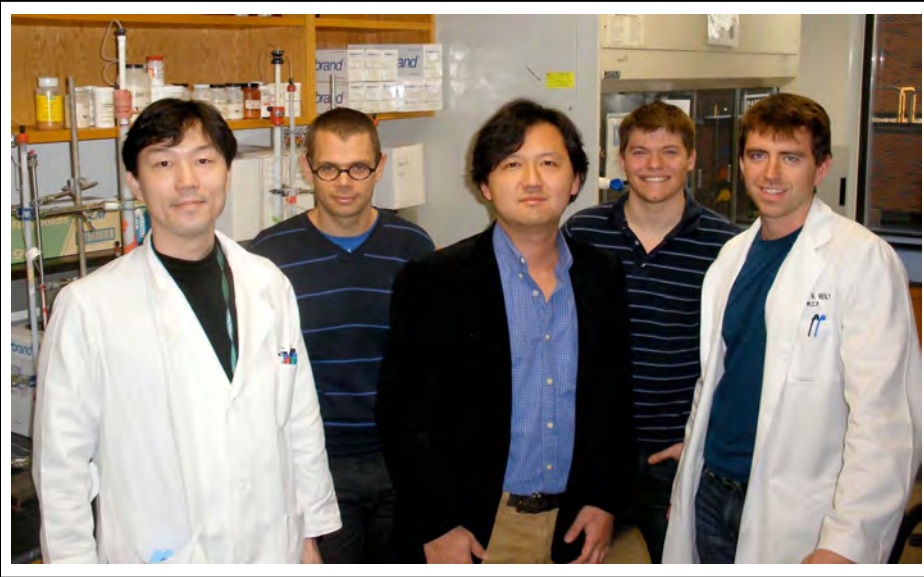
**Most Outstanding Poster - New Investigator**  
Allison Brady  
Tyler Stewart

**Most Outstanding Oral Presentation - Graduate Student**  
Haley Echlin  
Jeffrey Vahrenkamp

**Outstanding Oral Presentation - New Investigator**  
Ashley Burg  
Gregory Bedwell  
Kathryn Doornbos

# Welcome! .....

## Novak's Lab Welcomes Four and Says Farewell to One



*From left to right: Hirouki Ueda, MD, PhD (visiting scientist since 4-2012), Nicolas Maillard, MD (visiting scientist since 11-2012), Koshi Yamada, MD, PhD (departing after spending almost four years at UAB), Tyler Stewart (PhD student, jointly mentored by Drs. Renfrow and Novak since summer 2012), Colin Reily, PhD (post-doctoral fellow since 10-2012)*

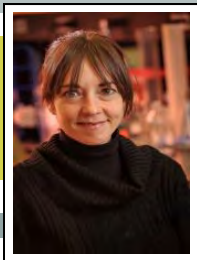
## Chair's Office Welcomes Julie Decker

Julie Decker joined our Department Friday, February 1st. Her first priorities will be helping to get space ready for recruits, managing the renovation logistics for the department, getting the shared equipment rooms up and running, helping with the recruiting process and helping new recruits get their labs up and running (equipment, paperwork, etc). Other responsibilities will include space survey and facility management for the Department. This is a new position to the Department, and we expect that the position will grow and evolve over time as the needs of the Department change.

Decker has worked for many years with Drs. Beatrice Hahn and George Shaw, and we are excited to have her joining our team as she has a scientific background and will be a tremendous resource for the Department. Please stop by and greet her. Her desk is located in suite 278 next to Amy.



## New Hire.....



### **New Faculty Hire**

Assistant Professor Beatriz Leon, Ph.D., comes to UAB from the University of Rochester, Rochester, New York.

## Seminars.....

### **January 22**

Dr. Marvin Whiteley, Associate Professor, Department of Molecular Genetics and Microbiology, University of Texas, "Microbial Facebook: Probing Bacterial Social Networks During Disease."

### **January 29**

Dr. Jim McClintock, Department of Biology, UAB, will discuss "The Ecological Impacts of Climate Change on the Antarctica Peninsula."

### **February 12**

FACULTY CANDIDATE, Paul W. Denton, Ph.D., University of North Carolina Chapel Hill.

### **February 19**

Dr. Colin Parrish, Baker Institute for Animal Health, College of Veterinary Medicine, Cornell University, "The Host Range and Variation of Parvoviruses Leading to Epidemic Diseases in New Hosts - The Role of Capsid Variation and Specific Receptor Binding."

### **February 26**

POSTPONED

### **March 5**

Dr. Douglas Lyles, Department of Biochemistry, Wake Forest School of Medicine, will discuss Enveloped RNA Viruses.

### **March 12**

Dr. Elizabeth Wright, Division of Pediatric Infectious Diseases, Emory University, will discuss Structural Virology.

### **March 19**

Dr. Bryce Nickels, Waksman Institute of Microbiology, Rutgers University, will discuss Mechanism of Transcription, Regulation of Bacterial Gene Expression.

### **March 26**

Dr. Susan Pierce, NIH, NIAID, will discuss B Cell Signaling and Anti-Malarial Responses.

## Noteworthy.....

### Yother Is SOM Diversity Nominee

Dr. Janet Yother has been selected as the School of Medicine faculty nominee for the UAB Diversity award. This award was established to recognize the significant achievements of faculty, staff and students who have worked to develop a more culturally diverse, competent and inclusive university community.



Yother was nominated by her students, both past and present, as the faculty member who has gone above and beyond the call of duty to promote diversity within the department, graduate school and university. Yother was then selected by a panel convened by the Dean to be the nominee from the School of Medicine.

Yother's application packet included a complete description of the significance and impact of her work to promote diversity in science education and training. The letters of support that her students provided were outstanding and speak volumes to her ability to both welcome minorities into science and mentor them to become successful scientists in their own right.

The UAB Diversity Awards Selection committee will pick from the finalists across the entire university and the award recipients will be announced at a public ceremony during UAB Community Week in January.

### Frontiers in Structural Biology of Membrane Proteins (An NIGMS-sponsored symposium)

On April 4-6, UAB will host a three-day, international symposium on the structural biology of membrane proteins.

**ABC transporters** will be emphasized at the symposium but other membrane protein topics will also be presented. Symposium speakers will include junior and senior scientists involved in computer simulations, x-ray crystallography, NMR, cryoEM tomography and physical chemistry of membrane proteins. Approximately half of the invited speakers will be computer simulators and half will be in-solution experimentalists. Facilities are available for poster presentations and abstracts are encouraged. Several junior platform speakers—expenses to be covered—will be chosen from the received abstracts.

For more information, go to: <http://www.uab.edu/membraneproteins/>.

Mark Walter is a Co-PI on a NIH R01 grant that received a perfect score (10). This is outstanding (and very, very rare). The project title is Prevention of Primary HCMV Infection by Vaccinating against HCMV-Encoded IL-10.

Peter Prevelige will be profiled in the Scientists column of the February 2013 issue *BioTechniques*. Read the latest *BioTechniques* content at <http://www.biotechniques.com>.

## Student Spotlight



Congratulations to Leland Black (graduate student in Janusz Kabarowski's lab) who received 3rd prize for her poster presentation at the 23rd Annual UAB Vascular Biology & Hypertension Symposium (October 8-9, 2012). Leland's poster, one of 34 presented by graduate students and postdocs at this symposium, was entitled "HDL-Mediated Modulation of Autoimmunity in Normolipidemic Lupus-prone mice."

*Leland Black (right) is pictured with Dr. Suzanne Oparil, M.D., Director of the Vascular Biology & Hypertension Program.*

## Retirements

Debbie Sirles and Doug Hamm both retired in December after 25 years of dedicated service.

Sirles worked with faculty, students and Graduate School administrators in her position as CMB Program Manager and later Microbiology Department Program Manager. Officially she monitored schedules, reported grades and kept graduate students on track. And, unofficially, she served as a friend for students who felt homesick or needed advice about talking with a landlord or recommendations for an inexpensive restaurant. After fighting downtown traffic for so many years, Sirles is now looking forward to spending more time with her granddaughter, Isabella.



Hamm came to UAB in 1989, after graduating from Auburn University with a BA in laboratory technology. He began working as a research assistant in the Department of Genetics and later moved to Dr. Janet Yother's lab in the Microbiology Department. Hamm worked closely with faculty, lab members as well as other UAB departments and outside vendors. In Dr. Yother's lab, he took on extra responsibilities maintaining equipment and assisting with experiments. Retirement doesn't mean a leisurely lifestyle for Hamm. He is now working as Southeast Territory Sales Manager at Photon Technology International, Inc.

## Just Published

### Barnum

Hu, X., S. Tomlinson, and S.R. Barnum. 2012. Targeted inhibition of complement using complement receptor 2-conjugated inhibitors attenuates EAE. *Neurosci Lett* 531:35-39.

### Briles

Mukerji, R., S. Mirza, A.M. Roche, R.W. Widener, C.M. Croney, D.K. Rhee, J.N. Weiser, A.J. Szalai, and D.E. Briles. 2012. Pneumococcal surface protein a inhibits complement deposition on the pneumococcal surface by competing with the binding of C-reactive protein to cell-surface phosphocholine. *J Immunol* 189:5327-5335.

### Chaplin

Alberti, M.O., J.S. Deshane, D.D. Chaplin, L. Pereboeva, D.T. Curiel, and J.C. Roth. 2012. A myeloid cell-binding adenovirus efficiently targets gene transfer to the lung and escapes liver tropism. *Gene Ther.*

### Dokland

Christie, G.E., and T. Dokland. 2012. Pirates of the caudovirales. *Virology* 434:210-221.

Dearborn, A.D., and T. Dokland. 2012. Mobilization of pathogenicity islands by *Staphylococcus aureus* strain Newman bacteriophages. *Bacteriophage* 2:70-78.

Spilman, M.S., P.K. Damle, A.D. Dearborn, C.M. Rodenburg, J.R. Chang, E.A. Wall, G.E. Christie, and T. Dokland. 2012. Assembly of bacteriophage 80 $\alpha$  capsids in a *Staphylococcus aureus* expression system. *Virology* 434:242-250.

### Frolov

Atasheva, S., D.Y. Kim, M. Akhrymuk, D.G. Morgan, E.I. Frolova, and I. Frolov. 2012. Pseudoinfectious Venezuelan equine encephalitis virus. A new means of alphavirus attenuation. *J Virol.*

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Foy, N.J., M. Akhrymuk, I. Akhrymuk, S. Atasheva, A.B. Waffo, I. Frolov, and E.I. Frolova. 2012. Hypervariable domains of nsP3 proteins of the New World and the Old World alphaviruses mediate formation of distinct, virus-specific protein complexes. *J Virol.*

### Justement

Myers, R.C., R.G. King, R.H. Carter, and L.B. Justement. 2012. Lymphotoxin  $\alpha(1)$   $\beta(2)$  expression on B cells is required for follicular dendritic cell activation during the germinal center response. *Eur J Immunol*

### Klug

Kojima, K., G.J. Bowersock, C. Kojima, C.A. Klug, W.E. Grizzle, and J.A. Mobley. 2012. Validation of a robust proteomic analysis carried out on formalin-fixed paraffin-embedded tissues of the pancreas obtained from mouse and human. *Proteomics* 12:3393-3402.

### Mestecky

Mestecky, J., M. Raska, B.A. Julian, A.G. Gharavi, M.B. Renfrow, Z. Moldoveanu, L. Novak, K. Matousovic, and J. Novak. 2012. IgA Nephropathy: Molecular Mechanisms of the Disease. *Annu Rev Pathol*

### Michalek

Ashtekar, A.R., J. Katz, Q. Xu, and S.M. Michalek. 2012. A Mucosal Subunit Vaccine Protects against Lethal Respiratory Infection with *Francisella tularensis* LVS. *PLoS One* 7:e50460.

Gaddis, D.E., C.L. Maynard, C.T. Weaver, S.M. Michalek, and J. Katz. 2012. Role of TLR2-dependent IL-10 production in the inhibition of the initial IFN- $\gamma$  T cell response to *Porphyromonas gingivalis*. *J Leukoc Biol.* 93:21-31.

### Moldoveanu

Wei, Q., Z. Moldoveanu, W-Q. Huang, R.C. Alexander, P.A. Goepfert, and J. Mestecky. 2012. Comparative Evaluation of HIV-1 Neutralization in External Secretions and Sera of HIV-1 Infected Women. *The Open AIDS Journal*, 6: 293-302.

Eison, T.M., M.C. Hastings, Z. Moldoveanu, J.T. Sanders, L. Gaber, P.D. Walker, K.K. Lau, B.A. Julian, J. Novak, and R.J. Wyatt. 2012. Association of IgG co-deposition with serum levels of galactose-deficient IgA1 in pediatric IgA nephropathy. *Clin Nephrol* 78:465-469.

Mestecky, J., M. Raska, B.A. Julian, A.G. Gharavi, M.B. Renfrow, Z. Moldoveanu, L. Novak, K. Matousovic, and J. Novak. 2012. IgA Nephropathy: Molecular Mechanisms of the Disease. *Annu Rev Pathol.*

### Novak

Berthoux, F., H. Suzuki, L. Thibaudin, H. Yanagawa, N. Maillard, C. Mariat, Y. Tomino, B.A. Julian, and J. Novak. 2012. Autoantibodies targeting galactose-deficient IgA1 associate with progression of IgA nephropathy. *J Am Soc Nephrol* 23:1579-1587.

Eison, T.M., M.C. Hastings, Z. Moldoveanu, J.T. Sanders, L. Gaber, P.D. Walker, K.K. Lau, B.A. Julian, J. Novak, and R.J. Wyatt. 2012. Association of IgG co-deposition with serum levels of galactose-deficient IgA1 in pediatric IgA nephropathy. *Clin Nephrol* 78:465-469.

Mestecky, J., M. Raska, B.A. Julian, A.G. Gharavi, M.B. Renfrow, Z. Moldoveanu, L. Novak, K. Matousovic, and J. Novak. 2012. IgA Nephropathy: Molecular Mechanisms of the Disease. *Annu Rev Pathol.*

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Nakata, J., Y. Suzuki, H. Suzuki, D. Sato, T. Kano, S. Horikoshi, J. Novak, and Y. Tomino. 2012. Experimental evidence of cell dissemination playing a role in pathogenesis of IgA nephropathy in multiple lymphoid organs. *Nephrol Dial Transplant*.

#### Prevelige

Anup Kale, Yuping Bao, Ziyou Zhou, Peter E Prevelige and Arunava Gupta. 2013. Directed self-assembly of CdS quantum dots on bacteriophage P22 coat protein templates. *Nanotechnology* 24:045603.

Lucon, J., S. Qazi, M. Uchida, G.J. Bedwell, B. LaFrance, P.E. Prevelige, and T. Douglas. 2012. Use of the interior cavity of the P22 capsid for site-specific initiation of atom-transfer radical polymerization with high-density cargo loading. *Nat Chem* 4:781-788.

O'Neil, A., P.E. Prevelige, G. Basu, and T. Douglas. 2012. Co-confinement of Fluorescent Proteins: Spatially Enforced Communication of GFP and mCherry Encapsulated within the P22 Capsid. *Biomacromolecules* 13:3902-3907.

#### Zajac

Cox, M.A., S.M. Kahan, and A.J. Zajac. 2013. Anti-viral CD8 T cells and the cytokines that they love. *Virology* 435:157-169.

## Grant Awards

Scott Barnum, "Analysis of AGN957 in a Mouse Model of Experimental Cerebral Malaria", ALLERGAN, INC.

Scott Barnum, "The role of the complement in ALS," NIH

Frances E. Lund, "Treating B cell-derived neoplasm by targeting the ectoenzyme CD38: A regulator of the NAD metabolic pathway" ADDA (Alabama Drug Discovery Alliance)

Frances E. Lund, "B Cells in Health and Disease," Emory University

Jamil Saad, "Structural basis for Fas-mediated apoptosis and mechanism of inhibition" UAB Comprehensive Cancer Center

Hubert Tse, "Beta Cell Survival and Function," UCDC (UAB Comprehensive Diabetes Center)

Sunnie Thompson, "Development of an anticancer therapeutic against ribosomal protein S25" ADDA (Alabama Drug Discovery Alliance)

Melissa Marie Walker, "The role of PcpA in the mechanism of virulence and protective immunity," NIH

## Around Campus and About Town

### Birmingham Home and Garden Show February 14 – 17

Birmingham Jefferson Convention Complex  
(BJCC)

Thursday, February 14            11:00 am - 9:00 pm

Friday, February 15                10:00 am - 9:00 pm

Saturday, February 16            10:00 am - 9:00 pm

Sunday, February 17               11:00 am - 6:00 pm

Ticket Prices: Adults \$10.00; Adults (Online)

\$7.00, Children 6-12 \$3.00; Children under 6 Free

### Gallagher's 'Last Smash' Tour February 16

8:00 pm – 10:00 pm

Alys Stephens Center

If you like to see smashed food, plan to attend Gallagher's "Last Smash." The Jemison Concert Hall will be covered in plastic for the outlandishly entertaining event. *Admission charged.*

Submit information for the newsletter via email to Ella Robinson at [erobnson@uab.edu](mailto:erobnson@uab.edu).

Check out our NEW website!

[www.uab.edu/microbiology](http://www.uab.edu/microbiology)