WINTER, 2006

THE MICRO-SCOOP

Newsletter of the University of Maryland School of Medicine
Department of Microbiology & Immunology

OUR CHANGING DEPARTMENT

"Change is the nature of the universe." — The I Ching

There have been some important changes to our department in recent months:

First, effective July 1, 2005, the graduate program is now part of the new **Graduate Program in Life Sciences (GPILS).** The goal of this reorganization is to improve the quality of graduate education at the School of Medicine. As part of this process, some administrative functions have been centralized, and changes have been made to the curriculum to avoid redundancy in the Graduate School.

The Program in Microbiology and Immunology has been renamed and is now known as the Program in Molecular Microbiology and Immunology. The other Programs under the GPILS umbrella are Biochemistry, Molecular Medicine, Neuroscience, and a Cluster in Public Health (Epidemiology, Physical Therapy and Rehabilitation, Gerontology, and Toxicology). GPILS is overseen by **Dr. Margaret McCarthy**, Assistant Dean for Graduate Studies and Professor in the Department of Neurophysiology.

Although the Molecular Microbiology and Immunology Program technically is no longer part of the Department, most of us will not notice many changes. However, one important modification of the curriculum will be effective in the fall of 2006. The courses in Cell Biology, Biochemistry, and Molecular Biology, which have been required courses for first-year students in the Program, have been reorganized. Students will now take a course entitled "Mechanisms in Biomedical Sciences: from Genes to Disease." This course will consist of four sections: Molecular Biology and Genetics; Molecular Structure and Function; Cellular Structure and Function; and Hypothesis Testing and Experimental Design. Students will take the course over two semesters.

Second, **Dr. Nicholas Carbonetti** assumed his new role as Program Director on July 1, 2005. Dr. Carbonetti succeeds **Dr. Harry Mobley** (who became chair of the Department of Microbiology and

IN THIS ISSUE:

Immunology at the University of Michigan Medical School in 2004) and our Department Chair, **Dr. Jan Cerny** (who was Program Director during the interim).

Dr. Carbonetti joined the faculty of the Department of Microbiology and Immunology as an Assistant Professor in 1991 and is now Associate Professor with tenure. He has been course director for the Bacterial Pathogenesis course since 1994.

"I am really enjoying the experience of interacting with students, faculty, [Program Coordinator] June Green, and the GPILS administration in the reorganized program, helping to improve the Program as it evolves within the new structure," says Dr. Carbonetti.

SPOTLIGHT ON FACULTY: DR. WENDY DAVIDSON

Dr. Wendy Davidson earned her PhD in Immunology at the Australian National University around the time Nobel laureates Peter Doherty and Rolph Zinkernagel were members of the Immunology Department. She went on to spend nineteen years at the NIH working first at the National Institute of Allergy and Infectious Diseases (NIAID) and then at the National Cancer Institute. Prior to joining our department, she spent seven years at the American Red Cross (ARC) Jerome Holland Labs and was also a faculty member in the George Washington (GW) University Institute for Biomedical Sciences. This semester, Dr. Davidson is lecturing on humoral autoimmunity in the graduate Immunology course and "How to write a manuscript" as part of the Writing Center's Scholarly Writing Program. She is the proud softball mom of two college age kids and also loves to dance. Her lab staff includes one postdoctoral fellow, **Partha Mukhopadhyay**.

A major theme of her research program is to better understand mechanisms of malignant transformation of B cells in the context of autoimmunity. Lymphoma is the 5th most prevalent cancer in the U.S., and its incidence is increasing. Significant risk factors in the development of B cell lymphoma are pre-existing systemic autoimmune disease and/or chronic infection with certain bacteria and viruses. Among patients with autoimmune disease, those with Sjögren's syndrome and autoimmune lymphoproliferative disease (ALPS) have a particularly high risk of B cell lymphoma, but lymphoma incidence also is increased in patients with rheumatoid arthritis, Hashimoto's thyroiditis, and SLE. Although there is general consensus for a strong linkage between autoimmune diseases involving chronic lymphoproliferation and B cell lymphoma, relatively little is known about the mechanisms involved.

ALPS is an autoimmune disease caused by germline mutations in genes encoding the cell death receptor/ligand pair, FAS/FASL. The risk of Hodgkin and non-Hodgkin lymphoma in patients with ALPS is 51 and 14 times greater, respectively, than in the general population. Dr. Davidson's research has shown that mice with inactivating mutations in *Fas* (*lpr*) and *Fasl* (*gld*) also develop B cell lymphomas as they age. Tumor incidence is very high in BALB/c mice deficient in FasL, with >60% of

animals developing B cell lymphomas by one year of age. These tumors are mostly plasmacytoid, are arrested at an early stage of plasma cell differentiation, and have a distinguishing gene expression profile. Notably, most of the tumors produce autoantibodies, suggesting that chronically activated autoreactive B cells may be particularly susceptible to malignant transformation.

Dr. Davidson's lab has also identified a subset of activated B cells that accumulates in FasL-deficient mice prior to lymphoma development and closely resembles the tumors in phenotype, stage of differentiation, and gene expression pattern. The similarities between the two populations imply that lymphomas derive from this activated population. Currently, they are using this model system to study the evolution of lymphomas at the molecular level. Using gene expression profiling, they identified a number of genes that are selectively overexpressed in both tumors and tumor precursors but not in normal B cells, and may confer a survival advantage in the two populations. These include cell death inhibitors and B cell growth and survival factors such as IL-10 and BAFF. They also found extremely high levels of Hepcidin, a molecule essential for normal iron metabolism that is not normally expressed in lymphocytes. Currently, they are investigating the importance of autocrine IL-10 and BAFF in tumor and tumor precursor survival and are further exploring the implications of overexpression of Hepcidin in B lymphocytes. They also are investigating phospho-kinase levels in the two populations before and after stimulation to identify potential abnormalities in the regulation of pro-survival signaling pathways. Their long-term goals are to identify molecular targets for therapeutic intervention. By specifically targeting chronically activated autoreactive B cells, it may be possible to intervene in autoimmune disease and also prevent the malignant evolution of pre-lymphomatous populations. Through a greater understanding of molecular signaling in the lymphomas, Dr. Davidson hopes to be able to develop improved therapies for early plasma cell tumors.

SCIENCE IN THE PUBLIC INTEREST: MALARIA VACCINE TRIALS

Researchers at the Center for Vaccine Development (CVD) have been awarded $4.9 million from the National Institutes of Health to test the safety and effectiveness of a new malaria vaccine in children. In partnership with the University of Bamako in Mali, West Africa, the researchers will test the vaccine in children in Mali over the next five years. The malaria vaccine being tested was developed by the Walter Reed Army Institute of Research and GlaxoSmithKline Biologicals with support from the U.S. Agency for International Development.

"Malaria is a mosquito-borne parasitic disease that kills more than 5,000 people every day, 90 percent of them children under the age of 5 in Africa," says **Christopher Plowe, MD, MPH**, a secondary faculty member in our department and chief of the malaria section at the CVD. "The malaria problem is getting worse because the parasites are developing resistance to the drugs we use to treat the infection. That's why it's so important to develop a safe, effective vaccine."

The CVD has conducted two previous clinical trials in Africa to test malaria vaccines in healthy adults, working closely with the team of Professor Ogobara Doumbo, Director of the Malaria Research and Training Center at the University of

Bamako. The results of these studies have paved the way for the first trials of these vaccines in children.

Early next year, Dr. Plowe, Professor Doumbo and their colleagues at the CVD and the University of Bamako plan to start the first small trial in less than 100 children in the town of Bandiagara in northeast Mali. There, traditional healers used to use incantations and herbs to treat severe malaria but have been persuaded in recent years to refer children with malaria symptoms to the local district hospital. The children are treated with antimalarial medications and 90-95 percent of them survive the deadly illness, but continue to get sick from malaria repeatedly throughout their childhood. "Partial immunity to malaria does develop naturally." says Plowe, "We hope that a vaccine will speed up this process, so that young children can have protective immunity without having to be at risk of dying from malaria for the first several years of life."

If the first trial demonstrates that the vaccine is safe in children and that it can stimulate antibody responses, a larger trial with several hundred children will be conducted to find out whether the vaccine can effectively prevent malaria. Plowe, Doumbo and their team will also investigate the ways the vaccine interacts with malaria parasites and the children's immune systems. "There are many different strains or clones of malaria, and the vaccine is based on just one of these." says Plowe. "We don't know if the vaccine will prevent all types of malaria strains or just those that are genetically similar to the vaccine strain." Detailed molecular analyses of the malaria parasites that infect people before and after immunization will be done in laboratories both Mali and in Baltimore. "We certainly hope that this vaccine will be highly effective and long-lasting," says Plowe. "But if the parasite is able to outsmart us through genetic mutation, as it has done to develop resistance to drugs, these molecular studies may help us to beat the malaria parasite at its own game."

GRANTS AND AWARDS

Dr. Nicholas Carbonetti recently received an NIH R01 AI063080 "Role of pertussis toxin in *Bordetella pertussis* infection."

Dr. James Kaper received a competitive renewal of his *E. coli* O157:H7 R01 grant, which started Sept. 30, 2005.

The Pauza lab recently had a provisional patent issued entitled "Ex Vivo Expansion and Differentiation of Gamma/Delta T cells for Direct Tumor Cytotoxicity and For Targeted Delivery of Therapeutic Compounds." **C David Pauza**, Deetz C, **Hebbeler AM**, Cairo C. Patent No. 4115-239-PRV. Filed: November 22, 2005. Additionally, Dr. Pauza was awarded an R01 grant from the National Cancer Institute to study gamma/delta T cell surveillance of B lymphoma in AIDS.

MEETINGS AND POSTERS

Uzma Alam (Azad Lab) presented a poster at the Molecular & Immunological Approaches to Vaccine Design meeting at Cold Spring Harbor, for which she received a travel award (December). She also presented at the 54th Annual American Society of Tropical Medicine and Hygiene (December) where she received a Young Investigator Honorable Mention for her presentation.

Agnes Awomoyi (Vogel Lab) presented

posters in Irvine, CA, at The National Academies 3rd Keck Futures Initiative, The Genomic Revolution: Implications for Treatment and Control of Infectious Disease (November); and at the 46th Annual Short Course on Medical and Experimental Mammalian Genetics in Bar Harbor, ME, in July.

Rebecca Brady and **Sandy Jacobsen** (Shirtliff Lab), **Jenn Smart** (Kaper Lab), and **Chelsea Lane** (Mobley Lab) presented posters at the American Society for Microbiology General Meeting in Atlanta, GA, in June.

Dr. Martin Flajnik was an invited speaker at a Study Section-equivalent in Naples Zoological Station (May), at the NIH (August), and the NCI (October). He also presented in Berlin at a meeting on antigen presentation (November), in Uppsala at a meeting on the evolution of innate immunity (December), and at UC-Irvine (January).

Andrew Hebbeler (Pauza Lab) presented posters at the International Meeting of the Institute of Human Virology here in Baltimore and at the 10th Annual International Conference on Malignancies in AIDS and Other Opportunistic Infections in Bethesda in September.

Dr. James Kaper recently was an invited speaker at the Federation of European Microbiology Societies in Villars-sur-Ollon in the Swiss Alps, the ASM meeting in Atlanta in June, the University of Guelph in Canada in September, and Virginia Polytechnic Institute in December.

Dr. Gregory Melikian was invited to give a talk at the Biophysical Society Meeting in Salt Lake City, UT, in February.

Quan M. Nhu and **Dr. Natalia Cuesta** (Vogel Lab) presented a poster at the 38th Annual Meeting of the Society for Leukocyte Biology in Oxford, England in September. Quan also presented at the UMB Annual Ophthalmology Resident Research Forum in June.

Francesca Okoye (Vogel Lab) attended the ACR/ARHP Annual Scientific Meeting in November and the Keystone Symposia on Lymphocyte Activation and Signaling in January.

Jenn Smart and **Ed Dudley** (Kaper Lab) presented at the Cold Spring Harbor Microbial Pathogenesis meeting in September.

PUBLICATIONS

Publications having department students as authors/co-authors are designated with a ♦. Bold face is used to identify department members.

Awomoyi AA, Charurat M, Marchant A, Miller EN, **Vogel SN**, Blackwell JM, McAdam KPWJ, and Newport MJ. Interleukin (IL) – 1β -511 polymorphism: Associated with tuberculosis and decreased LPS – induced IL-1β production after IFN-γ priming in a Gambian Population sample. *J. of Endotoxin Res*. 2005. 11:281-286.

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Responses to Phosphoantigen Stimulation by the Vgamma2Jgamma1.2 Subset. *Immunology* 2005. 115: 197-205.

♦ **Carbonetti NH**, Artamonova GV, **Andreasen C**, and **Bushar N.** Pertussis toxin and adenylate cyclase toxin provide a one-two punch for establishment of *Bordetella pertussis* infection of the respiratory tract. *Infect Immun*. 2005. 73:2698-2703.

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Melikyan GB, Barnard RJO, Abrahamyan LG, Mothes W, and Young JAT. Imaging individual retroviral fusion events: from hemifusion to pore formation and growth. *Proc. Natl. Acad. Sci. USA* 2005. 102:8728-8733.

Mulenga A, **Azad AF**. The molecular and biological analysis of ixodid ticks histamine release factors. *Exp Appl Acarol*. 2005;37(3-4):215-29.

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♦ **Nhu QM**, **Cuesta N**, and **Vogel SN**. Transcriptional Regulation of Lipopolysaccharide (LPS)-Induced Toll-like Receptor (TLR) Expression in Murine Macrophages: Role of Interferon Regulatory Factors-1 (IRF-1) and 2 (IRF-2). *J. of Endotoxin Res*., in press.

♦ **Porter-Kelley JM, Dinglasan RR, Alam U, Ndeta GA, Sacci JB Jr, Azad AF.** *Plasmodium yoelii*: axenic development of the parasite mosquito stages. *Exp Parasitol*. 2006. 112(2):99-108.

♦ **Sacci JB Jr, Alam U**, Douglas D, Lewis J, Tyrrell DL, **Azad AF**, Kneteman NM. *Plasmodium falciparum* infection and exoerythrocytic development in mice with chimeric human livers. *Int J Parasitol*. 2006 Jan 25 [Epub ahead of

print].

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SPOTLIGHT ON: NEW STUDENTS

Victor I. Ayala is a "U.S. Army brat" from

Puerto Rico. He received his BS in Biology from the University of Puerto Rico. He then worked in the Maryland biotechnology industry in vaccine development for four years while acquiring a Master's Degree in Biotechnology from Johns Hopkins University. He is happily married and has a son. He enjoys outdoor activities, trying new foods, and watching movies. He is currently working in Dr. Farber's lab on the role of antigen presenting cell toll-like receptors (TLR) in memory T-cell generation.

Leon De Masi hails from Philadelphia, PA, and is a 2005 graduate of Saint Joseph's University with a BS in Biology. During his junior and senior years he was an undergraduate research student in Dr. John Tudor's lab at Saint Joseph's, identifying *Bdellovibrio bacteriovorus* predation genes. His research interests are viral and bacterial pathogenesis. An avid baseball fan, he also spends much of his spare time watching movies, reading, and painting models.

Mark Lafferty was born in Seoul, Korea, and received a BSBA in Finance from Georgetown University and a MS in Biotechnology from Johns Hopkins University. Mark has spent the majority of his career working in the Healthcare Investment Banking Group at Deutsche Banc Alex. Brown, where he provided merger and acquisition advisory services for buyside, sellside and leveraged buyouts as well as executed numerous IPOs, equity follow-on offerings, high yield debt offerings and leveraged loans. Prior to joining the Microbiology and Immunology Department, Mark spent a year at UMB in the Biochemistry Department investigating the potential role of the transcription factor, TEF-1, in cardiac hypertrophy.

Marco Goicochea was born in Baltimore. He attended Washington & Lee University, where he earned a BS in biology. Upon graduation he returned to Baltimore where he worked for the UMB in the Veterinary Resources Department for two years as a veterinary technician / diagnostic laboratory technician. He later worked in the biotechnology field for one year in the field of Fc engineering and immunotherapeutic development. He is interested in the field of biodefense, specifically dealing with viral pathogens, though he's not picky. Marco currently resides in Baltimore with his wife Lindsay, who is a medical student at UMB. In his spare time he likes to…wait, he has no spare time.

Aakanksha Pant is an aspiring immunologist from the warm, sunny province of Muzaffarnagar, India. She obtained her undergraduate degree in Zoology from the University of Delhi, and her Master's Degree in Microbiology from G.B. Pant University of Agriculture and Technology in Uttaranchal. Although she has found Baltimore to be a little too cold for her liking, she has been able to make a comfortable home for herself within the UMBC campus, where she can usually be found reading, watching movies, and concocting delicious Indian dishes. For fun, Aakanksha enjoys studying and dissecting the finer points of Janeway's Immunobiology and Weaver's Molecular Biology.

Lani Lorenzo was born in Manila, Phillippines. She graduated from the University of the Philippines, Diliman, in 2004 with a BS in Molecular Biology & Biotechnology**.** After working for several different companies, she applied to the Microbiology and Immunology program at UMB. When she's not trying hard to study, she utilizes her time watching movies, hiking, and traveling. Coming from a country of beaches, she enjoys scuba diving a great deal, but her best day here was the day it snowed!

NEW ARRIVALS

Dr. Gregory Carey was born and raised on the island of Eleuthera in The Bahamas. He obtained a BS and PhD in Biochemistry from Virginia Commonwealth University and the Medical College of Virginia, respectively. He subsequently did one postdoctoral fellowship at the Guthrie Foundation and another in David Scott's lab at the ARC. He was appointed Scientist I in 2001 and is now an assistant professor in our department. Dr. Carey's research is focused on the mechanisms of membrane

IgM (mIgM) -mediated cell growth arrest and death in B cell lymphomas. While in the Scott lab, he established that inactivation of PI3K and its effectors were required for mIgM mediated-growth arrest and apoptosis and that membrane IgD failed to permanently inactivate this signaling enzyme. His lab is currently investigating the roles of both positively and negatively regulated PI3K/Akt effectors such as Akt and GSK3-b, respectively. His lab has also shown that Ras is a critical effector of primary B cell and B-lymphoma survival. He hopes to further explore the role of Ras as a critical initial target of the B cell receptor, a major determinant of B cell outcomes, and a major contributor to tumor survival, growth and proliferation. Dr. Carey will be lecturing on B and T cell signaling in the graduate school Immunology course this spring. He is married with two sons and enjoys playing his guitar, listening to music, traveling and cooking. He is also an amateur ham radio operator.

Ayanna Flegler (Azad Lab) is a third year biochemistry major at the University of Maryland, Baltimore County. She is studying malaria in the Azad lab as part of the Minority Access to Research Careers program. She plans to go to graduate school and continue her involvement in biomedical research. In her free time, between running gels, she models clothes for charity and is the treasurer for Women in Science and Engineering. She enjoys swimming, bowling, sports, and other recreational activities.

Dr. Joseph J. Gillespie (Azad Lab) is a native of southeastern Pennsylvania. He received a BS in Biology from Widener University (Chester, PA) in 1998, an MS in Entomology and Applied Ecology from the University of Delaware in 2001, and a PhD in Entomology from Texas A & M University in 2005. In 2006, he was hired as a research faculty member of the Virginia Bioinformatics Institute at Virginia Tech to study the bioinformatics of arthropod-borne bacterial diseases, specifically *Rickettsia* and *Coxiella*. He is spending this year in Dr. Azad's lab, learning the biology and systematics of *Rickettsia* species. He lives in Timonium, with his wife, cat, and iguana.

Dr. Aschah Keegan received her BS in Zoology from Duke University and her PhD in Immunology from the Johns Hopkins University Medical School. She subsequently did a postdoctoral fellowship at NIAID at the NIH and later joined the Immunology department at the ARC Holland Labs. She was director of the graduate Immunology program at GW for three years. Dr. Keegan's lab focuses on characterizing IL-4 receptor structure, regulation and signal transduction pathways. They seek to understand the significance of the potential for every cell in the body to respond to IL-4. **Dr. Jose Moreno**, a post-doc in the Keegan lab, investigates the IL-4 mediated inhibition of osteoclast development and bone resorption by mature cells. **Dr. Ann Kelly-Welch,** another postdoctoral fellow, uses an allergic lung inflammation model for asthma to explore the effect of IL-4 and IL-13 inhibitors and the role of these cytokines in the development of goblet cells. Her newest postdoctoral fellow, **Dr. Nicola Heller,** is studying the enhanced chemotaxis of eosinophils in response to IL-4 and IL-13. Dr. Keegan also has two graduate students. **Andrew Ford**, who came from GW, studies the mechanisms by which IL-4 production by macrophages

may contribute to inflammation. **Minjun Yu**, a second year student in our program, joined the Keegan lab last fall. Dr. Keegan is a Maryland native with three kids and a dog. She enjoys going to the beach and reading murder mysteries. Dr. Keegan will be lecturing on cytokine biology and Th1/Th2 polarization in the graduate school Immunology course this spring.

Dr. Joyce Sakamoto (Azad Lab) received her PhD at the University of California, Davis, in Plant Pathology, where she studied the tri-trophic interactions among twig beetles, Monterey pines, and a fungal pathogen of pines in native stands along the coast of California. She spent the last year studying the prevalence of bacterium *Wolbachia* in different species of bed bugs. At UMB, she will be looking at the bacterial-vector interactions. She says, "I'm from California, so forgive me if I look pale—I'm weak from lack of sun."

Dr. David Scott has long been interested in self versus non-self discrimination and his lab is currently focused on developing gene therapies for the treatment of hemophilia, diabetes and uveitis. Central to their studies is the use of transgenic mice expressing human HLA loci. He has always had a passion for science education and mentoring and along with Drs. Davidson and Keegan was instrumental in developing the Graduate Training Program in Immunology at GW. Dr. Scott will be teaching in the graduate Immunology course in spring 2007. The Scott lab includes: a postdoctoral fellow, **Dr. Yufei Jiang**; research associates, **Drs. Indira Carey and Wei Liang**; an MD/PhD student, **Jonathan Skupsky;** a PhD student from GW, **Yan Su;** and his lab manager, **Damaris Lopez**. He would gladly welcome another student. Dr. Scott is an avid cyclist and a new grandfather!

Dr. Mark Williams is interested in the mechanisms by which reactive oxygen and nitrogen species (ROS and RNS respectively) affect the immune system. His lab is currently focused on how oxygen radicals regulate activation of platelets and their interaction with cells in blood. Using knockout mice missing components of NADPH oxidase, they have shown that redox changes in the immune cell adaptor ADAP affect adhesion and integrin clustering on activated T cells. In related studies, they hope to use siRNA to knock down expression of the novel NADPH oxidase homologues DUOX1 and DUOX2, which both have a Ca^{2+} binding domain. These oxidases may be involved in regulating the response to intracellular calcium flux. Other future projects include investigating how hydrogen peroxide and superoxide regulate gene expression in T cells and the sources of these ROS in T cells. Now that his lab has settled in, Dr. Williams greatly appreciates moving to a more academic setting without having to leave his ARC associations behind. He looks forward to teaching about cytotoxic T lymphocytes in the graduate Immunology course this semester. He is married with one son and enjoys traveling to Europe to visit his in-laws. **Dr. Jaeyul Kwon** (a postdoctoral fellow) and **Nadia Bakdash** (a GW student) also made the move with Dr. Williams. Nadia gave birth to her first child on February 14th!

Dr. Micah Worley (Azad Lab) joined Dr. Azad's lab in February. He was a postdoctoral fellow at the Oregon Health Science University under the mentorship of Dr. Fred Heffron. He studied virulence of *Salmonella typhi*. He will continue research on rickettsial pathogenesis in Dr. Azad's lab. He has two cats and a parrot.

RECENT GRADUATES

John Vu graduated from **Dr. DeVico's** lab in the fall of 2005. As an MD/PhD student, he returned to medical school, where he is rotating through his Internal Medicine clerkship. He has had a manuscript accepted by the journal AIDS Research and Human Retroviruses. He hopes to move on to a residency in Pediatrics, Medicine, or Dermatology in a year and a half. He offered some "pearls of wisdom" he learned while in the Micro program:

1. Assemble your thesis committee ASAP—it's never too early to think about who you would want to ask to be on your committee. Do so even if you have not yet decided which lab to complete your training. It's all about baby steps. Concentrate on doing well on your comprehensives, then push hard to get your proposal defense completed soon thereafter. Even seemingly simple things like setting a date for a committee meeting are strong motivators to get organized.
2. In terms of learning and formulating new ideas, obviously PubMed is your friend, but don't underestimate the power of other databases to which the library subscribes, in particular, ISI Web of Knowledge (WoK). Go to **http://isiknowledge.com** and make sure you have your proxy set. Not only can you search for papers most pertinent to your research, but the database is also extremely useful because it will list for you all the papers that cite it—this is something that PubMed will NOT do. Rinse and repeat for each prior paper, and in no time you'll assemble a body of knowledge that can date back years. Read them once and you'll soon become familiar with the field. Read them again and you'll be an expert in the field. Once you do that, since PubMed now has custom RSS feeds, choose an RSS news aggregator for your computer, and use it to be current on all the new articles released on PubMed. See **http://www.nlm.nih.gov/pubs/techbull/mj05/mj05_rss.html** for more information about this very cool free service.
3. Make every effort to attend most of the conferences and symposia offered to you. The networking experience alone will make a huge difference in your future.
4. Lastly, enjoy the experience. You will never get the same opportunity again. If this means that you sign up for some classes that interest you even AFTER you're done with your comprehensive exams, then by all means do it. I took a few extra classes after my comps and loved every moment of it. On the other hand, if it gets to be too stressful, taking a couple of days outside of the lab to recollect is very important. Often, taking one or two days to intensively think about an experiment is better than a brute force method.

Riham El-asady, MD, PhD, graduated from **Dr. Hadley's** lab in the fall of 2004. She is currently on faculty in the Department of Microbiology & Immunology, School

of Medicine, at Ain Shams University, Cairo. She mainly teaches medical students and doctors the basic concepts in transplantation immunology. Since graduation, she has had three publications. She is currently working on a few projects for the World Health Organization (WHO). All in all, she is having a good time and is enjoying spending more time with her kids. However, she says she does miss Baltimore very much and is planning on a visit in the very near future.

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We welcome your comments and suggestions.

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CONGRATULATIONS!!

Dr. Mike Criscitiello (Flajnik Lab) and **Dr. Martin Flajnik** completed the Baltimore marathon and half-marathon, respectively, in October.

Michelle Weber (Vogel Lab) and her

boyfriend of eight years, Eric Laird, got engaged in October and are getting married on June 23, 2007 (their ten-year anniversary!) at Swan Harbor Farms in Havre De Grace.

Dr. Mary-Jane Lombardo (Kaper Lab) had a baby boy on February 14, 2006. Colin Christopher McKenzie weighed 8 lbs, 1 oz.

Dr. Sayeedur Rahman (Azad Lab) and his wife Riya are the proud parents of a baby girl, Zoya Nashita, born in April, 2005.