

Path Ways

NEWS AND INFORMATION FROM JOHNS HOPKINS PATHOLOGY

WINTER 2013

DIRECTOR'S CORNER

SPOTLIGHT: DIVISION OF IMMUNOLOGY



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 Baxley Professor and Director
 Department of Pathology

Despite a number of challenges, Pathology had a good year in a number of areas. Funding of peer reviewed research hit an all time high of over \$46 million/year. Philanthropic donations for research and educational programs were also strong. Fourteen new pathology residents and eight first year pathobiology graduate students started this past summer. The opening of the new Core Lab and Blood Bank in the new clinical building was successful and provides state of the art laboratories with the latest automation. Implementation of the SOFT Laboratory Information System for Microbiology and Core lab was a challenge but successful. Pathology hit its budget target on the university side and had a favorable budget variance on the hospital side of the ledger.

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Introduction

Immunology studies the fundamental mechanisms of regulation and modulation of the immune response and the interplay of innate and acquired immunity. It investigates the structure and function of cells of the immune system, their interaction with other cells of the body and with invading pathogens. Understanding of basic immunology is critical to the diagnosis and treatment of neoplastic, infectious and immune-mediated diseases. The Division of Immunology focuses on all aspects of immunology, from basic research to its application to clinical medicine. Headed by Dr. Noel Rose, the Division includes faculty who play significant roles in clinical, teaching, and research activities.

Clinical

The Immunology Laboratory, the clinical component of the Immunology Division, is directed by Dr. Barbara Detrick. The laboratory performs and offers expert interpretation on a broad array of laboratory tests and comprehensive consultation in clinical and diagnostic immunology. In addition, the laboratory is involved in research and the development of diagnostic tests for a wide range of immune-based disorders. Approximately 300,000 tests are performed each year for the evaluation of autoantibodies, protein abnormalities and antibody responses to selected microbial agents. The Laboratory is managed by Amé Maters, supervised by Kathleen Lewis and includes a staff of 16 highly skilled medical laboratory professionals.

The Immunology Laboratory continues to grow and provide a wide variety of services in immunologic testing that can be subdivided into three general areas: (1) analysis of monoclonal proteins, (2) autoimmune testing, and (3) infectious disease serology. The evaluation of monoclonal proteins is a basic component of the laboratory analysis for multiple myeloma and other plasma cell dyscrasias. Consultation is provided by an expert group of faculty, including Drs. Barbara Detrick, Richard Humphrey, Patrizio Caturegli, Daniel Peterson, and Timothy Amukele.

The second component of the Immunology Laboratory is autoimmune disease testing. This section monitors autoantibodies that are generated in a variety of diseases, such as, systemic lupus erythematosus, Sjögren's syndrome, rheumatoid arthritis, myositis and celiac disease. The third component of the laboratory is dedicated to infectious disease serology. A broad spectrum of infectious diseases is monitored. Vitamin D levels are also analyzed in the Immunology Laboratory. The laboratory is actively involved in several collaborative studies exploring Vitamin D levels in disease. In addition, the laboratory is dedicated to the academic development of fellows, residents, medical students, and medical technologists. Pathology residents rotate for 2 months through all areas of the Immunology Laboratory. Moreover, the laboratory participates in a variety of other academic activities. For example, the laboratory

offers an immunology clerkship for 3rd and 4th year medical students and a medical elective which provides an in-depth and comprehensive rotation in immunology.

Nearly 11 years ago, under the directorship of Dr. Barbara Detrick, the JHU Cytokine Laboratory was established with the goal of fostering and improving basic, translational and clinical research in cytokine biology. In 2003 this unique laboratory became the first CLIA approved cytokine laboratory in the nation. Since the laboratory's inception cytokine analysis has been offered for research studies and clinical trials, and members of the lab have collaborated with investigators both within and outside Johns Hopkins. Since the immune system reaches into many disciplines, the Immunology Laboratory has close ties and collaborations with additional nationally recognized laboratories. The Immunogenetics Laboratory is directed by Drs. Mary S. Leffell and Andrea Zachary, and the Allergy and Clinical Immunology Reference Laboratory at Bayview is directed by Dr. Robert Hamilton.

Education

The Division of Immunology is deeply involved in education at several levels for the medical students, graduate students, residents and fellows. For first year medical students, faculty members participate in a series of lectures and small group discussions designed to present the fundamental principles

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Nearly all patient safety goals were met and the diversity of our faculty, trainees, and staff continues to grow. These are accomplishments we can feel proud of, but our country's need to decrease the rate of health care spending and the country's overall deficit and debt pose major funding and operational challenges in the next five years. Regardless of whether the Affordable Care Act is fully implemented, it is very likely that provider reimbursement for services will be cut significantly as payment systems move toward a population-based health care management system and away from a fee for service reimbursement. This shift will pose numerous challenges as to how hospital-based departments such as Pathology will be paid and how pathology services will be delivered. Given that the shift will not occur overnight, it is likely we will operate under several different reimbursement systems for some time adding to the complexity. One thing is certain and that is the need to reduce costs which we have started through standardization, centralization, and better cost utilization of pathology services.

At the same time, generating new sources of revenue consistent with the tripartite mission will be imperative as our traditional sources of revenue (ie NIH, DOD, Medicare, Medicaid, Maryland state support), which make up approximately 65% of departmental revenues, are being constrained. NIH funding is likely to remain flat at best with grant paylines at 10th percentile or below. Philanthropic and industry support will become more important than ever to sustain Johns Hopkins Medicine in leading the world in the latest medical advances.

Moving forward, Johns Hopkins Medicine will be focused on 6 mission imperatives.

1. Advance the frontiers of biomedical science to improve patient and community health.
2. Develop an integrated health care delivery system that is population based and managed.
3. Create and enhance a patient and family centered focus in our provision of healthcare.
4. Create and maintain an innovative learning environment taking advantage of new technologies.
5. Be the employer of choice to attract and retain the nation's best health care professionals
Scientists, Educators, Administrators, and Staff.
6. Create sustainable financial success and implement continuous performance improvement.

Being one of the largest departments, Pathology will play a major role in designing and implementing the strategies to achieve these imperatives so crucial to our tripartite mission of research, education and patient care.

Calendar of Events

March 2 – 8, 2013

United States and Canadian Academy of Pathology
102nd Annual Meeting
Baltimore Convention Center
Baltimore, Maryland

March 3, 2013, 5:30 – 7:30 p.m.

United States and Canadian Academy of Pathology
House Staff Fellowship Fair
Baltimore Convention Center

March 3, 2013, 4:30 p.m.

Tour of Pathology Department

March 3, 2013, 6:00

Johns Hopkins Pathology Alumni Dinner
Johns Hopkins Medical Campus
Turner Building Concourse
720 Rutland Avenue
Baltimore, Maryland
R.S.V.P by email to Mabel Smith
mpsmith@jhmi.edu

April 5, 2013, Noon – 4:00 p.m.

Pathology Young Investigators' Day
Turner Concourse
Johns Hopkins University School of Medicine
Baltimore, Maryland

April 26, 2013

Pathology Awards Dinner
The Belvedere
Baltimore, Maryland

2013 USCAP to be held in Baltimore

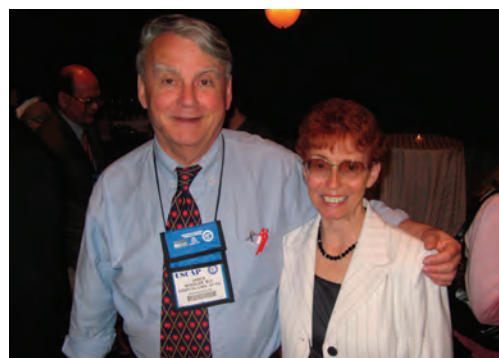
Mark your calendars! The 2013 USCAP meetings will be held here in Baltimore! The Department is planning a number of events, including a special dinner at the main hospital campus for our alumni on Sunday, March 3, 2013.

The popular historian Ric Cottom is scheduled to join us at this dinner and plans an entertaining talk on William Welch.

Please join us for this special night!

To R.S.V.P., Please email to: mpsmith@jhmi.edu

or visit: <http://pathology.jhu.edu/department/news/rsvp.cfm>



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of immunology and their application to clinical medicine. This includes the GTS Immunology course, led by Dr. Jonathan Schneck, which focuses on basic principles of immunology and how they are manifested in various disease states. In the third year, faculty return to present week-long small group discussions re-emphasizing basic immunology as applied to clinical problems. All AP/CP and CP residents receive not only hands-on experience in the diagnostic laboratory, but also one-on-one teaching sessions with senior faculty members of the Division.

The Division participates extensively in the training of Ph.D. candidates. Individual faculty members participate in several different training programs as lecturers and as mentors of graduate students. The training programs include Immunology, Cellular and Molecular Medicine, and Molecular Microbiology and Immunology. Of special interest is the graduate training program in Pathobiology sponsored by the Department of Pathology. In this unique program, selected students work directly with immunology faculty members on projects involving immune-mediated disease, immune responses to infection, and immunologic approaches to cancer

diagnosis and therapy.

The Division hosts a large number of postdoctoral fellows. They represent a cross section of talented young physicians and doctoral scientists from North America and around the world who come to study with immunology faculty members for periods of one or more years.

Research Programs

Faculty research interests span the entire gamut of immunology, from basic mechanisms such as molecular mechanisms of T cell recognition, antigen processing and presentation, molecular signals for immune cell development and differentiation, to translational research in the fields of cancer vaccines, allergy, infectious disease, autoimmunity and transplantation.

Dr. Timothy Amukele's clinical activities involve teaching residents as well as providing interpretive reporting for the Immunology Service Laboratory at Hopkins. His research interest is to understand and improve the quality of clinical laboratories in developing countries. To this end, he works in liaison with the Ministries of Health in

Bhutan, Eritrea, Malawi, and Uganda. He established Quality Assurance systems for laboratories in those countries. He is the Assistant Laboratory Director for the Johns Hopkins research sites in Blantyre, Malawi and Kamapala, Uganda.

Dr. Lynne Burek's main research interests are the investigation of genetic and environmental factors of thyroid autoimmunity, and include the demonstration and elucidation of autoantibodies in various populations. As Associate Professor Emeritus, she no longer actively conducts research, but plays an advisory role for the Immunologic Disorders Lab and continues to teach.

Dr. Patrizio Caturegli's laboratory studies autoimmune diseases of the endocrine glands, with particular focus on those affecting the thyroid and pituitary. The lab has shown that transgenic mice expressing interferon-gamma specifically in the thyroid gland develop a metaplastic transformation of the thyrocyte resembling the human Hürthle cell, a cell characteristically found in Hashimoto thyroiditis. In the pituitary model, studies have led to the development of a mouse model of autoimmune

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Bottom row, left to right: Kelly Chuang, Patrizio Caturegli, Scheberazade Sadegh-Nasseri, Noel Rose, Barbara Detrick, Jonathan Schneck, Abdel Hamad
 Middle row, left to right: Meghan Halvorsen, Krystelle Banno, Mobolanle Badejo, Kelly Baloga, Joan Bieler, LuAnn Rezavi,
 Eun Hee Cho, Monica Vladut Talor, AeRyon Kim, Hong Dai, Norma Stocker, Andrea Chambers
 Top row, left to right: Sophia Uddin, Maria Martina, Christian Schuetz, Karlo Perica, Timothy Amukele, Mathias Oelke,
 Yen-Ling Chiu, Yuri Poluektov, Shintaro Iwama, Maria-Elisa Peroz Munoz

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hypophysitis, a model that the lab is using to explore two aspects relevant for the human condition. The first one is the identification of the pituitary antigens recognized by the immune system in patients with hypophysitis. The second one is the recently reported association between hypophysitis and treatments used in patients with cancer to block T cell inhibitory signals, such as CTLA-4.

Dr. Daniela Cihakova is Director of the Immunologic Disorders Laboratory. She received her M.D. and Ph.D. from Third Medical Faculty, Charles University, Prague, Czech Republic, and completed her postdoctoral fellowship in Dr. Noel Rose's laboratory at The Johns Hopkins University. Her main research interest is the pathogenesis of autoimmune diseases. To study autoimmune disease processes, she uses a mouse model of myocarditis called experimental autoimmune myocarditis (EAM). Her other interests include Sjögren's syndrome, neonatal lupus and AIRE-related immunopathology.

Dr. Barbara Detrick has a long-standing interest in immune responses in the eye. Her research has explored the retinal pigment epithelial (RPE) cell as an immunoregulatory and multifunctional ocular cell, and tracked its role in ocular diseases. A key feature generated from these findings was the identification of the immunosuppressive mechanisms of IFN- γ . These studies have now been extended to brain endothelial cells in experimental cerebral malaria. The laboratory has also developed a unique murine coronavirus model system, which identified for the first time how a virus can trigger a retinal degenerative process associated with an autoimmune component. Currently, this animal model has set the stage for developing standardized diagnostic methods to monitor retinal autoimmune reactivity in human retinal degenerative diseases.

Understanding how impairment of the Fas pathway confers dominant peripheral tolerance is a major focus of **Dr. Abdel Hamad's** research. Impairment of the Fas pathway results in dysregulation of homeostasis of alpha beta T cells involved in regulating mucosal tolerance leading to their peripheral accumulation and induction of mucosal-like peripheral tolerance. His lab is testing these hypotheses by analyzing the function and lineage of peripheral and mucosal

B220+DN T cells using DNA microarray, colitis and diabetes models of autoimmune diseases.

Dr. Richard Humphrey is nationally known in the field of plasma cell dyscrasias. His valuable work continues in this area as he provides the Immunology Laboratory with his vast expertise in evaluating patients with monoclonal gammopathies. His research interests include plasma cell dyscrasias, immunoglobulin structure and function, bone marrow transplantation, amyloidosis, hyperviscosity syndromes and cryoglobulinemia. It is noteworthy that Dr. Humphrey was the first to introduce cellulose acetate electrophoresis and immunoelectrophoresis at the Johns Hopkins Medical Institutions and participate in the early studies leading to myeloablative therapy and bone marrow transplant for multiple myeloma.

After **Dr. Mathias Oelke** developed bead-based artificial Antigen Presenting Cell, aAPC, his lab, in conjunction with Dr. Jonathan Schneck's lab, has extended this project into a new platform technology that combines the areas of immunology, bio- and nano-technology. This new aAPC based platform technology enables the lab to study the modulation and regulation of antigen-specific immune responses. It represents an easy to assemble system in which different immunological signals can be attached to a central scaffold. This system, otherwise known as a "Lego-like" aAPC system, enables the study and manipulation of all kinds of immune cells, including but not limited to NKT cells, CD4, and CD8 T cells. Furthermore, this technology can be used to develop new approaches of active and adoptive immunotherapy for the treatment of cancer and infectious diseases, as well as T cell mediated autoimmune diseases and transplant rejection.

The field of mucosal immunology is undergoing a revolution due to the ongoing Human Microbiome Project, that is revealing many secrets of the once enigmatic gut microbes and associating them with disease and health. **Dr. Daniel Peterson's** laboratory uses a "systems immunology" approach to study the complex systems involved in the host-microbial interactions in the gut in homeostasis and disease. The laboratory uses 16S rRNA gene sequencing based approaches to study the microbes and microbial taxa that are observed in healthy states compared to disease

states in both human subjects as well as mouse models of disease. The laboratory is studying the specific impact of various microbes on the development of the immune system. He studies the reciprocal nature of the interaction through the impact of the adaptive immune system on individual microbes and community structure. His work relies on simplified models that can only be obtained in gnotobiotic and germ-free mice where the microbial composition in the gut can be controlled to identify the genetic and antigenic factors that are driving immune development in the intestinal tract. The Peterson laboratory has established the only currently operating gnotobiotic mouse facility at Johns Hopkins where germ-free mice colonies are maintained and gnotobiotic mice experiments can be performed in flexible film isolators.

The major goal of **Dr. Noel Rose's** laboratories research effort is to unravel the mechanisms responsible for the maintenance of natural immunological tolerance to constituents of the host's own body. The loss of self-tolerance often leads to autoimmune disease. His work focuses on the interplay of genetic, infectious, and environmental factors. These include: 1) Autoantigenic epitopes of thyroglobulin. Dr. Rose has found that iodine, a common component of the American diet, increases the incidence of thyroiditis in a genetically susceptible strain of mice. 2) Virus-induced myocarditis. It has been found that certain strains of Group B Cocksackievirus induce an autoimmune form of heart muscle disease (myocarditis) in genetically predisposed mice. Current studies focus on the question of why most strains of mice (as well as most humans) resolve their disease after the viral phase, whereas a few strains of mice (and a few humans) proceed to a chronic autoimmune disease and impaired cardiac function. 3) A third area of research seeks to understand the mechanism by which certain drugs can cause autoimmune hepatitis.

Dr. Scheherazade Sadegh-Nasseri's laboratory is interested in understanding molecular mechanisms leading to CD4 T cell activation and memory development. Dr. Sadegh-Nasseri's research aims at understanding how CD4 T cells recognize and respond to their specific ligands and how the information gained can ultimately be used in designing effective therapeutics. Recently, Dr. Sadegh-Nasseri

New Grants and Contracts Awarded to Pathology Faculty, 1/01/12-10/31/12

Faculty Member	Award Type	Agency	Dates	Total Funding
Chan, Daniel	Fellowship	Roche Diagnostic Systems	7/1/12-6/30/13	50,000
Le Thi, Quy Hoa	Grant	Lustgarten Foundation	1/1/12-12/31/12	100,000
Hruban, Ralph	Grant	Lustgarten Foundation	1/1/12-12/31/13	1,340,639
Eshleman, James	R21 Grant	NIH/NCI	2/15/12-1/31/14	387,585
Maitra, Anirban	Grant	Lustgarten Foundation	1/1/12-12/31/13	48,477
Eshleman, James	Grant	The Stringer Foundation	7/1/12-6/30/13	120,000
McDonald, Oliver	Grant	AACR	7/1/12-6/30/14	150,000
Guan, Bin	Grant	Ovarian Cancer Research Fund	3/1/12-2/28/14	75,000
Roden, Richard	Contract	Shantha Biotechnics	12/30/11-12/29/12	175,129
Kuhn, Elisabetta	Grant	HERA Foundation	4/1/12-3/31/13	20,000
Wu, TC	R01 Grant	NIH/NCI	9/1/12-6/30/17	1,516,855
Borowitz, Michael	Contract	Bristol-Myers Squibb	11/1/11-10/31/14	87,730
Cihakova, Daniela	Grant	WW Smith Charitable Trust	1/1/12-12/31/12	110,000
Cihakova, Daniela	Grant	Children's Cardiomyopathy Fdtn.	1/1/12-12/31/12	50,000
Hamad, Abdel	R21 Grant	NIH/NIAID	2/1/12-1/31/14	445,500
Hamad, Abdel	R56 Grant	NIH/NIAID	4/1/12-3/31/13	410,605
Rose, Noel	R01 Grant	NIH/NHLBI	4/1/12-3/31/16	1,640,000
Peterson, Daniel	R21 Grant	NIH/NIAID	7/1/12-6/30/14	460,650
Schneck, Jonathan	Contract	NexImmune	5/15/12-5/14/13	144,586
Sadegh-Nasseri, Sch.	R01 Grant	NIH/NIAID	8/15/12-7/31/16	1,620,000
Sadegh-Nasseri, Sch.	R21 Grant	NIH/NIAID	8/1/12-7/31/14	445,500
Lotan, Tamara	Grant	Prostate Cancer Foundation	12/1/11-11/30/14	225,000
Sfanos, Karen	Grant	Prostate Cancer Foundation	3/1/12-2/28/15	225,000
Lotan, Tamara	Grant	Department of Defense	6/1/12-5/31/14	162,000
Nie, Xuguang	Grant	National Kidney Foundation	7/1/12-6/30/13	10,000
Lotan, Tamara	R03 Grant	NIH/NIDDK	9/30/12-7/31/14	162,000
Carroll, Karen	Contract	Nanosphere	4/1/12-7/31/12	47,361
Carroll, Karen	Contract	Becton Dickinson	4/1/12-8/1/12	27,037
Carroll, Karen	Contract	Grupo Ferrer Internacional	4/1/12-3/31/13	5,289
Parrish, Niccole	Contract	Trek Diagnostic Systems	7/1/12-12/31/12	6,936
Parrish, Niccole	Contract	Akonni Biosystems	8/1/12-1/31/13	34,200
Gabrielson, Edward	Grant	Avon Foundation	1/1/12-12/31/13	250,000
Wong, Philip	Grant	ALS Association	2/1/12-1/31/13	80,000
Raabe, Eric	Grant	Larson Pediatric Brain Tumor Fdtn.	5/1/12-4/30/13	75,000
Eberhart, Charles	Grant	Children's Cancer Foundation	11/1/12-10/31/13	70,000
Troncoso, Juan	Contract	NIH/NIA	9/1/12-8/31/13	14,985
Eberhart, Charles	R56 Grant	NIH/NINDS	9/30/12-8/31/13	405,000
Illei, Peter	Contract	Leica Biosystems	6/1/12-5/31/13	1,956
Epstein, Jonathan	Contract	Nymox Pharmaceuticals	6/1/12-5/31/13	63,809
Illei, Peter	Contract	Celgene Corporation	9/1/12-8/31/13	46,860
Fowler, Mary Glenn	R01 Grant	NIH/NICHHD	8/1/12-7/31/17	2,396,524
Eshleman, Susan	Contract	Family Health International	9/17/12-12/16/12	420,051
Jackson, Brooks	UM1 Grant	NIH/NIAID	6/1/12-5/31/13	21,401,600
Kohr, Mark	Grant	American Heart Association	7/1/12-6/30/14	154,000
Riedel, Stefan	Contract	Quidel Corporation	1/4/12-1/3/13	21,716
Riedel, Stefan	Grant	NCIIA	4/1/12-8/31/13	20,000
Riedel, Stefan	Contract	Siemens Healthcare Diagnostics	6/1/12-12/31/12	56,611
Riedel, Stefan	Contract	Rice University	9/1/12-8/31/13	20,000
Total				\$35,801,191

Ed McCarthy as a “Rusty Musician”

After a full day at Hopkins, Ed McCarthy could be found practicing Tchaikovsky and Verdi late into the night as he prepared for a concert with the Baltimore Symphony Orchestra in a program called “Rusty Musicians.”

His music career began at the age of six while growing up in a suburb of Cleveland, Ohio. Although he wanted to play the French horn, he showed up late and the school-issued French horns were taken. Ed was assigned a 3/4 sized cello. He and his younger sister, a violinist, would practice daily under his parent’s watchful eye. By 7th grade he was playing well and participated in a number of solo and ensemble contests. Showing promise as an aspiring musician, Ed began taking private lessons from a Cleveland Symphony cellist, and ultimately sat first chair in the Lakewood High School Orchestra. His parents bought him a handmade German Roth cello, the one he currently plays, as Ed’s skills improved. Ed attended undergraduate school at Columbia University in New York City. In New York Ed enjoyed playing cello with several of his friends who were



attending Juilliard, and interacting with the music faculty which included Itzhak Perlman and Pinchas Zukerman. Ed left his cello behind when he went off to medical school in Chicago, but he picked up the cello again after residency and took private lessons from two renowned Peabody faculty members. He later formed the Vesalius Quartet which included three Hopkins’ medical students. Ed also participated in week long summer chamber music camps held on college campuses where participants played in ensembles all day only taking breaks to eat and sleep in the dorms at night. Ed was eager to sign up for the Baltimore Symphony (BSO) Academy – a concept originated by current conductor, Marin Alsop. Classes are held on such topics as overcoming stage fright, body posture, practice techniques, etc., culminating in a Saturday night concert playing alongside BSO musicians conducted by Marin Alsop.

We are not sure what is next on the music horizon for Ed, but we do know it turned out to be a good thing that no French horns were available when he showed up late to music class in the first grade!

Faces From Past USCAP Meetings



Department of Pathology Incoming House Staff, 2012-2013

Rebecca Asch

Rebecca was born in Washington D.C. She received her B.A. in Religion from Earlham College in Richmond, Indiana. After college, Rebecca spent a year as a veterinary technician, and then worked as a laboratory technician at the University of Minnesota, where she performed original research on normal and leukemic human B-cell precursors. She moved to the University of Pennsylvania, where she worked as a research coordinator for clinical research studies in intensive care units. She earned an M.D. from the University of Medicine and Dentistry of New Jersey-New Jersey Medical School. As a medical student, she taught clinical skills to first and second year medical students and worked with adolescents affected by AIDS. She was involved with the prospective medical student interview process and volunteered in the medical school's free clinic. Rebecca enjoys competitive horseback riding, hiking, yoga, camping, cooking, reading, and embroidery. Rebecca is pursuing AP/CP training.



Morgan Cowan

Morgan was born in Flowood, Mississippi. She received her B.A. in Art History from the University of Virginia, then an M.D. from the University of Mississippi School of Medicine. She was awarded the American Society for Clinical Pathology Award for Academic Excellence and Achievement in 2011. She was vice-president of the University of Mississippi chapter of Alpha Omega Alpha and president of her medical school's pathology interest group. She has been involved with multiple research projects as a medical student, including the search of myeloid dysplasia associated with PIG-A mutation as detected by flow cytometry and looking at the association with HLA class II antigen and renal transplant as a consequence of lupus nephritis. She enjoys French cuisine, modern fiction, club fencing, and beer brewing. Morgan is pursuing AP/CP training.



Eve Crane

Eve Crane was born in Los Alamos, New Mexico. She earned her B.S. degree in Chemical Engineering at Rice University, followed by a Ph.M. in Medicine at the University College London, in England. She then obtained an M.D./Ph.D. in Medicine/Cellular and Molecular Biology from University of Michigan Medical School in Ann Arbor, Michigan. She was awarded the Harold M. Weintraub Graduate Student Award, Fred Hutchinson Cancer Research Center and the Rackham Distinguished Dissertation Award, for her work characterizing mechanisms underlying neural crest stem cells both in development and disease states. Prior to coming to Hopkins, she completed a three-year postdoctoral fellowship at Massachusetts Institute of Technology. Following her postdoc, she completed two years of urology residency at Lahey Clinic in Burlington, Massachusetts. She loves outdoor activities including hiking, biking, swimming, and running. She also enjoys ballet, figure skating, and trying to beat her son in video games. Eve is pursuing AP training.



Tom Gniadek

Tom Gniadek was born in Ann Arbor, Michigan. He received a B.S. in Chemistry from Yale University, after which he worked as a computer programmer and consultant for the Center for Orthopaedics in New Haven, Connecticut. He then received his M.D. and Ph.D. from Yale University School of Medicine. While at Yale, Tom studied Golgi and endoplasmic reticulum exit-site duplication in mammalian cells and *Trypanosoma brucei*, during which he wrote custom computer software for microscope automation and image analysis. He also used his programming skills to develop a clinical database query program for a local medical practice. Tom enjoys running, road and mountain biking, hiking, windsurfing, and skiing. Tom is pursuing AP/CP training.



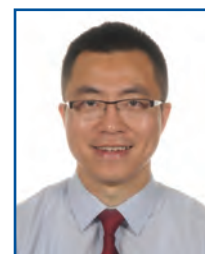
Sarah Karram

Sarah was born in Adloun, Lebanon. She received her B.S. in Biology from the American University of Beirut. She then entered medical school at the American University of Beirut, where she was a member of Alpha Omega Alpha. During her final year of medical school, she spent two months in our department studying discontinuous foci of cancer in prostate needle biopsies with Dr. Jonathan Epstein and clinicopathologic features of papillary urothelial lesions with Dr. George Netto. After medical school, she completed a year of pathology residency at the American University of Beirut Medical Center, where she also studied transepidermal elimination in cutaneous leishmaniasis. Sarah enjoys hiking, biking, folk dance, and tennis. Sarah is pursuing AP/CP training.



Meng Li

Meng was born in Beijing, China. He received an M.D. from Peking Union Medical University, and then came to The Johns Hopkins University School of Medicine, where he completed a Ph.D. in Pharmacology and Cancer Biology and a postdoctoral fellowship in the lab of Drs. Kenneth Kinzler and Bert Vogelstein. His research focused on detecting and quantifying rare DNA sequence variants in cancer, as well as quantifying DNA methylation in clinical samples. He also identified inactivating mutations of ARID2 in hepatocellular carcinoma, and is the primary author on a study of the acute myelogenous leukemia cancer genome. For his accomplishments, Meng received the 2011 Outstanding Young Investigator Award from the American Society for Clinical Investigation and the Association of American Physicians. Outside the lab, Meng enjoys travel and badminton. Meng is pursuing AP/CP training.



Department of Pathology Incoming House Staff, 2012-2013

Mohammed Lilo

Mohammed was born in Baghdad, Iraq. He received his M.B.Ch.B. degree from the University of Baghdad, after which he completed residency and fellowship training in Anatomic and Clinical Pathology and Cytopathology at the University of Baghdad Hospital. As a part of his residency, he also conducted research into the role of p53 in breast cancer pathogenesis. After training, Mohammed spent two years working as an attending pathologist, signing out surgical pathology and cytology, first at Medical City Teaching Hospital in Baghdad, and then at Al-Bashir Teaching Hospital in Amman, Jordan. Mohammed enjoys biking, swimming, and playing guitar. Mohammed is pursuing AP/CP training.



Cindy Liu

Cindy was born in Kaohsiung, Taiwan. She moved to the United States at age 13. Cindy received a B.A. in International Studies with a Concentration in International Health from The Johns Hopkins University. She then earned an M.D. from New York University School of Medicine and an M.P.H. from The Johns Hopkins Bloomberg School of Public Health. During medical school, Cindy volunteered at local homeless shelters giving weekly presentations on a wide variety of health issues, and served as co-president of the American Medical Student Association chapter at NYU. After medical school, Cindy worked as a postdoctoral research fellow at TGen in Flagstaff, Arizona, and then began Ph.D. research training at the Center for Microbial Genetics and Genomics at Northern Arizona University. Her research focuses on the sinus microbiome in chronic rhinosinusitis, burn and diabetic wound colonization, and the male urogenital microbiome. Cindy is fluent in Mandarin and Taiwanese, and enjoys cooking, running, Chinese violin, classical piano, and bluegrass banjo. She is a first soprano, and performed in the JHU Choral Society as an undergraduate. Cindy is pursuing CP training.



Olga Nikolskaia

Olga Nikolskaia was born in Sochi, Russia. She received her M.D. degree from the Voronezh State Medical Academy in Voronezh, Russia, and then completed residencies in dermatology and dermatopathology. After working for a year as an attending dermatologist at the Voronezh Dermatology Hospital, she came to Johns Hopkins, first as an observer in the Department of Dermatology and then as a research fellow in the Department of Pathology under Drs. Dennis Grab and Steven Dumler. Her research focused primarily on the molecular mechanisms of trypanosome pathogenesis, and resulted in several publications. Olga is fluent in Ukrainian and Russian, and enjoys cooking, swimming, and playing the piano. Olga is pursuing AP/CP training.



Lisa Rooper

Lisa Rooper was born in Ann Arbor, Michigan. She earned a B.S. in Communication Studies from Northwestern University, after which she did graduate work in Biological Sciences at Northern Illinois University. At Northern Illinois University, she worked in the Microbial Physiology Lab, studying ubiquinone biosynthesis in *Klebsiella* and characterizing novel soil bacterial species. She then entered medical school at the University of Illinois-Chicago College of Medicine, where she volunteered at community health fairs and helped organize monthly vision screenings at low income Chicago elementary schools. She also worked as a student researcher, studying the use of Raman spectroscopy in the diagnosis of prostate cancer. Lisa enjoys reading, baking, hiking, kayaking, knitting, and cross-stitching. Lisa is pursuing AP/CP training.



Ian Rosenthal

Ian Rosenthal was born in North Maspes, New York. He earned his B.S. degree in Molecular Biology and Botany from the University of Wisconsin-Madison. Ian then earned a Ph.D. in The Johns Hopkins Bloomberg School of Public Health, where he focused on shortening and simplifying the current treatment regimen for tuberculosis using a clinically relevant mouse model. Ian's work resulted in several publications, as well as the chance to volunteer as a field trial assistant in Peru. After completing his Ph.D., he stayed on as a postdoctoral fellow for a year in the Division of Infectious Disease, and then stayed at Johns Hopkins for medical school. While a medical student, Ian also spent a summer working in the Department of Dermatology, working on determining the role of resident bacteria in acne pathogenesis. Ian also enjoys cooking, traveling, and learning about the history of medicine. Ian is pursuing AP/CP training.



Liz Thompson

Liz Thompson was born in Galveston, Texas. She earned her B.S. in Biology from the College of William and Mary, where she was a member of Phi Beta Kappa. She spent all four years working in a neurophysiology lab studying how the hypothalamus functions in thermoregulation, and also volunteered in the labor and delivery unit at a local hospital and helped organize the largest bone marrow drive in the country. At the University of Virginia, Liz earned her M.D. and Ph.D. For her Ph.D. dissertation, she studied how tumor masses serve as sites of naïve T-cell activation independent of lymph nodes. As a medical student, she also served as the social chair for the University of Virginia M.D./Ph.D. program and as an advisor for students transitioning from graduate school to clinical rotations. Liz enjoys running, travel, cooking, reading, and opera. Liz is pursuing AP/CP training.



Department of Pathology Incoming House Staff, 2012-2013

Kevin Waters

Kevin Waters was born in Thousand Oaks, California. He earned his B.S. in Microbiology, Immunology, and Molecular Genetics from the University of California, Los Angeles, where he graduated magna cum laude and was a member of Phi Beta Kappa. He then spent a year working at Amgen as a Clinical Trial Specialist before entering the M.D./Ph.D. program at the Keck School of Medicine of the University of Southern California. During his Ph.D. research in the Department of Preventive Medicine, Kevin explored prostate cancer and type 2 diabetes risk factors, leading to multiple publications. As a medical student, Kevin also volunteered in a clinic in Tijuana, Mexico, and worked with incarcerated adolescents at the City of Los Angeles Juvenile Hall. Kevin enjoys long-distance running and playing basketball. He also plays beach volleyball, and captained a championship intramural team while at USC. Kevin is pursuing AP/CP training.



Dongmei Xing

Dongmei Xing was born in Huhhot, China. In China, she earned her Bachelors in Medicine from Shandong Medical University, then completed an Ophthalmology residency at Jinan Eye Institute. She spent five years as an attending ophthalmologist in Jinan, and then came to the United States to pursue a Ph.D. at Indiana University. Dongmei's research focused on exploring the underlying mechanisms of corneal scar formation, which resulted in several publications. After completing her Ph.D., she came to Johns Hopkins, where she most recently worked as a post-doctoral research fellow in the lab of Dr. Barbara Wasowska in the Department of Pathology, studying the role of antibodies and complement in heart transplant rejection. Dongmei enjoys hiking, canoeing, and cooking. She is pursuing AP/CP training.



INVISIBLE WORLDS

In the spring of 2012, Norm Barker participated in an unusual outdoor, month-long, group exhibit in St. Andrews Square in Edinburgh, Scotland. Some of the top scientific photography from around the world was on display to compliment the Edinburgh International Science Festival. Norm's image was also used on all the marketing for the event. This festival of all things related to science was celebrated with events and lectures around the city of Edinburgh. Astronomy, medicine, entomology, zoology, botany and geology were just a few of the disciplines that were represented in St. Andrews Square, a city park that was turned into an open-air art gallery for all the city to enjoy.

The images were printed on six by six foot panels. By printing them large, the images take on the look of modern art in a visually stunning way, simply because of the scale and the fact that the viewer can experience the images from a double decker bus as well as up-close and personal with a stroll through this open-air



gallery. The labels that went along with each image gave a very detailed account of the science behind the image. The idea of bringing the elegant scientific image to a wide audience using a variety of stunning images fascinated both the novice as well as the expert.

Dr. Simon Gage, Director of the Edinburgh International Science Festival, said "Using cutting-edge imaging techniques, scientists and artists can reveal some strange and beautiful worlds. These wonderful images make you think twice about the very big and the incredibly small, the near and far. Look closely and you may never see the world in quite the same way again!"

Please enjoy a walk thru the park and visit: www.sciencefestival.co.uk/gallery/photos/invisible-worlds-exhibition



"Look closely and you may never see the world in quite the same way again!"

Dr. Simon Gage



Funding Our Future

The Grover M. Hutchins, M.D. Memorial Fund

The friends and family of Grover Hutchins have joined together to establish The Grover M. Hutchins, M.D. Memorial Fund. Grover spent 56 years at Johns Hopkins and during this time had a profound impact on our residency training program, as well as advancing the understanding of cardiovascular and pediatric diseases. This year's recipient is Dr. Toby Cornish.

The Joseph Eggleston Fund in Surgical Pathology

The Joseph Eggleston Fund in Surgical Pathology honors one of the true giants in the field of surgical pathology. Dr. Eggleston was not only a leading authority on the pathology of lung cancer, but he also educated a generation of outstanding surgical pathologists. This year's grantees are Mark Samols for his research on "The role of tumor-associated inflammatory cells in classical Hodgkin lymphoma," and Greg Gurda for his work on "The utility of the Yes-associated Protein (YAP) expression in the diagnosis of persistent neonatal cholestatic liver disease."

The William Welch Award

The William Welch Award is named for the preeminent pathologist who was one of the founding fathers of The Johns Hopkins Hospital and School of Medicine. It was established to acknowledge outstanding achievement in pathology by a second year medical student. The 2012 Award was presented to Megan Buresh.

The Gerald S. Spear JHU-UCI Medical Student Pathology Fellowship

This program was established in 2005 to commemorate Dr. Spear's retirement. The Spear Fellowship provides a UC Irvine student with the opportunity to participate in a one month elective in the Department of Pathology at Johns Hopkins. The goal is to inspire respect for, and possibly a career in, pathology.

The Fred and Janet Sanfilippo Research Fund

The Fred and Janet Sanfilippo Research Fund honors the many contributions of our former Director, Fred Sanfilippo, to the Department of Pathology, as well as his many contributions to the field of organ transplantation pathology. The fund supports innovative research by our residents and fellows.

Please consider supporting one or more of these activities. We are enclosing a self-addressed return envelope to facilitate your contribution. If you have any questions please contact Dr. Ralph Hruban (rhruban@jhmi.edu or 410-955-2163). If you would like to donate to one of these funds online, please visit our secure server at: <https://jhweb.dev.jhu.edu/eforms/form.do?formId=8525>.

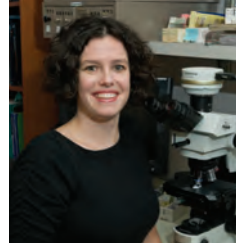
If you would like to use a separate envelope, please send your tax-deductible contributions payable to Johns Hopkins University to:

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The Johns Hopkins Hospital
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Baltimore, MD 21287-6417

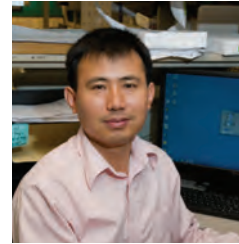
Faculty Fellowship

We have established a number of fellowship programs to honor our faculty.

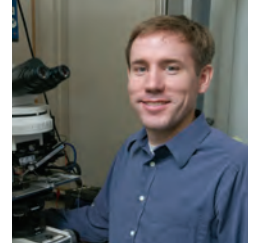
Introducing our new faculty fellowship recipients for 2012-2013



*John K. Boitnott Fellow
Laura Wood*



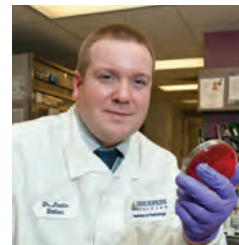
*Michael J. Borowitz Fellow
Gang Zheng*



*Peter C. Burger Fellow
David Nauen*



*Daniel W. Chan Fellow
Athena Kantartzis*



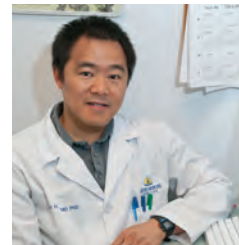
*Patricia Charache Fellow
Justin Dalton*



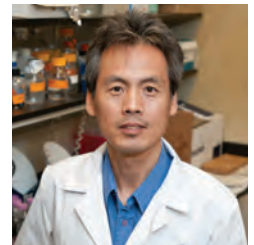
*Jonathan I. Epstein Fellow
Oleksandr Kryvenko*



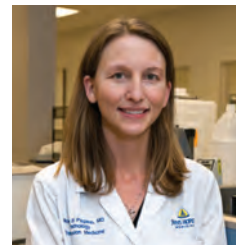
*Yener S. Erozan Fellow
Adam Toll*



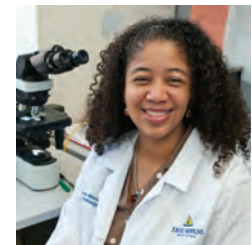
*Constance A. Griffin Fellow
Hao Ho*



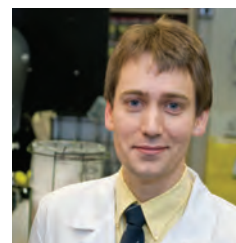
*Robert H. Heptinstall Fellow
Xuguang Nie*



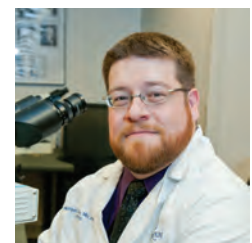
*Paul M. Ness Fellow
Monica Pagano*



*Lorraine Parent Racusen Fellow
Naima Carter-Monroe*



*Dorothy L. Rosenthal Fellow
Matthew Olson*



*John H. Yardley Fellow
Michael Cruise*

Blast from the Past



Guess Who?

Answer on page 19



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Department of Pathology - New Faculty

Patricia Brunker, M.D., D.Phil.



Patricia Brunker was appointed Assistant Professor in the Department of Pathology, Division of Transfusion Medicine in July 2012. She recently completed two years as postdoctoral research fellow in the Molecular Immunohematology lab of the Department of Transfusion Medicine at the National Institutes of Health Clinical Center in Bethesda, Maryland, working on Rh genetics in Africans. Patty grew up in Ossining, New York, and attended Brown University in Providence, Rhode Island as a student in the selective eight-year program in Liberal Medical Education, receiving her Sc.B. in Biology Magna Cum Laude in 1993. She spent two years at Dartmouth Medical School in Hanover, New Hampshire, pausing her medical training to accept an Overseas Research Scholarship for graduate studies in the United Kingdom. She earned her M.Sc. in Biological Anthropology in 1996, and her D.Phil. in Human Genetics in 2001, both from the University of Oxford. Patty returned to the United States, earning her M.D. from Brown Medical School in 2003. She completed an internship in General Surgery and residency in Anatomic and Clinical Pathology at the Brigham & Women's Hospital. She came to Johns Hopkins for her clinical fellowship in Transfusion Medicine in 2008. She is a Diplomate of the American Board of Pathology in Anatomic and Clinical Pathology with a subspecialty board in Transfusion Medicine. She is participating in the joint Hematology/Pathology K12 program in clinical research in benign hematology and transfusion medicine with Drs. James Casella and Paul Ness, and on complex trait genetics with Dr. Aravinda Chakravarti. Her research interests are in human genetic variation and genetic epidemiology, particularly the genetics of alloimmunization and the immune response to transfusion. Her husband Tim is an Assistant Professor of Chemistry at Towson University and they live in Finksburg, Maryland, with their two children Anastasia, 5, and Geoffrey, 2.

Li Chen, M.D., Ph.D.

Li Chen grew up in China, and graduated from Shandong Medical University before he came to Canada in 1997, and earned a Ph.D. in Genetics and Developmental Biology from the University of Alberta in 2002. His Ph.D. research was in a *Drosophila* laboratory studying the neural transmitter dopamine in behavior and development. This led him to Dr. Mel Feany's lab at Harvard Medical School for his postdoctoral training. Feany's lab models human neurodegenerative diseases in the fruitfly and Dr. Chen published his postdoctoral work in various leading journals including the *Nature Neuroscience*, *Journal of Clinical Investigation*. Dr. Chen completed the anatomic pathology residency at Brigham and Women's Hospital and Molecular Genetics Pathology fellowship at Harvard Medical School, followed by a neuropathology training in the joint fellowship program at Brigham and Women's Hospital, Boston Children's Hospital, Beth Israel Medical Center and Massachusetts General Hospital. Dr. Chen joined the neuropathology faculty in August 2012, and is looking forward to setting up his own fruitfly lab. His current clinical and research interests focus on defining cellular pathways underlying neurodegenerative disorders.



Ashley Cimino-Mathews, M.D.



Ashley Cimino-Mathews joined the Department of Pathology, Divisions of Surgical Pathology and Breast Pathology as an Assistant Professor in July 2012, after completing her pathology residency in Anatomic and Clinical Pathology here at The Johns Hopkins Hospital. She completed her undergraduate training at Emory University, graduating summa cum laude in Biology, followed by medical school at Weill Cornell Medical College. Her numerous awards for scholarship and research include Phi Beta Kappa, Alpha Omega Alpha, the Weill Cornell "Good Physician" Award, Fourth Annual Safeway Breast Cancer Retreat Runner-up Poster Award in 2011, and Johns Hopkins Pathology Young Investigator's Day Top Prize in Clinical Research in 2011. Dr. Cimino-Mathews is strongly committed to women's health care and breast cancer research, and her ongoing research interests include the pathogenesis of breast cancer metastasis and breast stromal neoplasms.

Primary Faculty Changes - 2011-2012

New Faculty

Brunker, Patricia	Assistant Professor	Transfusion Medicine
Chen, Li	Assistant Professor	Neuropathology
Cimino-Mathews, Ashley	Assistant Professor	Surgical Pathology
Marzinke, Mark	Instructor	Clinical Chemistry
Sathiyamoorthy, Srividya	Instructor	Cytopathology
Asnagi, Laura	Research Associate	Neuropathology
Bai, Haibo	Research Associate	Gastrointestinal/Liver Pathology
Chang, Qing	Research Associate	Neuropathology
Das, Samarjit	Research Associate	Cardiovascular Pathology
Fogel, Jessica	Research Associate	Transfusion Medicine
Gupta, Sonal	Research Associate	Gastrointestinal/Liver Pathology
Kohr, Mark	Research Associate	Cardiovascular Pathology
Tian, Yuan	Research Associate	Clinical Chemistry
Zhou, Jian-Ying	Research Associate	Clinical Chemistry
Banet, Natalie	Assistant	Gynecologic Pathology
Fanaian, Na'im	Assistant	Surgical Pathology
Heath, Jonathan	Assistant	Surgical Pathology
McDonald, Oliver	Assistant	Gastrointestinal/Liver Pathology
Schwartz, Lauren	Assistant	Surgical Pathology
Wentz, Sabrina	Assistant	Surgical Pathology

Promotions

Savonenko, Alena	Associate Professor	Neuropathology
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Departures

Berman, David	Associate Professor	Pathology & Molecular Medicine, Queens University, Kingston, ON, Canada
Li, Danni (Meany)	Assistant Professor	Director, Clinical Chemistry, University of Minnesota, Minneapolis, MN
Savage, William	Assistant Professor	Brigham & Women's Hospital, Boston, MA
Arnold, Christina	Assistant	Assistant Professor, Ohio State University, Columbus, OH
Bagby, Christina	Assistant	University Hospitals/Case Western Reserve School of Medicine, Cleveland, OH
Chang, Alex	Assistant	PathGroup, Nashville, TN
Guan, Hui	Instructor	Wayne State University, Detroit, MI
Kuperman, Michael	Assistant	Biomedical Labs, Dallas, TX
Matsukuma, Karen	Assistant	Stanford University, LaJolla, CA
Nikolskaia, Olga	Assistant	Pathology Residency Program, The Johns Hopkins University School of Medicine, Baltimore, MD
Norwood, Stephanie	Assistant	Mt. Carmel East Hospital, Columbus, OH
Toll, Adam	Assistant	Cytopathology Fellowship, The Johns Hopkins University School of Medicine, Baltimore, MD

Second iPad App - The Atlas of Pancreatic Cytopathology

The Department of Pathology is pleased to announce the release of the second iPad application ("app") in its series of educational apps that present pathology images in a unique, interactive format. Development of The Atlas of Pancreatic Cytopathology was led by its principal author, Armanda D. Tatsas, M.D., Assistant Professor of

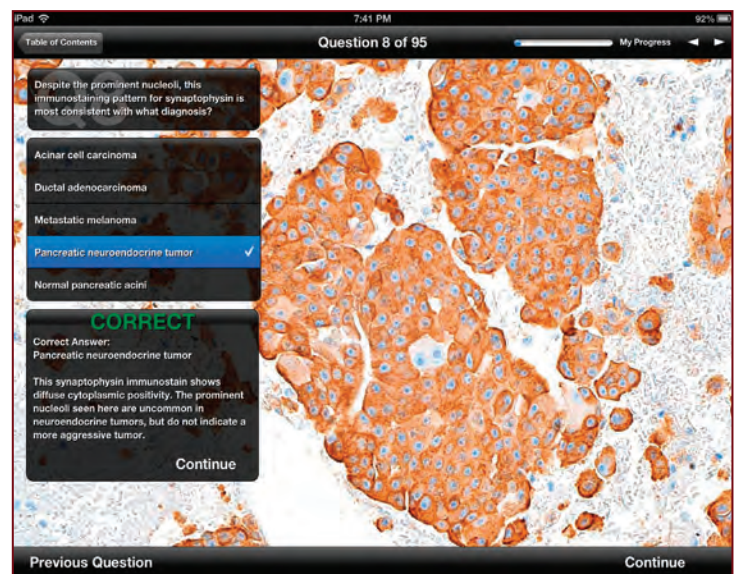
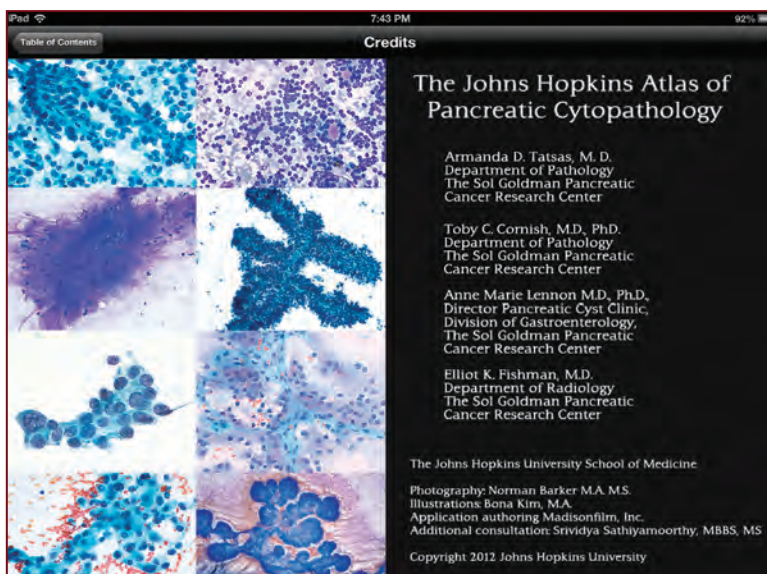


Pathology and Associate Director of Cytopathology. This exciting new app builds on the foundation of The Atlas of Pancreatic Pathology, complementing its focus on histology and gross photography by focusing on cytopathology and radiology. The app is composed of four modules: an interactive teaching algorithm, a searchable image atlas, an image-based quiz, and a flash card module. The atlas covers over 25 diagnostic entities of principle importance in the cytologic evaluation of pancreatic lesions and contains over 700 high resolution images. A unique feature of this app is its incorporation of radiographic imaging in both the atlas and the teaching algorithm, as the radiographic impression is of great importance in interpretation of pancreatic cytopathology. Anne Marie O'Broin-Lennon, M.D., Assistant Professor of Medicine and Director of the Pancreatic Cyst Clinic, provided numerous endoscopic ultrasound (EUS) images of pancreatic lesions. Computed tomography (CT) images were provided by Elliot K. Fishman, M.D., Professor of Radiology, Oncology and Surgery and Director of Diagnostic Imaging and Body CT. Dr. Fishman is a noted expert in abdominal CT and 3D imaging and runs CTisus.com, a nonprofit Web site dedicated to radiology education.

Toby C. Cornish, M.D., Ph.D., Assistant Professor of Gastrointestinal and Liver Pathology and Pathology Informatics, again provided the data model and authoring tools for the app, while Norm J. Barker, M.S., Associate Professor of Pathology and Art as Applied to Medicine, was instrumental in the acquisition and post-processing of these images. As in the first app, this atlas features illustrations by Bona Kim, M.A., an award-winning medical illustrator and 2011 graduate of the Master of Arts program in Medical and Biological Illustration from The Johns Hopkins University School of Medicine.

The Johns Hopkins Atlas of Pancreatic Cytopathology is a collaboration between The Sol Goldman Pancreatic Cancer Research Center and the Departments of Pathology, Radiology, and Medicine. Both The Johns Hopkins Atlas of Pancreatic Cytopathology and The Johns Hopkins Atlas of Pancreatic Pathology are available at no cost and can be downloaded from iTunes:

<http://itunes.apple.com/us/app/atlas-of-pancreas-pathology/id474845392?mt=8>



Welcome to the Graduate Training Program in Pathobiology 2012-2013 Incoming Students

Jaeyeun Lee



Jaeyeun was born in Seoul, South Korea and graduated from Yonsei University in February 2012. During her undergraduate years, she double majored in Biology and Chemistry. She worked at the Cancer Immunology lab in the Severance Hospital of Yonsei University's medical school. While there, she came to possess a strong conviction that she could contribute to this field in the future. Her main interest is Anti-tumor Immune Responses, and she wants to develop a cancer immunotherapy. Her dream is to create a more natural means to cure cancer which will not carry side effects. She wants to be a scientist who can contribute to humanity through research. Outside of the lab, she enjoys traveling and exercising. Jaeyeun is one of our Margaret Lee students.

Yi-Hsin (Sophie) Lin



Yi-Hsin (Sophie) was born in Tainan, Taiwan and received her M.D. degree from the National Defense Medical Center, Taipei, Taiwan in July 2004. After her graduation and a 2-year military obligation in army aviation, she joined the OB/GYN in Tri-Service General Hospital, Taipei, Taiwan for the next five years. She finished her residency training program in 2011, and served in a regional hospital for her third year military obligation. Yi-Hsin is studying cancer biology. She hopes that besides providing medical service, she can do translational research to transform basic research into better clinical applications and conduct more valuable basic research with clinical experience.

Brad Poore



Brad, a Montana native, graduated from Montana State University in 2010 with a bachelor's degree in Cellular Biology and Neuroscience. As an undergraduate, he conducted research into Adeno-associated viruses and their capsid structure. From his experiments he learned that viruses, while interesting, are not the most compliant of research subjects. Fortunately, he does not plan to work with viruses long term and will instead pursue his passion of cancer research. Brad chose to attend the Johns Hopkins Pathobiology program for its cutting-edge facilities, its incredible faculty, and its focus on translational research. The summer before his attendance, Brad hiked as many mountains as possible and presided over his friend's wedding.

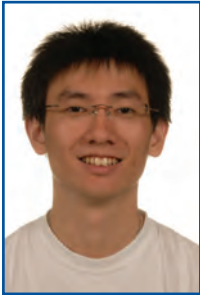
Devin Sabin



Devin is from Houston, Texas. He graduated with honors in April 2012 from Brigham Young University with a B.S. in Microbiology. He participated in the Howard Hughes Medical Institute-sponsored Phagehunters program in which he discovered a novel mycobacteriophage named Sabinator. He also participated in BYU's first iGEM team, which is an international synthetic biology competition. Their team won a gold medal for their work on a theoretical E. coli vector-based colon cancer detection system. Devin already has experienced Baltimore while working as an intern at Becton Dickinson Diagnostics. He is interested in infectious diseases. When not in the lab he enjoys fishing, camping and four-wheeling.

Welcome to the Graduate Training Program in Pathobiology 2012-2013 Incoming Students (continued)

Bo-yi Sung



Bo-yi comes from Taipei, Taiwan and graduated in July 2010 with a M.D. from National Defense Medical Center, Taipei, Taiwan. He worked as a teacher's assistant in the Department of Microbiology and Immunology, National Defense Medical Center. He is interested in immunology research, especially the complexity of cells-cells interaction. He also worked with a researcher who focuses on epigenetic modification, including DNA methylation and histone modification, regulating tumorigenicity. He wishes to devote his education from Johns Hopkins to solving clinical problems.

Mike Urbanowski



Mike was born in central Massachusetts to two pilots, Ed and Jean Urbanowski. His first 15 summers were spent hanging out at a small airport on the outskirts of Worcester, Massachusetts. He received undergraduate degrees in public health and microbiology from UMass-Amherst. After completing his undergraduate work, Mike moved on to study his long-term passion for plant physiology through a Master's Degree program in plant biology at UMass-Amherst. During his undergraduate and graduate work, he developed an interest in cancer pathology and began volunteering at the UMass-Worcester Medical Campus on a study aimed at improving long-term follow-up care for cancer survivors. Mike enjoys bicycling, volunteering, a good adventure, and guacamole. His additional interests include global health-disparities, art history, paleobotany, and silent films.

Breann Woelfel



Breann graduated from Augsburg College in Minneapolis, Minnesota in 2010 with a B.S. in Biology and a minor in Psychology. During her time there, she participated in two research internships that introduced her to conducting research in human disease processes. She enjoys knitting, reading, and playing video games. She is excited to use the Pathobiology program coursework as a means to better define her specific research interests.

Congratulations to the 13th Annual Pathology Young Investigators' Day Awardees

The Department of Pathology again enjoyed an excellent turnout for this year's Young Investigators' Day.

For Excellence in Basic Research

Shaaretha Pelly, B.Sc.

Paul O. Aiyetan, M.D., M.S.
Samarjit Das, Ph.D.
Veena P. Gnanakkan, M.S.
Arvin M. Gouw, B.A.
Sophie Lin, B.Sc.
Laxmi G. Pellakuru, B.Sc.
Yuri Poluektov, B.S.
Shuang Yang, Ph.D.
Toshiyuki Yano, M.D., Ph.D.
John G. Zampella, B.S., B.A.

For Excellence in Clinical Research

Kennard Tan, M.D.

Brittany J. Holmes, M.D.
Nilda G. Roibon, M.D.

**Support our trainees by attending their
presentations at the USCAP meeting**

For Excellence in Translational Research

Mark A. Marzinke, Ph.D.

Jacqueline A. Brosnan, B.A.
Shadi Toghi Eshghi, B.Sc.
Saniya Fayzullina, B.S.
Anna K. Fuezery, Ph.D.
Sonal Gupta, Ph.D.
Cheng-Ying Ho, M.D., Ph.D.
Kah Suan Lim, B.S.
Yiting Lim, B.S.
Raffaella Spina, M.Sc.
Mirte Mayke Streppel, M.D.
Melek E. Sunay, B.S.
Laura D. Wood, M.D., Ph.D.
Shu-Han YU, B.S., M.S.

** Names in bold denote first place*

Continued from page 4

SPOTLIGHT: DIVISION OF IMMUNOLOGY

and her lab members reported the first cell free antigen processing system composed of only a few purified essential proteins that is fully capable of selecting the immunodominant epitopes for T cell activation. This novel assay allows successful de novo identification of unique and physiologically relevant epitopes from antigenic proteins using mass spectrometry. Another area of research in Dr. Sadegh-Nasseri's laboratory is to investigate memory CD4 T cell development and longevity, an area that is fundamental to the success of vaccines.

Dr. Jonathan Schneck's lab takes a broad-based approach to studying T cell responses. A critical interaction that helps initiate and direct T cells is the interaction between a specific T cell receptor and a cognate antigen-Human Leukocyte Antigen (HLA) complex. To facilitate these studies, Dr. Schneck's lab has developed novel tools including soluble versions of HLA molecules, HLA-Ig complexes, and artificial Antigen Presenting Cells, aAPC. Several of them have been patented and are currently licensed and marketed by BD under the product name of DimerX. Based on these and other tools, they focus on a multiscale and multidimensional analysis of the T cell responses which enhance insights into both the basic biology of T cells responses and ultimately leads to development of novel therapeutic approaches.

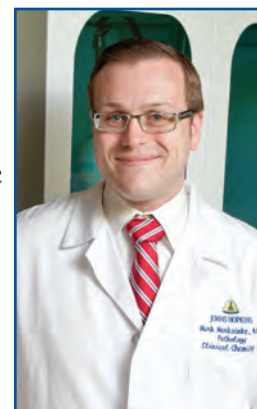
Antibody-mediated rejection (AMR) is usually unresponsive to conventional anti-rejection therapy and is one of the greatest therapeutic challenges in transplantation. It has recently been recognized as a major cause of allograft loss in particular populations such as patients after previous open-heart surgery, multiple blood transfusions, and multiparous females. **Dr. Barbara Wasowska's** group developed experimental animal models of vascularized organ transplantation to study pathogenesis of antibody- and complement-mediated endothelial cell injury leading to graft rejection. Her group has shown that Allo-Ab-mediated graft rejection results from activation of complement by C1q- and MBL- (mannose binding lectin) dependent pathways, and interactions with a variety of effector cells, including macrophages and monocytes through Fc receptors (Fc Rs) and complement receptors.

<http://pathology.jhu.edu/departments/immunology/index.cfm>

Department of Pathology - New Faculty (cont.)

Mark Marzinke, Ph.D.

Mark Marzinke was born in Staten Island, New York. He earned a B.A. with honors in Biology from the College of the Holy Cross in Worcester, Massachusetts. He subsequently earned a Ph.D. in Biochemistry from the University of Wisconsin-Madison in 2010. His doctoral training was conducted in the laboratory of Dr. Margaret Clagett-Dame, and focused on the characterization of the all-trans retinoic acid-responsive gene Calmin (Clmn), in neuronal differentiation. Following his graduate work, Dr. Marzinke completed a clinical chemistry fellowship at The Johns Hopkins University. During his clinical fellowship, Dr. Marzinke focused on the development and validation of qualitative and quantitative mass spectrometric assays for the clinical monitoring and quantitation of pain management drugs and anti-neoplastic agents, respectively. Further, he performed large scale proteomics studies with Drs. Daniel W. Chan and Hui Zhang, where his research was aimed at the temporal identification of biomarkers expressed during ovarian cancer progression. Dr. Marzinke is currently the Director of Preanalytics in the Core Laboratory of The Johns Hopkins Hospital. Additionally, he is the Associate Director of the Clinical Pharmacology Analytical Lab (CPAL) in the Division of Clinical Pharmacology in the Department of Medicine at The Johns Hopkins University School of Medicine, where he holds a secondary appointment. His research interests are in the development, validation and implementation of assays focused on personalized medicine, including therapeutic drug monitoring and pharmacogenetic testing. Additionally, Dr. Marzinke is interested in laboratory workflow optimization and test utilization. Dr. Marzinke is board certified by the American Board of Clinical Chemistry.



Srividya Sathiyamoorthy, M.B.B.S., M.S.



Srividya (Vidya) Sathiyamoorthy was born in Thiruvananthapuram, Kerala, India. She obtained her medical education from Jayadeva Jagadguru Murugarajendra Medical School (JJMMC), Davangere, India, affiliated to Rajiv Gandhi University of Health Sciences. She finished her Master of Sciences in Biomedical Sciences, from the University of Medicine and Dentistry of New Jersey. Her residency training in anatomic and clinical pathology was completed at Georgetown University Hospital, Washington, DC, serving as Chief Resident for 2009-2010, followed by fellowship training in Cytopathology at The Johns Hopkins University. Her areas of interest include Patient Safety and Quality Improvement in Laboratory Medicine, towards which she served as a junior member on the CAP Checklists Committee during 2010-2012, and as a member of the Johns Hopkins Laboratory Inspection Team for 2011-2012. Her primary focus is pulmonary cytopathology and the application of molecular testing toward personalized lung cancer therapy. She enjoys listening to and performing Indian classical music (vocal and instrumental), painting pottery with her two daughters and running.

Awards/Recognition

Appointed Founding Editor Journal of the American Society of Cytopathology

Syed Ali, M.B.B.S. was the 2012 recipient of the President's Award from the American Society of Cytopathology at their annual meeting in Las Vegas on November 5, 2012. The award honors his contributions and hard work this past year in establishing the society's new journal. Syed has also been appointed the founding Editor-in-Chief of the forthcoming "Journal of the American Society of Cytopathology." The journal will be published by Elsevier in New York and the first issue is scheduled for January 2014. American Society of Cytopathology (ASC) is the oldest and largest professional organization of cytopathologists and cytotechnologists in the world with over 3,000 members.

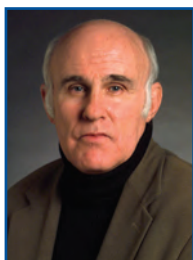


Distinguished Alumni

Constance Griffin, M.D. was posthumously honored as one of the University of Cincinnati College of Medicine's 2012 Distinguished Alumni.

55th Maude Abbott Lecture

Robert Kurman, M.D. gave the 55th Maude Abbott Lecture at the 2012 annual meeting of the United States and Canadian Academy of Pathology in Vancouver, Canada. Bob's talk, "Ovarian Carcinogenesis: Myths, Models, and Paradigms. Observations of a Biology Watcher," was one of the highlights of the meetings.



2012 Founder's Lecture of the International Skeletal Society

Edward McCarthy, M.D. delivered the 2012 Founder's Lecture of the International skeletal Society in Rome, Italy. His topic was Art and the Skeletal System.

The Ruth C. Brufsky Award and 2012 "Resident Award"

Ralph Hruban, M.D. received The Ruth C. Brufsky Award for Excellence in Clinical Research on Pancreatic Cancer from the University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania. He also received the 2012 "Resident Award" in recognition of commitment to resident education from the Department of Pathology, Anatomy and Cell Biology from Thomas Jefferson University in Philadelphia, Pennsylvania.



Medical Education Award for "Halsted"

Norman J. Barker, M.A., M.S., RBP, FBCA and **Ralph Hruban, M.D.** received the Medical Education Award for "Halsted" from the BioCommunications Association. The February 2012 issue of Scientific American featured the work of Norm Barker. Norm's most recent book, the beautiful Paleobotanical Splendor, documents fossilized plant material.

...On The Web



As the Pathology Web presence continues to grow, we've branched out into several social media channels to make it easier to follow the department and the latest news.

Our Web office has posted a handful of new videos on YouTube, including new animations, interviews and presentations. The Pathology YouTube channel can be found here: <http://www.youtube.com/user/HopkinsPathology>



We are also preparing to launch Web versions of our iPad Atlas apps, which will work on any device and platform. Watch <http://pathology.jhu.edu/> for news on this and other departmental happenings. "Like" us on facebook.

Blast from the Past

ANSWER

Mabel Smith and Mary Lakin

...In The Photography and Graphics Area

Pathology Photography provides world class quality, service, and turnaround for printing your custom large format scientific, research and business posters. All poster orders are processed and printed on a one-day turnaround. Remember, when you need custom posters, just think Path Photo.

The size of your poster can be any size up to 4 ft. by 8 ft (121cm by 243cm). We use a variety of software; including, but not limited to Adobe Illustrator, PowerPoint, PDF, Adobe Photoshop, and others. If you have any question or concerns about what software to use, please contact Sharon or RT at 5-3843.

Something new in Path Photo Graphics. We are introducing our new foldable fabric for poster printing. This poly fiber fabric is perfect for packing in a suit case or keeping tightly rolled in a poster tube. There is no sacrifice on image quality and the fabric is tear-resistant. Although the fabric is not totally crease or wrinkle free, a quick touch-up with an iron on the reverse side of the poster will give you a wrinkle free presentation (use lowest setting on the iron).

Congratulations is in order.... Jon Christofersen, medical photographer, won a Citation of Merit at the 2012 BioCommunications Association annual meeting. He won for his panoramic photograph titled *Sunrise at Marshall Point Lighthouse*.



Just a reminder, when producing a poster, brochure, or any other form of graphics printouts, the official Hopkins logo (shown below) is to be used. The Pathology logo (shown below) may also be used, but must accompany the official Hopkins logo.





**Our current and former residents, fellows and
faculty are cordially invited to a special
ALUMNI DINNER**

The Annual USCAP Meeting will be held in Baltimore
March 2 – 8, 2013
at the Baltimore Convention Center

In place of our traditional Monday night Alumni Reception, we will be
hosting a special Alumni Dinner in the Miller Building Concourse
(formerly the Broadway Research Building, 733 N. Broadway)
on the Johns Hopkins University Medical School Campus.
We hope you can take advantage of this unique opportunity
to reconnect with old friends.

Date

SUNDAY, March 3, 2013

JHH Campus Tour

4:30 pm

Cocktails

6:00 pm

Dinner

7:00 pm

Guest Speaker

**Ric Cottom – Baltimore historian
and radio personality to give a
talk honoring William Welch.**

An RSVP by Friday, February 1, 2013 is required for your attendance.

You may use any of the following methods to respond:

e-mail: mpsmith@jhmi.edu

Phone: 410-955-5876

Web link: <http://pathology.jhu.edu/departments/news/rsvp.cfm>

Note: We will NOT be holding a reception on Monday, March 4, 2013.

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