

PathWays



JOHNS HOPKINS
MEDICINE

NEWS AND INFORMATION FROM JOHNS HOPKINS PATHOLOGY

December 2017

The Pathobiology Graduate Training Program



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Repeating



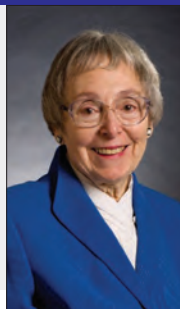
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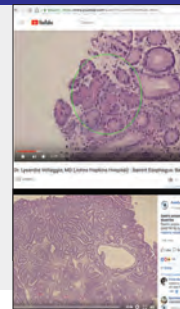
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Do Work That Matters, That Is Hard, and That You Are Uniquely Able To Do!

Jen-Hsun Huang, the inspiring founder of the company NVIDIA, spoke at Hopkins as part of the Patient Experience Advisory Series sponsored by the Department of Radiology. In his talk and in a follow-up article (*J Am Coll Radiol.* 2016 Aug 13(8):1008-9), Jen-Hsun highlighted the core principles that enabled him to be so successful. Paraphrasing slightly, these include:

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- 1) *Do work that matters, that is hard, and that you are uniquely able to do,*
 - 2) *Do work that brings incredible joy,*
 - 3) *Believe in your vision knowing that others may not at first, and*
 - 4) *Care about craftsmanship.*
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Jen-Hsun's principles are all directly applicable to our work in the Department of Pathology. The principle most meaningful to me is: *Do work that matters, that is hard, and that you are uniquely able to do.* Here in Pathology we do impactful, challenging work that could only be done in the unique collaborative environment that is Hopkins Pathology.

As you reflect on Jen-Hsun's principles, let me take a few minutes to update you on some of the new developments in our great Department! Our faculty continue to grow. As you will see on pages 8-9, this year we welcomed nine new faculty. These incredibly talented additions to our faculty include Kate Grabowski, Ph.D., in Transfusion Medicine; Parvez Lokhandwala, M.D., Ph.D., in Immunopathology and Transfusion Medicine; Tricia Murdock, M.D., in Gynecological Pathology and Sibley Memorial Hospital; Kiyoko Oshima, M.D., Dr. Sc., in Gastrointestinal and Liver Pathology; Nicholas Roberts, Vet.M.B., Ph.D., in Gastrointestinal and Liver Pathology; Lisa Rooper, M.D., in Surgical Pathology; Max Rosario M.D., Ph.D., in Immunopathology; Laura Wake, M.D., in Hematopathology; and Xiaojun Wu, M.D., Ph.D., in Hematopathology. Each of these new faculty members brings their own distinctive skills to the Department, and we look forward to their doing work that matters, that is hard, and that they are uniquely able to do!

We had one change in leadership I wanted to let you know about. Aaron Tobian M.D., Ph.D., took over from Paul Ness, M.D. as head of Transfusion Medicine on July 1, 2017. Paul has been a wonderfully impactful division director since 1979. Among the many things Paul did as division director was to lead the division through the AIDS epidemic—work that mattered and that was unimaginably hard.

On the education front, thanks to the hard work of our

chief residents, we have established six elective residency tracks. As you will read about on page 10, these new elective certification tracks allow our residents to work closely with a dedicated faculty member to achieve real expertise in one of six broad areas (physician-scientist research; education; informatics; quality assurance/quality improvement/value-based care; health policy/hospital management; and global health).

These tracks represent the growing scope of pathology, and we believe these new tracks will better prepare our residents to become leaders in the field, to do work that matters, and work that they are uniquely able to do!

Our Pathobiology graduate students are also being trained to do work that matters. Our Pathobiology Graduate Training Program, described on page 3, rigorously trains Ph.D.-level basic scientists in human disease-relevant mechanisms of pathology and therapeutic identification using approaches that effectively blend human disease biological samples and a host of cell and animal model systems that can be interrogated by state-of-the-art methods. When they complete the program, these students are ready to embark on careers of relevance and leadership.

On the research side, total sponsored research (direct and indirect) increased by 10% from FY16 to FY17 (page 20). As a result, our Department remains the #1 NIH-funded pathology department in the country (www.MRIMR.org), and more importantly, the science conducted by our faculty has real impact (it matters). Reflecting the impact of their scientific endeavors, Mike Goggins, M.B.B.Ch., M.D., in a joy-filled ceremony, was installed as the inaugural Sol Goldman Professor in Pancreatic Cancer Research (page 5), and Charles Eberhart, M.D., Ph.D., the Charlotte A. Wilson and Margaret K. Whitener Professor of Ophthalmology (page 6).

Lastly, on the clinical side our faculty and staff remain overworked but tireless. Nonetheless, the clinical work brings incredible joy, and our faculty and our staff—whether technologists in Microbiology plating bacteria, or faculty in Surgical Pathology, and in all our Labs—care about “craftsmanship,” and across the Department we provide unparalleled clinical care.

Whether we are engaged in research, teaching or patient care, we should all take a moment to reflect on how Jen-Hsun's principles can inspire and guide our priorities and work.



Ralph H. Hruban, M.D.

The Pathobiology program in the Department of Pathology began in 1999 with a class of three students. Currently there are 36 students in the program, ranging from first years to fifth years, and 75 doctoral degrees have been awarded. The core executive and administrative team members of the program are Dr. Lee Martin (Program Director), Dr. Tamara Lotan (Program Co-Director), Tracie McElroy (Senior Academic Program Coordinator), Stacey Morgan (Administrative Coordinator), and Janelle Montagne (Chief Graduate Student 2017-2018, Ph.D. Candidate).

The Program Mission

The mission of the program is to train Ph.D. candidate students in basic research and education so that they can effectively bridge molecular and cell biology with clinically-relevant science and pathological biology. Our emphasis is on human-relevant, basic science mechanisms of disease and therapeutic strategies. The trainees achieve a solid working understanding of the biology of human disease and experimental approaches related to human disease. We accomplish this through a curriculum and environment that are unique. The coursework is designed to build a foundation in pathology, including translational medicine, molecular biology, cell biology, genetics, immunology, bioinformatics, and ethics. The outstanding and scientifically diverse programmatic faculty and environment act as catalysts for students to explore, thrive, and consolidate their research to launch their careers.

The First Year

Each entering class is usually five to six students. Admission into the program (chaired by Dr. Karen Sfanos) is fiercely competitive. Historically, the program has about 100 applicants each year. The first year of training is intensively academic by way of core course instruction. The required courses are Pathology for Graduate Students-Basic Mechanisms, Cancer, Immunology and Infectious Disease, Neuropathology, Macromolecular Structure and Analysis, Molecular Biology and Genomics, Fundamentals of Genetics, Computational Biology and Bioinformatics, Cell Structure and Dynamics, Pathways and Regulation, Immunology, and Pathobiology and Disease Mechanisms.

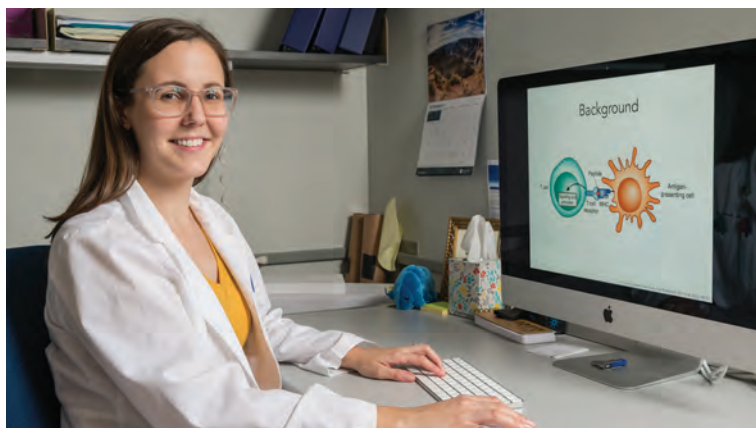
At the beginning of their first year, students are initiated



Dr. Karen Sfanos (Admissions Committee Chair)

into the journal club (directed by Drs. Sara Sukumar and Ben Larman). This course commitment lasts throughout the duration of their graduate training. The objective of the journal club course is to train graduate students in the fundamentals and art of understanding and determining the quality and structure of scientific publications. Students select publications for presentation. The paper selection process is a joint effort with a faculty member. Papers are carefully read and scrutinized for detail of experimental background and logic, experimental approach and methods, results, figure composition and presentation, and interpretation. Students, with advice from a faculty mentor, prepare and present to an audience a PowerPoint presentation on the selected paper. Students anticipate and prepare for questions about the paper as part of the presentation.

In addition to these courses, first-year students are required to take three lab rotations for three-month intervals. When the lab rotations are completed, each student has a critical, seminal decision to make. The student chooses, at the end of their first year, a principal investigator/mentor to work with for their doctoral research throughout the remainder of their training.



Janelle Montagne (Chief Graduate Student 2017-2018, Ph.D. Candidate)



Dr. Ben Larman and Pathobiology graduate students participate in the journal club

Margaret Lee Graduate Students

The first Margaret Lee graduate student was funded in 2006. Annual philanthropic support is awarded to first-year students from Indonesia, Korea, Malaysia, Singapore, and Taiwan. This magnanimous dedication to our program has been used to help train 24 outstanding and extraordinary young students.

The Second Year

The main event in the beginning of the second year is the individual graduate board oral (GBO) exam. The GBO exam is a university requirement for Ph.D. candidates. Passing defines the student officially as a Ph.D. candidate in the program. The GBO exam is a rigorous process. Students are examined for about two hours by five faculty members. During this time the examiners ask questions on any topics related to the academic courses the students took during their first year. Student responses are judged by the committee based on accuracy, depth, understanding, vision, and organization as presented verbally and by visual illustrations (drawings, charts, schematics) made at the dry-erase board.

After the euphoria of passing the GBO exams, students largely spend time embracing their coalescing thesis research project, but they still need to take a few critical courses, in addition to one elective course each remaining year. A required course is Research Ethics which is offered through the Office of Graduate Student Affairs. This course covers key concepts in the responsible conduct of a scientist and researcher. Another second-year course is Grant Writing 101 (directed by Drs. Laura Wood and Jim Eshleman), during which students prepare an NIH-like F31 predoctoral training grant application. This course is very practical because of the basic grant writing instruction and the finished product can be refined and submitted for NIH competition by some students.

During the second year, students can take their first of two required translational research rotations. This aspect of the program is distinctly unique. Each translational research course (directed by Dr. Kathy Burns) is designed to acquaint graduate students in approaches that are used clinically. This training can include diagnostic surgical pathology and neuropathology and diagnostic laboratory practices in hematology, medical microbiology, chemistry, and immunology.

Years Three and Beyond

The third year begins with the “Graduate Coating Ceremony.” This event is co-sponsored by the School of Medicine, the Bloomberg School of Public Health, and the Graduate Student Association. It signifies that the students have passed their GBO exam and have been welcomed into a laboratory to pursue their thesis research project. The main remaining mission of the student is to work on their thesis project with the supervision of the primary mentor and thesis advisory committee, usually comprised of three to five faculty. This process culminates in an approved written dissertation that is submitted to the University in partial fulfillment of the award of Ph.D.

Each academic year one third-year student is selected to become the chief graduate student for the year. This aspect of the program is unique as it is modeled from the clinical education program. The chief graduate student has many administrative and leadership obligations.

The Retreat

Each September the program hosts a retreat at the Mt. Washington Conference Center. The activities include student poster presentations that are judged by faculty, student short talks, and topic-centered lunch breakout groups. A keynote speaker is typically invited to give an hour-long lecture. This speaker could be an alumnus, a career development presenter, or a distinguished professor, e.g., Drs. Don Coffey and Solomon Snyder have presented. Awards are given to the best-voted student speaker and best-judged poster presenter. Afterwards, many of the students relax with a social gathering.

The Nancy M. Nath Pathobiology Teaching Award

Each year the graduate students select a program faculty member to receive the Nancy M. Nath Pathobiology Teaching Award. It is awarded to faculty members for their outstanding contributions to graduate student training. It is an important privilege and honor to be deemed by the students in such a manner (see page 12).



The annual retreat features roundtable discussions, keynote and student speakers



A Pathobiology graduate program student presents a poster during the retreat

Drawn to Johns Hopkins when their mother Lillian passed away from pancreatic cancer, the Goldman family of New York decided to take action against the disease that took their mother's life, and in 2005 endowed the Sol Goldman Pancreatic Cancer Research Center in the Department of Pathology. This leading pancreatic cancer research center, directed by Ralph Hruban, M.D., honors Sol and Lillian Goldman's legacy. Since its inception, the Goldman Center has funded more than 96 grant proposals, which have benefitted 41 principal investigators from 15 departments across The Johns Hopkins University.

On June 19, 2017, at a dedication ceremony on the Johns Hopkins East Baltimore campus, Michael G. Goggins, M.B.B.Ch., M.D. was installed as the inaugural Sol Goldman Professor of Pancreatic Cancer Research. The Goldman family hopes that this professorship will provide long-term support to Dr. Goggins in his innovative research in the field of pancreatic cancer.

Dr. Goggins received his undergraduate and medical degrees from Trinity College at the University of Dublin. He completed both his internship and residency in internal medicine as well as his fellowship training in gastroenterology and internal medicine at St. James's Hospital in Dublin. In 1995, Dr. Goggins came to the Johns Hopkins School of Medicine to study under Scott Kern, M.D., as a postdoctoral research fellow in the Division of Gastrointestinal Pathology in the Department of Pathology,

and as a clinical fellow in the Division of Gastroenterology and Hepatology in the Department of Medicine. In 1997, he was awarded his doctoral degree by Trinity College in Dublin. Dr. Goggins joined the Johns Hopkins faculty in 1999 as an instructor in pathology and oncology. That same year, he was

promoted to assistant professor of pathology and oncology, and established the Pancreatic Cancer Early Detection Research Laboratory to develop novel screening tests for early pancreatic cancer. Dr. Goggins was promoted to associate professor in 2003, and to full professor in 2008. Dr. Goggins has written and co-authored more than 250 peer-reviewed publications and authored more than two dozen book chapters.

In 2007, he was named by

Thomson Reuters Essential Science Indicators as the sixth most highly cited pancreatic cancer scientist over the past decade, and he has served on numerous national advisory committees on pancreatic cancer.

During the dedication ceremony, Dr. Hruban told the more than 100 guests, "Mike's approach throughout his career has been marked by collaboration. We are so fortunate to have him at Johns Hopkins."

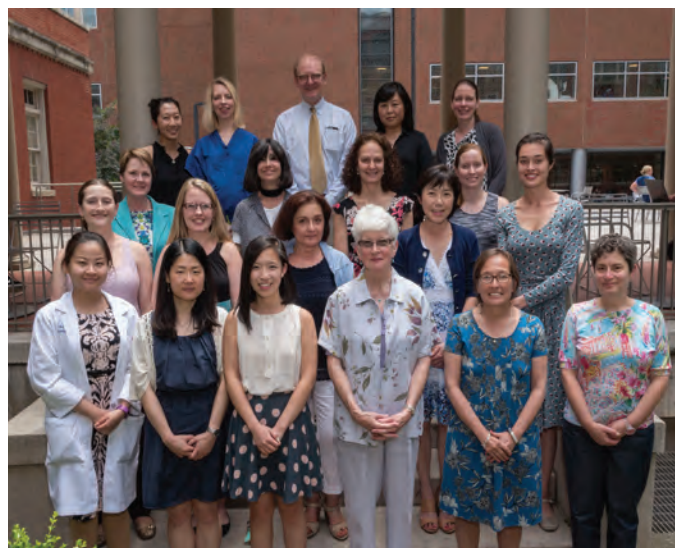
Officiating at the dedication were Paul Rothman, M.D., Frances Watt Baker, M.D., and Lenox D. Baker, Jr., M.D., Dean of the Medical Faculty, and Chief Executive Officer of Johns Hopkins Medicine; and Sunil Kumar, Ph.D., Provost and Senior Vice President for Academic Affairs at The Johns Hopkins University.



Sunil Kumar, Michael G. Goggins, Paul Rothman, Ralph H. Hruban

THE WOMEN DOCTORS LUNCHEON

For the second year in a row, the women professors, housestaff, fellows, and assistants in the Department of Pathology enjoyed an al fresco luncheon in the Phipps garden area. The faculty mentored and shared some of their experience and lessons for a successful career. Dr. Hruban noted some of the many contributions of female faculty to the Department, and congratulated everyone for their accomplishments and contributions to Johns Hopkins Medicine.



Charles G. Eberhart, M.D., Ph.D., was named the inaugural Charlotte A. Wilson and Margaret K. Whitener Professor on April 27, 2017. Dr. Eberhart holds joint appointments in the Departments of Pathology, Oncology, and Ophthalmology. He also serves as the Director of the Divisions of Neuropathology and Ophthalmic Pathology. This new named professorship was made possible by a generous bequest gift from Margaret K. Whitener, a former Wilmer Eye Institute patient who contributed in memory of her mother, Charlotte A. Wilson.

Dr. Eberhart received his M.D. and Ph.D. degrees from the University of Texas Southwestern Medical Center and completed his postgraduate clinical training in anatomical pathology and neuropathology at The Johns Hopkins Hospital.

In 2001, he joined the Johns Hopkins Pathology faculty, focusing on how brain and eye diseases can be better classified and treated. Much of Dr. Eberhart's research centers on how Notch, Hedgehog, and other signaling pathways involved in normal development drive tumor growth through the regulation of stem cell phenotype.

His work also focuses on identifying new genetic changes in neural and ocular surface tumors.

Dr. Eberhart has a particular interest in pediatric tumors of the brain and eye. He has published more than 250 original research articles on diseases of the brain and eye, and is on the editorial boards of the *Journal of Neuropathology & Experimental Neurology*, *Neuro-Oncology*, and *Brain Pathology*.

"Charles is an outstanding example of the kind of faculty member deserving of this honor and his achievements are precisely the type of work that an endowed professorship is meant to support," said Ralph H. Hruban, M.D.

Also officiating at the ceremony

were Ronald J. Daniels, J.D., LL.M., President of The Johns Hopkins University; Landon S. King, M.D., Executive Vice Dean for the Johns Hopkins University School of Medicine; and Peter J. McDonnell, M.D., the William Holland Wilmer Professor of Ophthalmology and Director of the Wilmer Eye Institute.



Ralph H. Hruban, Landon S. King, Charles G. Eberhart, Ronald J. Daniels, Peter J. McDonnell

CELEBRATIONS



Dr. William Welch, center with goatee, and John D. Rockefeller, Jr., center with hat, at the dedication of PUMC, September 1921



Drs. Haita Wang, Ralph Hruban, and Jei Chen at the 100th anniversary celebration, September 2017

Repeating History

Dr. William Henry Welch served on the Rockefeller Foundation's China Medical Board. The board's mission was to bring Western medical education and practice to China. The board ultimately funded and helped build Peking Union Medical College (PUMC). PUMC, not surprisingly, was modeled after Johns Hopkins. On the left, Dr. Welch stands with John D. Rockefeller, Jr., and the trustees of PUMC. On the right, on the occasion of the 100th anniversary of the founding of PUMC (the cornerstone was laid in 1917), Dr. Ralph Hruban returned to the same spot to commemorate this wonderful anniversary.

PRIMARY FACULTY CHANGES - 2017-2018

New Faculty

Faculty Name	Rank	Division
Mary Kathryn Grabowski, Ph.D.	Assistant Professor	Transfusion Medicine
Parvez Lokhandwala, M.D., Ph.D.	Assistant Professor	Transfusion Medicine
Tricia Murdock, M.D.	Assistant Professor	Gynecologic Pathology (Sibley Memorial Hospital)
Kiyoko Oshima, M.D., Dr.Sc.	Assistant Professor	Gastrointestinal/Liver Pathology
Nicholas Roberts, Vet.M.B., Ph.D.	Assistant Professor	Gastrointestinal/Liver Pathology
Lisa M. Rooper, M.D.	Assistant Professor	Surgical Pathology
Maximillian Rosario, M.D., Ph.D.	Assistant Professor	Immunopathology
Xiaojun Wu, M.D., Ph.D.	Assistant Professor	Hematopathology (JHH-Sibley Memorial Hospital)
Laura M. Wake, M.D.	Instructor	Hematopathology (Sibley Memorial Hospital)
Amanda Carina Barrett, M.D.	Assistant	Surgical Pathology
Alexander A. Berrebi, M.D.	Assistant	Gynecologic Pathology
Michael E. Kallen, M.D.	Assistant	Surgical Pathology
Jason B. Kern, M.D.	Assistant	Surgical Pathology
Chengbao Liu, M.D.	Assistant	Gynecologic Pathology
Abby M. Richmond, M.D.	Assistant	Gynecologic Pathology
Marissa J. White, M.D.	Assistant	Surgical Pathology

Promotions

Faculty Name	Rank	Division
Patrizio Caturegli, M.D.	Professor	Immunopathology
Alexandra Valsamakis, M.D., Ph.D.	Professor	Microbiology
Ashley Cimino-Mathews, M.D.	Associate Professor	Surgical Pathology
Anne Le, M.D., Ph.D.	Associate Professor	Gastrointestinal/Liver Pathology
Karen Sfanos, Ph.D.	Associate Professor	Kidney-Urologic Pathology
Zahra Maleki, M.D.	Associate Professor	Cytopathology

Departures

Faculty Name	Rank	Current Location
William Westra, M.D.	Professor	Professor and Vice Chair, Department of Pathology, Mount Sinai Hospital and Icahn Medical School, New York, NY
Justin Bishop, M.D.	Associate Professor	University of Texas Southwestern Medical School, Dallas, TX
Jessica Forcucci, M.D.	Assistant	Dermatopathology Fellow, Medical University of South Carolina, Charleston, SC
Erik Jenson, M.D.	Assistant	Staff Pathologist (Gynecologic Pathology Specialist), Hospital Pathology Associates, Minneapolis, MN
Johanna Savage, M.D.	Assistant	Assistant Professor, University of Utah Health Hospitals and Clinics, Salt Lake City, UT
Mariam Pezhouh, M.D., M.Sc.	Assistant	Assistant Professor, Northwestern University, Chicago, IL
Yaman Tarabishy, M.D.	Assistant	Staff Pathologist, Peoria Tazewell Pathology Group, Peoria, IL
Kevin Waters, M.D., Ph.D.	Assistant	Associate Pathologist, Cedars-Sinai, Los Angeles, CA



Mary Kathryn “Kate” Grabowski, Ph.D., received a B.S. in microbiology from the Pennsylvania State University and a Master’s of Science in Epidemiology from the Johns Hopkins Bloomberg School of Public Health. Kate went on to receive her Ph.D. from the Johns Hopkins Bloomberg School of Public Health and then completed a postdoctoral fellowship in 2014. Kate joined the Johns Hopkins Department of Epidemiology as an assistant scientist.

Kate’s primary research interests include the epidemiology and transmission dynamics of sexually transmitted viral infections, local geography and structure of sexual contact networks, and viral phylogenetics. Kate’s research focuses on the transmission, prevention, and control of sexually transmitted viral infections in sub-Saharan Africa; however, she is also involved in domestic HIV research largely focused in Baltimore. She is primarily funded through a K01 research fellowship which aims to characterize the role of women in African HIV transmission networks using mixed-methodologies including viral phylogenetics.

She has spent a decade working in sub-Saharan Africa where she has been involved in various infectious disease epidemiological and laboratory-based studies. Kate is also currently a member of the Bill and Melinda Gates funded PANGEA-HIV consortium. PANGEA-HIV aims to generate 20,000 whole genome HIV sequences to understand HIV transmission dynamics and pathogenesis in Africa. Kate joined our faculty as an assistant professor in the Division of Transfusion Medicine on July 1, 2017.



Parvez Lokhandwala, M.D., Ph.D., is originally from Ahmedabad, India. After completing his medical training from The Maharaja Sayajirao University of Baroda in India, he moved to the United Kingdom to pursue an M.S. in molecular genetics from the University of Leicester. He then came to the United States for a Ph.D. in genetics from the Department of Microbiology and Immunology at Penn State University College of Medicine. He stayed at Penn State for his clinical pathology residency training and then came to Johns Hopkins for fellowship training in molecular genetic pathology in 2015, followed by fellowship training in transfusion medicine at Hopkins in 2016.

Parvez will contribute clinically to the divisions of the Blood Bank/Transfusion Medicine, Immunopathology and Molecular Diagnostics. His translational research will focus on the role of molecular immunohematology (MIH) in transfusion medicine, primarily using the cohort of sickle cell disease patients. He will also be actively involved in clinical trials in blood bank and transfusion medicine. Parvez joined our faculty as an assistant professor in the Division of Transfusion Medicine on July 1, 2017.



Tricia Murdock, M.D., joined the Division of Gynecological Pathology as an assistant professor on July 1, 2017, and she is based at Sibley Memorial Hospital. Dr. Murdock received her medical degree from the University of Washington School of Medicine in Seattle and completed her residencies in both pathology and obstetrics and gynecology at the University of Vermont Medical Center in Burlington, Vermont. Prior to joining our faculty, Tricia was an assistant in the Advanced Specialty Training Program in gynecologic pathology here on the East Baltimore campus. At Sibley, her emphasis is on gynecological pathology, particularly uterine serous carcinoma.



Kiyoko Oshima, M.D., Dr. Sc., was born and raised in Tokyo, Japan and attended Tokyo Jikei University School of Medicine. Kiyoko completed her surgical residency at Jikei University, and practiced as a breast surgeon for two years before coming to the United States to work as a postdoctoral research fellow at the Dana-Farber Cancer Institute and the New England Medical Center in Boston. Kiyoko retrained as a pathologist at the University of Illinois Metropolitan Hospitals Group Program. After completing her AP/CP residency, she pursued a blood banking fellowship at the University of Chicago, and a surgical pathology fellowship at the University of California, Los Angeles.

Kiyoko has served as a gastrointestinal/liver pathology specialist at the Loyola University Chicago, St. Louis University, Missouri, and the Medical College of Wisconsin, Milwaukee prior to arriving at Johns Hopkins. Kiyoko has authored a textbook, *Liver Pathology* published by Demosmedical. Kiyoko joined our liver pathology team on April 1, 2017.



Nicholas Roberts, Vet.M.B., Ph.D., joined the Division of Gastrointestinal/Liver Pathology as an assistant professor on July 1, 2017. Nick is originally from Newport, Wales in the United Kingdom and graduated in 2007 with a degree in Veterinary Medicine from the University of Cambridge. He received a Ph.D. in human genetics and molecular biology from Johns Hopkins in 2012, and conducted research at the Ludwig Center under the direction of Drs. Vogelstein, Kinzler, Zhou, and Diaz.

After completing his Ph.D., Nick continued his research as a postdoctoral fellow at Johns Hopkins in the Department of Pathology. Nick’s primary research interest is in the genetic basis of familial pancreatic cancer. Nick’s research utilizes whole exome and whole genome sequencing to identify new familial pancreatic cancer susceptibility genes. He is also a recipient of a K99 Pathway to Independence Award from NCI/NIH that supports his efforts to identify and characterize candidate susceptibility genes using in vitro and in vivo models of pancreatic cancer.



Lisa Rooper, M.D., received her B.S. in communication, summa cum laude, from Northwestern University and her M.D., with honors, from the University of Illinois College of Medicine at Chicago. She then completed her residency in anatomic and clinical pathology here at Johns Hopkins which was followed by an assistant in the Advanced Specialty Training Program in Surgical Pathology. During her training, Lisa won research awards from the North American Society of Head and Neck Pathology and the Papanicolaou Society of Cytopathology. She also was the inaugural recipient of the Pathology Housestaff Resident Teaching Award.

Lisa's clinical focus is diagnostic surgical pathology with an emphasis on head and neck and endocrine pathology. Her research focuses on improving the classification, diagnosis, and prognostication of head and neck and neuroendocrine tumors. She is also interested in quality assurance and cost containment in anatomic pathology, as well as new strategies and technologies for enhancing pathology education. Lisa joined our faculty as an assistant professor in the Division of Surgical Pathology on July 1, 2017.



Maximillian ("Max") Rosario, M.D., Ph.D., is originally from Edmonton, Alberta, Canada. He completed his medical education at University College Cork in Ireland. He then pursued an M.Sc. in integrated immunology at the John Radcliff Hospital, and his D. Phil (Ph.D.) in HIV-1 vaccinology at the Weatherall Institute of Molecular Medicine (WIMM), University of Oxford, England. He was a postdoctoral fellow at the Li Ka Shing Institute of Virology (University of Alberta) in Edmonton, and then moved to Washington University in St. Louis for a clinical pathology residency. After completing his residency, he moved to UCLA for a fellowship in clinical immunogenetics.

Max's clinical contribution will focus on immunopathology. He has a keen interest in translational research related to cell mediated pathology. He hopes to further immunotherapy for leukemia and lymphoma by harnessing the potency of NK cells to kill malignant cells without engrafting. He is also interested in T-cell immunology as related to vaccinology and transplant pathology. Max joined the Division of Immunopathology as an assistant professor on October 9, 2017.



Laura Wake, M.D., joined the Division of Hematopathology as an Instructor on July 1, 2017. Originally from Brookings, South Dakota, Laura graduated from Augustana University in Sioux Falls, South Dakota in 2004. She pursued a Post-Baccalaureate in biology from South Dakota State University in Brookings, South Dakota while working as a teaching assistant in the general biology lab. As a medical student at the American University of the Caribbean in St. Maarten in 2007, Laura worked as a tutor in general anatomy, medical genetics and microbiology, and finished her last two years of medical school at Nassau University Medical Center in Westbury, New York in 2010. Laura began her Anatomic and Clinical Pathology residency in Omaha, Nebraska in 2011, and worked closely with Dr. Dennis Weisenburger and Dr. Wing (John) Chan in the Nebraska Lymphoma Study Group as they studied microRNA expression profiles of aggressive B-cell lymphomas.

In 2015, she began her hematopathology fellowship with Dr. Elaine Jaffe at the National Institutes of Health/National Cancer Institute in Bethesda, Maryland, and worked with the NIH/NCI molecular diagnostic team on a whole exome sequencing project to study recurrent mutations in gamma-delta T-cell lymphomas. At Hopkins, Laura is working closely with residents and fellows in the Hematopathology Division, and continues her work and research on T-cell lymphomas.



Xiaojun Wu, M.D., joined the faculty on September 1, 2017, as assistant professor and will assist on the hematopathology service at The Johns Hopkins Hospital for one year. After that, she will move permanently to Sibley Memorial Hospital where she will lead their hematopathology program.

Dr. Wu received her M.D. from Zhejiang Medical University in China, and her Ph.D. from the University of Alabama. She continued at the University of Alabama for residency training, followed by a fellowship in hematopathology. She then moved to New York where she completed a surgical pathology fellowship at Memorial Sloan Kettering Cancer Center, and subsequently joined the faculty at New York University (2013-2015). Dr. Wu received the 2014 Attending of the Year in Anatomic Pathology Award from NYU. In 2015, she joined the faculty at George Washington University. Dr. Wu has close to 15 peer-reviewed publications, primarily in the field of hematopathology.

NEW TRACKS FOR RESIDENTS OFFER EXCITING OPPORTUNITIES

The Department of Pathology at Johns Hopkins is offering six new elective certification tracks for interested residents. While working with a dedicated faculty member and completing well-defined goals and objectives, residents can gain an additional area of expertise during residency. By utilizing a wealth of opportunities available at Johns Hopkins such as the Physician-Scientist Training Program, the Armstrong Institute for Patient Safety and Quality, the Institute for Excellence in Education, and the Center for Global Health, residents will have the ability to interact and collaborate with national and international leaders. Residents who complete a track will receive a certificate from the Department of Pathology at the end of residency.

The **Physician-Scientist Research Pathway** is designed to increase the number of physician-scientists in Pathology who will be prepared for a career in academic medicine centered on basic science or clinical research. Participants in this track will complete a dedicated year of research utilizing the institutional T32 training grant or equivalent grant. The Department of Pathology at Hopkins has been ranked #1 in NIH funding for nine of the past ten years, and this funding provides a wealth of unique research opportunities. Upon completion, residents in this track will be eligible for the American Board of Pathology's Physician-Scientist Pathway Certification. Faculty mentors include **Drs. Kathy Burns and Charles Eberhart**.

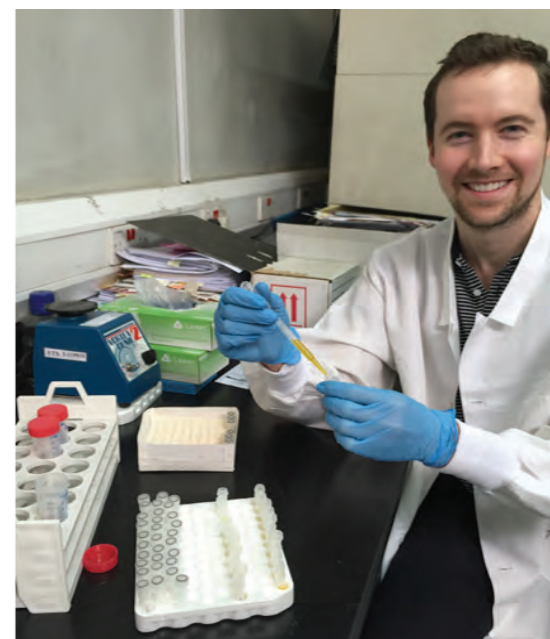
The **Education Track** is designed to provide the next generation of academic pathologists with the conceptual and practical skills necessary to become master educators. Residents will participate in the Institute for Excellence in Education (IEE) at the School of Medicine and will pursue projects related education delivery, curriculum/education product development, and/or education scholarship. The faculty mentor is **Dr. Mike Borowitz**.

The goal of the **Informatics Track** is to train leaders who can contribute to one of the many diverse areas of informatics, including clinical informatics, bioinformatics, and image technologies in pathology. Residents will complete a basic curriculum, develop a new skillset with a mentor, and complete a project in a related area. The faculty mentor is **Dr. Alex Baras**.

The **Quality Improvement Track** will provide the foundational knowledge of quality concepts, techniques, and tools to residents so that they can suggest action to improve the local, regional, and national practice of pathology. Residents will complete a targeted curriculum, be an active member in the Hospital QI Committee, and produce a QI capstone project. The faculty mentor is **Dr. Jody Hooper**.

The **Health Policy/Hospital Management Track** is intended to expose residents to the increasingly important fields of healthcare policy and business management. Residents will complete a basic curriculum and a capstone project in an individual's area of interest. Further, through opportunities within the Department such as participation in the Finance Committee and various leadership meetings, and opportunities at the Carey Business School and Bloomberg School of Public Health, residents will gain invaluable experience to be leaders in the field. The faculty mentor is **Dr. William Clarke**.

The **Global Health Track** is intended to provide exposure to the challenges pertaining to pathology and laboratory medicine in low resource settings. Our Department has many international initiatives which have largely been untapped by resident trainees. This track combines formal and informal teaching with a capstone project to impart both theoretical knowledge and practical experience in global health.



JOHNS HOPKINS BLOOD MANAGEMENT PROGRAM

Johns Hopkins Medicine is on pace to save over \$2.4 million this year by reducing unnecessary blood transfusions, thanks to efforts by the Johns Hopkins Health System Blood Management Program. Starting in 2014, Drs. Steven Frank of Anesthesiology and Critical Care Medicine and Paul Ness of Transfusion Medicine Division of the Department of Pathology began a collaboration supported by the Department of Pathology to identify opportunities to improve transfusion practices and reduce costs. The program is now supported by JHHS and the Armstrong Institute and integrates transfusion management activities at all JHHS hospitals. From the beginning, Drs. Ness and Frank have continuously distilled the available evidence to be applied in the clinical environment for optimal patient outcomes. “Our goals are to be as compliant as possible with evidence-based transfusion guidelines,” says Dr. Frank. “Blood transfusion is the most common procedure performed in U.S. hospitals and one of the top five overused procedures, according to the Joint Commission.” In June this year, the program received the Joint Commission’s new certification for blood management, making Hopkins the second program in the country to be certified.

Using interactive dashboards created by Ann Hoffman, senior director of clinical analytics at the Johns Hopkins Health System, and Tyler Wintermeyer, a clinical analytics systems architect, Frank, Ness and colleagues can easily monitor usage of red blood cells, platelets and plasma by department at each hospital, even drilling down to see practice by individual providers. Reports are distributed monthly to hospital departments to encourage

improved blood utilization and reduce unnecessary transfusions. Frank points out that successful blood management is data-intensive and monitoring for compliance occurs at all five local Johns Hopkins entities.

“We can show physicians their guideline compliance rates for transfusion compared to their peers,” Frank says. “We’ve found that’s the best way to improve practice.”

In addition, when physicians order blood products in the Epic system, they see a best practice advisory supported by two reports in the *New England Journal of Medicine*, with links to the articles. “It tells the providers this is not just our opinion, these are the landmark studies supporting that less is more, in terms of transfusion,” says Frank.

Building on a successful campaign to reduce unnecessary red blood cell use, when Epic went live in July 2016, Drs. Frank and Ness and colleagues added a push to reduce unnecessary platelet transfusions. Platelets are the highest risk and the highest cost of all the major blood components, so it makes sense to reduce platelet overuse as well. A description of the work was also published in the journal *Transfusion*. Publications in academic journals and presentations at national and international meetings have been another major benefit of this collaborative program.

Through these efforts, Johns Hopkins Medicine is on track to save \$647,000 through reduced platelet use, \$1,771,000 through reduced red blood cell use, and \$383,000 through reduced plasma use for fiscal year 2017 compared with fiscal year 2014, before blood management was incorporated. Blood management is a team sport and Transfusion Medicine has played a critical role in the program’s success.



DIVERSITY COMMITTEE

On January 12, 2017, representatives from the Pathology Diversity Committee visited Morehouse School of Medicine in Atlanta, Georgia. The visit, led and organized by Dr. Marissa White, was intended to promote the field of pathology among underrepresented minorities. Drs. White and Alisha Gordy offered a short presentation to first-, second-, and third-year medical students highlighting key aspects of our field and promoting our fully-funded Pathology Rotation for Underrepresented Minorities. Drs. Gordy, Lysandra Voltaggio and Juan Troncoso traveled to the University of Illinois at Chicago on October 10, 2017, to present to their medical students. The presentations (as well as the pizza!) were well-received with many follow-up questions and emails from interested students. The Committee is planning to visit Howard University in early 2018.



With the uncertainties caused by decreased NIH funding and rapidly changing clinical practices, private philanthropy has become critical to our educational and research missions. The smiling faces of the fellowship recipients (opposite page) tell the story. In addition to these fellowships, we have several funds that support trainee and junior faculty research.

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 grantee is **Heather Ames, M.D., Ph.D.** – *“Identification of immunohistochemical markers of treatment resistant glioblastoma.”*

Gary S. Hill, M.D. Renal Pathology Research Award

The Gary S. Hill, M.D. Renal Pathology Fund was established by family and friends in memory of Gary S. Hill, and provides support to medical students, residents, fellows and junior faculty for their research in renal pathology. This year's recipient is **Avi Rosenberg, M.D., Ph.D.** as a junior faculty in Renal/Kidney Pathology.

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

The family and friends of Grover Hutchins have joined together to establish The Grover M. Hutchins, M.D. Memorial Fund. Grover spent 56 years at Johns Hopkins and had a profound impact on our residency training program, and greatly advanced the understanding of cardiovascular and pediatric diseases. The most recent recipient was **Mark Hopkins, M.D.** – *“Using molecular testing to trace the origin of combined hepatocellular-cholangiocarcinoma metastases in an autopsy.”*

Sol Goldman Fellowship in Pancreatic Cancer

The Sol Goldman Fellowship in Pancreatic Cancer was established in 2016 in recognition of Sol's legacy and the support the Goldman family has provided to the pancreatic cancer research efforts here at Hopkins. The inaugural receipt of this award is **Waki Hosoda, M.D., Ph.D.** who is currently working in the laboratory of Laura Wood, M.D., Ph.D., focusing on characterizing the genetic alterations in high-grade precursors of pancreatic cancer.

Risa B. Mann Residents Award

The family, colleagues, and friends of Risa B. Mann, M.D. joined together to create the Risa B. Mann Fund for Residents to honor the life and contributions of Risa to the Department. This fund provides support for resident research and education in the Department of Pathology. This year's recipient is **Margaret Cocks, M.D., Ph.D.** – *“To design and create an educational art exhibit intended to teach skin histology using photomicrographs.”*

Nancy M. Nath Pathobiology Teaching Award

This award was established in 2016. As described on page 4, it is selected by the students and given to a faculty member for outstanding teaching. This year's award recipient is **Lee J. Martin, Ph.D.**

Quality Initiatives and Performance Improvement Research Award

The Quality Initiatives Award was established by the Department of Pathology and is given to the resident with the best quality improvement project for that academic year. Projects are judged by investigation of a baseline measure, application of an intervention, and measurement of results, as well as impact to the Department.

The Fred and Janet Sanfilippo Research Fund

The Fred and Janet Sanfilippo Research Fund honors the many contributions of our former director, Fred Sanfilippo, M.D., Ph.D., 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. This year's recipient is **Meaghan O'Malley Morris, M.D., Ph.D.** – *“Prognostic implications of elevated Tau expression in primary brain tumors.”*

The Mabel Smith Endowment for Resident Research and Education

The Mabel Smith Fund is used to support special courses, research projects, travel, and other needs of our residents. This year's grantee is **Derek Allison, M.D.** – *“Basics of Surgical Pathology iPad app.”*

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.

2017-2018 FELLOWSHIP RECIPIENTS



John K. Boitnott Fellow
Rifat Abdul Ala Syed Mannon, M.D.



Michael J. Borowitz Fellow
Jennifer Bynum, M.D.



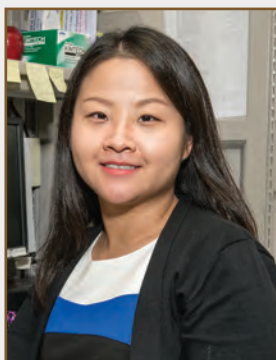
Peter C. Burger Fellow
Bartholomew White, M.D.



Daniel W. Chan Fellow
Stefani Thomas, Ph.D.



Patricia Charache Fellow
Meklit Workneh, M.D., M.P.H.



Jonathan I. Epstein Fellow
Amy Zhou, M.D.



Yener S. Erozan Fellow
Judd Fite, M.D., M.B.A.



Constance A. Griffin Fellow
Junaid Ibrahim, M.D.



Paul M. Ness Fellow
Courtney Lawrence, M.D.



Dorothy L. Rosenthal Fellow
Morgan Cowan, M.D.



John H. Yardley Fellow
Kathleen Byrnes, M.D.

Please consider supporting one or more of our funds or fellowships. If you have any questions, please contact **Dr. Ralph Hruban** (rhruban@jhmi.edu or 410-955-9791). If you would like to donate to one of these funds online, please visit our secure site at <http://pathology.jhu.edu/departments/giving.cfm>, or please send your tax-deductible contributions payable to Johns Hopkins University to:

Department of Pathology
Attn: Rob Kahl
The Johns Hopkins Hospital
600 North Wolfe Street, Carnegie 424
Baltimore, MD 21287-6417

THE THIRD ANNUAL FRED AND JANET SANFILIPPO VISITING PROFESSOR LECTURE

The Third Annual Fred and Janet Sanfilippo Visiting Professor Lecture was given by Dr. Deborah Powell, dean emerita and professor of laboratory medicine and pathology, and director of Medical Student Education at the University of Minnesota Medical School. Dr. Powell is well-known nationally for her expertise in medical education and currently serves on the Board of Advisors of Tufts University School of Medicine. Her talk for the Sanfilippo Lecture, “Moving toward Competency-based Advancement: EPAs in Medical Education,” challenged the audience to think of advancement in medical education in new ways. During the visit, Dr. Powell met with women pathology faculty members, members of the pathology medical education training programs, members of the Johns Hopkins medical education training programs, and spent time with the residents.



Ralph H. Hruban, Fred Sanfilippo, Deborah E. Powell, Janet Sanfilippo, Michael Borowitz



Fred and Janet Sanfilippo with Meaghan O'Malley Morris, the 2017 Fred and Janet Sanfilippo Research Award recipient



Fred Sanfilippo, Tasba Larman, Michael Haffner, Meaghan O'Malley, Janet Sanfilippo

DR. BOB ANDERS' EGGSTRAORDINARY OBSESSION



Bob Anders has an obsession with raising chickens. It began when he and his wife Jennifer (Department of Pediatrics, Johns Hopkins University) moved to Baltimore County in 2005. They had selected a home with farm-friendly zoning ordinances. Jennifer's initial impulse—honeybees—was quickly nixed by their neighbor Mr. Graves. After sharing his horror stories with beekeeping, the Anders decided to consider other possibilities. Chickens sounded more like the experience they were looking for. Bob built a coop and fenced-in pen for six chickens. The chickens arrived by U.S. mail and after nursing them to young adults, about three months, they began laying eggs. With each hen laying five eggs a week, there were plenty to go around. Bob began to share a dozen eggs with whichever resident or fellow covered the GI/Liver Pathology service for the week. They raise a variety of chickens including Red Star, Australorp, Welsummer, and Lacy Wyandotte. Bob

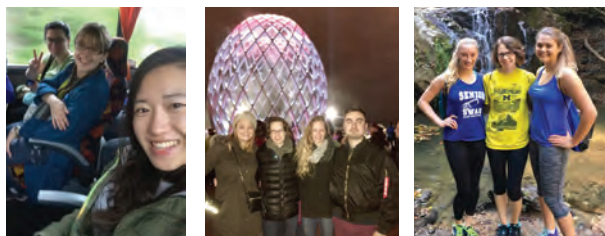
selects chickens based on their delicate feather patterns and plumage color, whereas Jennifer prefers varieties known for egg production. A larger coop and pen currently houses fifteen Australorps. This breed holds a record for 364 eggs in 365 days.

The Lighter Side

The Pathobiology program is not all about the grindstone. The students in the program have a very rich sense of community.

They enjoy their time together and partake in a variety of extracurricular activities including intramural sports, fundraising, camping, and partying. It certainly can be said that while the Pathobiology graduate students are all very hard-working, gifted and talented individuals, they know how to laugh and enjoy and so thoroughly enrich the lives of others (including their program director).

The annual holiday is always a joyous occasion with the students. For the past couple of years, it has been held at Dr. Martin's house. Attendance is great and there are always large measures of cheer, warmth, exciting conversation, and fun, along with food and drink, and an occasional odd neighbor stopping by.



Pathobiology graduate students enjoy their time away from the books

Placement

The career paths for Ph.D. graduates in biomedical research are numerous and diverse. Pathobiology graduates have gone the traditional academic track by doing a basic science postdoctoral fellowship here or elsewhere, and some are now faculty members and researchers at institutions world-wide. Some graduates pursue clinical fellowships or become institutional administrators.

Students also choose biotechnology or pharmaceutical industries and are even entrepreneurial enough to try start-up companies. Others have elected to work as science editors or for consulting firms and the U.S. Patent and Trademark Office.

The Future

There is much to do in addition to continuing our program mission. The program would benefit from an NIH T32 predoctoral training grant. This task is very difficult considering that there can be no scientific/thematic overlap with existing T32 grants in other graduate programs at Hopkins. Nevertheless, plans are in the works to get a competitive T32 application outlined, organized, and submitted. Funds also need to be secured to send students to national meetings as part of their training. This effort will benefit their science and networking. Lastly, we are eager to improve our program's visibility and ranking at institutional and national levels. There is much to be excited about with our Ph.D. graduate training program. Most importantly though, it's our remarkably gifted, engaging, and congenial students and their commitments to learning and excellence that give excitement and inspiration to the program which should be experienced and treasured by all faculty, fellows, residents, and housestaff in the Department. They deserve the time and effort because you might just find a mind greater than Plato's and a soul greater than Shakespeare's among their ranks.



Acknowledgements: The program is grateful for the commitment, support, encouragement, and participation of many faculty members, and the administrative assistance of Tracie McElroy and Stacey Morgan.

DR. YENER EROZAN AND FELLOWSHIP DONORS HONORED

In August 2017, the Division of Cytopathology celebrated the 55th anniversary of Dr. Yener Erozan's arrival at Johns Hopkins as a fellow in the Department of Pathology in 1962. Dr. Erozan served as Director of the Division of Cytopathology from 1989 to 1995. He retired in 2007 and continues to be active in the Division. On this occasion, the Division unveiled a special plaque recognizing donors who have made leadership contributions in support of the Yener S. Erozan Fellowship in Cytopathology Fund. Since 2000, more than 170 donors have contributed to build this important endowment which honors Yener and helps to train future generations of cytopathologists by supporting a postdoctoral clinical/research fellow. Recognized during the celebration were Tehmina and Syed Ali, Carolyn and John Boitnott, Brenda and Yener Erozan, Ann and Leonard Greif Jr., Claire and Ralph Hruban, James Orr, and Sheila and Lawrence Pakula. On hand to help thank these generous donors were three of the seven Erozan fellows—J. Judd Fite, M.D. (2017-2018), Amy Zhou, M.D. (2016-2017), and Ramneesh Bhatnagar Virk, M.D. (2013-2014).



Brenda and Yener Erozan



Nicolas Giraldo-Castillo, M.D., Ph.D., was born and raised in Bogota, Colombia. He received his M.D. from the Universidad de los Andes, and his Ph.D. in immunopathology at the Sorbonne University. His work focused mainly on the discovery and validation of prognostic and theranostic immune-related biomarkers in renal cancer. After living in France for five years, he traveled to the U.S. and completed a postdoctoral fellowship at Johns Hopkins, where he worked on the development of multiplex immunofluorescence technology in skin cancer under the supervision of Dr. Janis Taube. Nicolas's areas of interest include digital pathology, tumor immunology, bioinformatics, and artificial intelligence. He also enjoys reading, plastic arts, hiking, and traveling. Nicolas is pursuing AP/CP training.



Cherub Kim, M.D., was born in Los Angeles, California and grew up in the suburbs of the city. He attended the University of California, Berkeley where he majored in electrical engineering and computer science, as well as mechanical engineering. He continued at Berkeley for two more years to obtain a Masters in mechanical engineering, with an emphasis on the mechanics of materials. After graduating from Berkeley, he began medical school at New York University, where he was one of the inaugural Silverstein Scholarship recipients, and attended medical school on a full scholarship for four years. Between his third and fourth year, he spent one year in the mechanical engineering department of the NYU Tandon School of Engineering under Professor Joo H. Kim. There he developed and helped implement a mathematical model of the energy expenditure of human muscles based on their molecular mechanism of action. In the pathology department at NYU, he helped develop a QR Code-based system for organizing grossing manuals, a web-based template for prostate pathology report generation, and a program to parse pathology reports using natural language processing to generate structured data from the free-text data. In his free time, Cherub reads *The New Yorker*, programs even more, and prints designs with his 3D printer. Cherub is pursuing AP/CP Training.



Regina Kwon M.D., M.P.H., attended Yale after she finished high school in Michigan, where she worked hard to lose the Midwest diphthong. She graduated with a degree in literature and moved to her birthplace, New York, for work. Her career took her from editing and writing to product development and Internet startups. She received several national awards for her work. Regina received M.D. and M.P.H. degrees from the University of Colorado, where she was deeply involved in projects to improve medical education and student life. She served as the national chair of the AAMC Organization of Student Representatives and was selected for membership in the Gold Humanism Honor Society. Her academic interests include medical education, biomarkers, informatics, and decision-making. Regina enjoys reading science fiction and mysteries and learning about religion, art, and behavioral economics. She loves a good word game and believes you can never have too many pens. Regina is pursuing AP/CP training.



Andrew Layman, M.D., is a native of Baltimore and grew up in Dundalk. He completed his undergraduate degree in mathematics and operations research at the U.S. Military Academy in West Point, New York. After graduation, he was commissioned as an officer in the United States Air Force where he served both at home and abroad as a staff scientist and operations analyst. Upon completion of his military service, he worked as a defense contractor in Riyadh, Saudi Arabia, and specialized in the technical design of border defense and surveillance systems. After spending several years in the desert, Andrew returned home to attend the Johns Hopkins University School of Medicine. He pursued a variety of research topics across several departments including Pathology, Otolaryngology, Hematology, and History of Medicine.

For his efforts Andrew was awarded the William Welch Award in Pathology, as well as the ASCP Award for Academic Excellence and Achievement. In his spare time, Andrew enjoys sailing, exploring the outdoors, and rooting for his hometown Orioles and Ravens. He also enjoys DIY projects and is happy to share his homebrewed beer, cider, and wine with anyone brave enough to try it. Andrew is pursuing AP-only training.



J. Stephen Nix, M.D., was born and raised in Hope, Arkansas where he lettered in high school tennis and baseball, and won the divisional state championship in tennis doubles. He attended the University of Arkansas and graduated summa cum laude with honors in English literature. His thesis focused on the relationship between economic structure and gender in the works of Jack London. During medical school at the University of Arkansas for Medical Sciences and a year of research in the Medical Research Scholars Program at the National Institutes of Health, he performed research on various projects including stroke neuroprotection, meningiomas, exosomes, and social media outreach in pathology. He was elected to Alpha Omega Alpha in his junior year and served as president of the SCOPE pathology interest group during his senior year. Stephen enjoys spending time with his wife Fabiola and their cats, Misha and Gustavo, and sports, video games, literature, and creative writing. His favorite authors include Ernest Hemingway, Cormac McCarthy, and William Faulkner. Stephen is pursuing AP/NP training.



J. David Peske, M.D., Ph.D., was born and raised in San Diego, California. He graduated with honors from the University of California, San Diego with degrees in molecular biology and political science. David then switched coasts to earn his M.D. and Ph.D. from the University of Virginia. His Ph.D. research in the laboratory of Dr. Victor Engelhard focused on how the tumor microenvironment controls T-cell infiltration into melanoma. David and his wife Merrilee, their two sons, and their Nova Scotia duck tolling retriever love to spend time outdoors. David enjoys hiking, running, and cycling, and is an avid strategy card and board game player and designer. David is pursuing AP-only training.

GRADUATE TRAINING PROGRAM IN PATHOBIOLOGY 2017-2018 STUDENTS



Alex Beaver was born in Newark, Delaware. He has since lived in many other states including Pennsylvania, Minnesota, Virginia, Ohio, and South Carolina. Alex earned his B.S. in biochemistry at Clemson University in 2016. As an undergrad, Alex worked on basic organic chemistry research where he characterized organometallic compounds. After graduation, he worked at Clemson to research the metabolism of *Trypanosoma brucei*, the causative agent of African sleeping sickness. He explored protein regulation and enzyme kinetics within the glycosomes of procyclic form *T. brucei*. Because of this research experience, Alex became intrigued with the cellular and molecular mechanisms of human diseases. He looks forward to the opportunity to perform translational research on a variety of human diseases. In his free time Alex enjoys playing soccer, volleyball and golf, hiking, and watching Clemson football.



Worarat (Pan-am) Chaisawangwong comes from Pattaya, Thailand. She received her B.Sc. in biotechnology from King Mongkut's Institute of Technology Ladkrabang in Thailand. During her undergraduate years, she developed kefir yogurt from a corn base. She pursued graduate studies and earned a M.Sc. in phytochemistry and pharmaceutical chemistry from Mahidol University in Thailand where she was the recipient of a research grant awarded by the Thailand Research Fund to support her investigation of antioxidants from Siamese neem flowers. Pan-am has an extensive experience in research and development which she gained at the International Research Center of Dutch Mill Group, the largest food and beverage company in Thailand. There she gained expertise in complete product development cycle—from product conceptualization to formulation and clinical studies and regulatory approvals—and focused on products to improve health. Pan-am values a career where she can combine her passion for science with the opportunity to make an impact on human health. To fulfill her dream, she joined the biotechnology program at the Johns Hopkins University in 2015 and earned her second Masters degree. She has a primary interest in the field of microbiota, the immune system and roles of diseases. She is excited to begin her doctoral studies in Pathobiology and plans to use this opportunity to help tackle healthcare challenges. In her free time, Pan-am enjoys cooking and baking and loves to travel and meet new people.



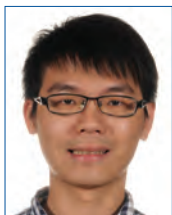
Peter Chianchiano is originally from Vernon, New Jersey. He received his B.A. in 2012 from Drew University, where he double-majored in biology and French. During his undergraduate career, he conducted research on the role of oxytocin in the pathogenesis of post-traumatic stress disorder. He earned his M.S. in biology from New York University in 2014. Peter's interest in pathology grew while at NYU, and his thesis work focused on small molecule therapeutics for Alzheimer's disease, and the role of perivascular macrophages in cerebral amyloid angiopathy. Peter then began to work as a research technologist at the Johns Hopkins University where he investigated the distinction of intrahepatic metastases from multicentric carcinogenesis in multifocal hepatocellular carcinoma. Peter thrives in a translational research setting and is very excited about the opportunities and training in the Pathobiology program at Johns Hopkins. Outside of research, he enjoys spending time with his dogs and cat, gardening, physical fitness, and traveling.



Carli Jones is from Hillsborough, New Jersey, and received her B.S. in biology with a minor in bioengineering from Lafayette College in 2017. In her freshman year of college, she was involved in tumor immunology research on the TLR4 signaling pathway in murine mammary breast cancer cells. During her junior year Carli had the opportunity to study in Copenhagen, Denmark in a biomedical program. The summer before her senior year of college, she conducted research at Fox Chase Cancer Center in Philadelphia in the lab of Dr. Glenn Rall, where she focused on viral infections of the brain. There she was exposed to an interesting “double-infection” project that involved two viruses, and for her senior honors thesis she combined her interests in tumor immunology and polymicrobial infections by subjecting mice to concomitant tumors and parasitic infections to see how this would affect the immune response to each challenge. In her free time, Carli enjoys baking, dancing, exercising, playing with dogs, and laughing with friends.

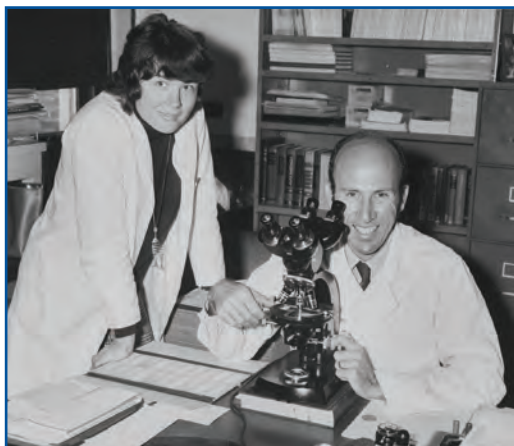


Thomas (Tom) Nirschl is from Herndon, Virginia. He received his B.S. in biology in 2013 from James Madison University. From 2013-2017, he held a research specialist position at the Johns Hopkins University where he investigated the transcriptional profiles of functionally anergic tumor infiltrating CD8⁺ T cells and regulatory CD4⁺ T cells for novel therapeutic targets in primary human prostate, bladder, clear cell renal cell carcinoma, and glioblastoma tumors. This work increased his interest in the unique interplay between the immune system and cancer. Mechanisms utilized by cancer cells to evade immune detection and immune-mediated destruction are of particular interest, with a focus on identifying anti-cancer therapeutic approaches. In his free time, Tom enjoys playing pickup basketball, hiking, and hanging out with friends.



Yeh Wang comes from Taipei, Taiwan. He received his medical degree in 2014 from Fu-Jen Catholic University in Taiwan. After graduation he fulfilled a one-year mandatory military service and completed PGY1 training at Shin Kong Wu Ho-Su Memorial Hospital in 2016. Yeh's interest in cancer and cardiovascular disease grew while taking classes such as pathology and caring for patients in the Hospital. From 2016 to 2017, he worked as a research fellow at the Johns Hopkins University, and participated in research to investigate defects in DNA damage repair related to gynecological cancers. This experience further solidified his interest in translational cancer research. Yeh believes that the Pathobiology program will serve as a vital foundation to explore more about the pathogenesis of diseases, and his goal is to utilize this broad fund of knowledge to improve current management of diseases. In his free time, Yeh enjoys cooking, traveling, bicycling, and hanging out with friends. Yeh is also our Margaret Lee Student this year.

BLAST FROM THE PAST



Who are they?

Answer on page 23



**Have you moved or are in the process of moving?
Have you changed your email address?**

If so, please email Ellen Winslow at ewinslo1@jhmi.edu, and let her know your new address and updated email address. We don't want you to miss an issue of PathWays.

We respect your privacy by never sharing your name with other organizations. If you prefer not to receive mail from us, please send us a note or email telling us so and we will promptly remove you from our mailing list.



In recognition of her dedication and countless contributions to the field of microbiology and infectious diseases, and to the medical profession, Patricia Charache, M.D. was posthumously inducted into the Johns Hopkins Women's Medical Alumnae Association's Hall of Fame during the School of Medicine's 39th Biennial Meeting and Reunion in June 2017. "Dr. Pat," as she was affectionately known, was Director of the Division of Medical Microbiology from 1973 to 1993 and the 30th woman to attain the rank of full professor in the School of Medicine. During her long and distinguished career, she was an incomparable role model and staunch advocate for women physicians and scientists. The accolade, which is on permanent display in the Mary Elizabeth Garrett Room in The Johns Hopkins Hospital, pays homage to her tenacity as a patient advocate, as well as her energy, perseverance, mentorship, warmth, collegiality, and generosity of spirit. In the fall of 2017, the Division of Medical Microbiology dedicated a conference room in the Department of Pathology on the East Baltimore campus in Dr. Pat's memory.



NEW GRANTS AND CONTRACTS AWARDED TO PATHOLOGY FACULTY - 10/6/16 - 10/6/17

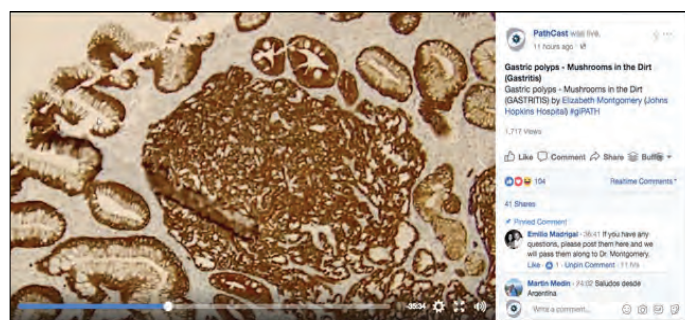
Faculty Member	Award Type	Agency	Dates	Total Funding
Amukele, Timothy	Contract	Namibia Institute of Pathology	9/8/17 - 9/7/20	216,470
Burns, Kathleen	Grant	National Multiple Sclerosis Society	9/1/17 - 8/31/18	44,000
Burns, Kathleen	R01 Grant	NIH/NIGMS	9/15/17 - 8/31/21	1,308,336
Carroll, Karen	Contract	Genepoc, Inc.	7/1/16 - 7/31/17	92,070
Carroll, Karen	Contract	Avasys, LLC	12/9/16 - 5/8/17	17,903
Cihakova, Daniela	Grant	Sjogrens Syndrome Foundation	7/1/17 - 6/30/19	70,000
Cihakova, Daniela	Grant	American Heart Association	7/1/17 - 6/30/19	154,000
Eshleman, James	Grant	The Stringer Foundation	7/1/17 - 6/30/18	150,000
Eshleman, Susan	R01 Grant	NIH/NIAID	11/1/16 - 10/31/21	3,642,786
Halushka, Marc	Grant	American Heart Association	7/1/17 - 6/30/19	154,000
Halushka, Marc	R01 Grant	NIH/NHLBI	8/10/17 - 6/30/21	2,354,455
Hamad, Abdel	Grant	Norman Raab Foundation	7/15/16 - 7/15/17	40,000
Heaphy, Christopher	Grant	North American Neuroendocrine Tumor Society	1/1/17 - 12/31/18	100,000
Huang, Bear	K22 Grant	NIH/NCI	4/1/17 - 3/31/20	455,058
James, Aaron	K08 Grant	NIH/NIAMD	7/3/16 - 6/30/20	434,692
James, Aaron	Grant	Orthopaedic Research and Education Foundation	3/1/17 - 12/31/17	59,072
James, Aaron	Grant	Musculoskeletal Transplant Foundation	7/1/17 - 6/30/20	300,000
James, Aaron	R01 Grant	NIH/NIAMD	8/28/17 - 6/30/22	1,437,442
King, Karen	Contract	Terumo BCT	1/24/17 - 7/24/19	2,361,555
Koliatsos, Vassilis	R01 Grant	NIH/NEI	4/1/17 - 3/31/22	2,544,057
Larman, Ben	Grant	Emerson Collective	3/1/17 - 2/28/19	200,000
Li, Tong	Grant	CART Foundation	7/1/17 - 6/30/19	75,000
Lotan, Tamara	Grant	Department of Defense	9/30/16 - 9/29/19	464,144
Lotan, Tamara	Grant	Department of Defense	9/1/17 - 8/31/20	932,820
Richardson, Andrea	Grant	Breast Cancer Research Foundation	10/1/17 - 9/30/18	250,000
Roberts, Nicholas	R00 Grant	NIH/NCI	7/1/2017 - 6/30/20	747,000
Roden, Richard	Contract	Pathovax, LLC	2/1/17 - 1/31/18	147,710
Roden, Richard	Contract	PapiVax, LLC	8/18/17 - 8/17/18	136,000
Rosenberg, Avi	Grant	National Kidney Foundation	1/1/17 - 12/31/18	49,741
Savonenko, Alena	RF1 Grant	NIH/NIA	5/1/17 - 4/30/22	2,045,937
Schneck, Jonathan	Contract	TEDCO	12/30/16 - 9/29/17	115,000
Sfanos, Karen	Grant	Prostate Cancer Foundation	12/31/16 - 12/31/18	1,000,000
Sfanos, Karen	Grant	Department of Defense	7/1/17 - 6/30/20	1,170,290
Shih, Ie-Ming	Grant	Ovarian Cancer Research Fund	1/1/17 - 2/1/20	900,000
Shih, Ie-Ming	Grant	The Honorable Tina Brozman Foundation	12/20/16 - 12/19/18	200,000
Shih, Ie-Ming	R01 Grant	NIH/NCI	3/1/17 - 2/28/22	1,874,668
Shih, Ie-Ming	Grant	Endometriosis Foundation of America	3/1/17 - 2/28/18	12,500
Simner, Trish	Contract	CDC - IPA Agreement	1/1/17 - 1/31/18	46,807
Simner, Trish	R21 Grant	NIH/NIAID	2/15/17 - 1/31/19	449,407
Simner, Trish	Contract	Check-Points Health BV	4/1/17 - 4/30/18	51,307
Sokoll, Lori	Contract	Abbott Laboratories	8/1/16 - 12/31/17	162,847
Sokoll, Lori	Contract	Tosoh Bioscience Inc.	5/24/17 - 11/23/17	16,797
Sun, Shuying	Grant	Target ALS	1/1/17 - 12/31/17	135,000
Thompson, Elizabeth	Grant	Emerson Collective	3/1/17 - 2/28/19	200,000
Tobian, Aaron	R01 Grant	NIH/NIAID	2/8/17 - 1/31/21	2,148,196
Troncoso, Juan	R21 Grant	NIH/NIA	8/1/17 - 3/31/19	449,907
VandenBussche, Chris	Contract	PapGene, Inc.	9/19/16 - 8/18/17	9,962
Vang, Russell	Contract	Inovio Pharmaceuticals	10/13/16 - 8/12/18	43,000
Vang, Russell	Contract	Inovio Pharmaceuticals	8/2/17 - 10/31/20	34,000
Wong, Phil	Contract	Merck	11/17/16 - 5/17/18	112,660
Wood, Laura	Grant	The Stringer Foundation	7/1/17 - 6/30/18	50,000
Zhang, Hui	Grant	American Foundation for AIDS Research	2/1/17 - 1/31/18	199,444
Zhang, Sean	Contract	T2 Biosystems, Inc.	6/13/17 - 12/12/17	119,702

Total 30,485,742

Education has always been one of the prime driving objectives of our Department. Our outstanding educators embrace new digital media as a way to reach beyond the walls of Hopkins. Towards this end, Drs. Lysandra Voltaggio and Elizabeth Montgomery in GI Pathology have started live broadcasting (aka “PathCast”ing) teaching seminars on Facebook Live. These PathCasts allow our faculty to reach a large audience across the world. These are interactive sessions in which viewers from across the world can have live discussions with our faculty. Interactions were made possible through “Go to meeting” which provided viewers a live audio chat. Comments and questions can also be posted on Facebook. PathCasts are also uploaded to YouTube. This way viewers can have access to the presentation through Facebook (<https://www.facebook.com/pathCast/>), as well as YouTube (<https://www.youtube.com/watch?v=QvXah76dbXw&t>).



This educational initiative heralds yet another new chapter in the Department’s continuous effort to make science, medical education and research reach every corner of the world, with special attention to underserved areas.



NEW JOHNS HOPKINS PATHOLOGY IPAD APPS

We have created two new educational iPad apps!

Drs. Fausto Rodriguez and Charles Eberhart developed The Johns Hopkins Atlas of Surgical Neuropathology, and Drs. Arman Khararjian, Marissa White and George Netto developed The Johns Hopkins Atlas of Prostate Pathology. Each of these profusely illustrated apps contain hundreds of stunning images, an educational algorithm, a “Quiz Me” section, and comprehensive diagnoses albums. Both are now available through the iTunes Store.

We hope you enjoy these teaching tools, and be on the lookout for our soon-to-be released apps on eye pathology and ovarian pathology!

The Johns Hopkins Pathology Atlases currently available in the Apple App Store!

- The Johns Hopkins Atlas of Pancreatic Pathology
- The Johns Hopkins Atlas of Pancreatic Cytopathology
- The Johns Hopkins Atlas of Neuropathology
- The Johns Hopkins Atlas of Prostate Pathology

The Johns Hopkins Pathology Atlases available soon

- The Johns Hopkins Atlas of Eye Pathology
- The Johns Hopkins Atlas of Ovarian Pathology



Johns Hopkins Pathology Atlases for the iPad



Ashley Cimino-Mathews M.D., was chosen as one of the “40 Under Forty Honorees” by the American Society for Clinical Pathology. The award was given in recognition of her leadership and extraordinary contributions to the profession of pathology or laboratory medicine.



Jonathan Epstein, M.D., was honored by Baltimore Magazine as a Top Doctor in 2016 and in 2017. The list is voted on by peers and represents about 5 percent of the roughly 12,000 physicians licensed to practice in the Baltimore area.



Eric A. Gehrie, M.D., was also chosen as one of the “40 Under Forty Honorees” by the American Society for Clinical Pathology. The award was given in recognition of his leadership and extraordinary contributions to the profession of pathology or laboratory medicine.

Karen E. King, M.D., was awarded the American Association of Blood Bank’s 2017 President’s Award in October 2017, in recognition of her tremendous service to AABB through education, mentorship and committee appointments, including associate editor of *Transfusion*. She was recognized for her leadership in apheresis and organ transplant immunohematology, and her devotion to training junior members in the field of transfusion medicine.



Ralph Hruban, M.D., was part of the “Liquid Biopsy Team” that received the 2017 Team Science Award from the American Association for Cancer Research at its annual meeting. This award recognizes an outstanding disciplinary research team for its innovative and meritorious scientific work that has advanced or will likely advance cancer research, detection, diagnosis, prevention or treatment. Dr. Hruban was also honored by Baltimore Magazine as a Top Doctor in 2017.

Armen Khararjian, M.D., M.B.A., was awarded the Frank L. Coulson, Jr. Award for Clinical Excellence by the Miller-Coulson Academy of Clinical Excellence. This honor is awarded annually to the resident in each program who exemplifies the highest level of clinical excellence.



Mark Marzinke, Ph.D., received the American Association for Clinical Chemistry’s 2017 Award for Outstanding Scientific Achievements by a Young Investigator. This award recognizes and encourages the professional development of a young investigator who has demonstrated exceptional scientific achievements early in his or her career. It is given based on the degree of originality exhibited in the individual’s creative process and the significance of the research conducted relevant to the field of clinical laboratory medicine. It is conferred upon an individual who has the potential to be an outstanding investigator.

Edward McCarthy, M.D., was honored by Baltimore Magazine as a Top Doctor in 2016. The list is voted on by peers and represents about 5 percent of the roughly 12,000 physicians licensed to practice in the Baltimore area.



Trish Simner, Ph.D., has been selected as the recipient of the 2018 American Society for Microbiology Diagnostic Young Investigators’ Award. The award recognizes research excellence and potential to further the educational or research objectives of an outstanding young clinical scientist. The award will be presented at the annual ASM Microbe Meeting in Atlanta, Georgia in June 2018.

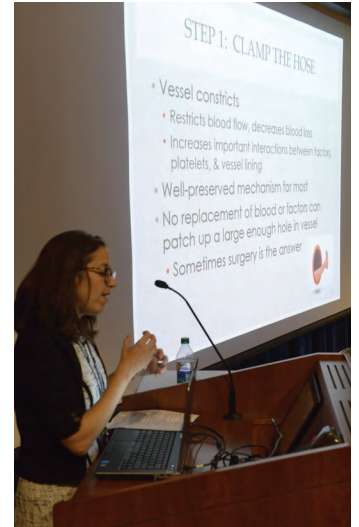
Laura Wood, M.D., Ph.D., received the 2017 Jack Yardley Young Investigator Award at the annual meeting of the United States and Canadian Academy of Pathology held in San Antonio in March 2017. This award recognizes seminal contributions, or a significant body of published work, by an investigator under the age of 50 that advances the field of gastrointestinal pathology.



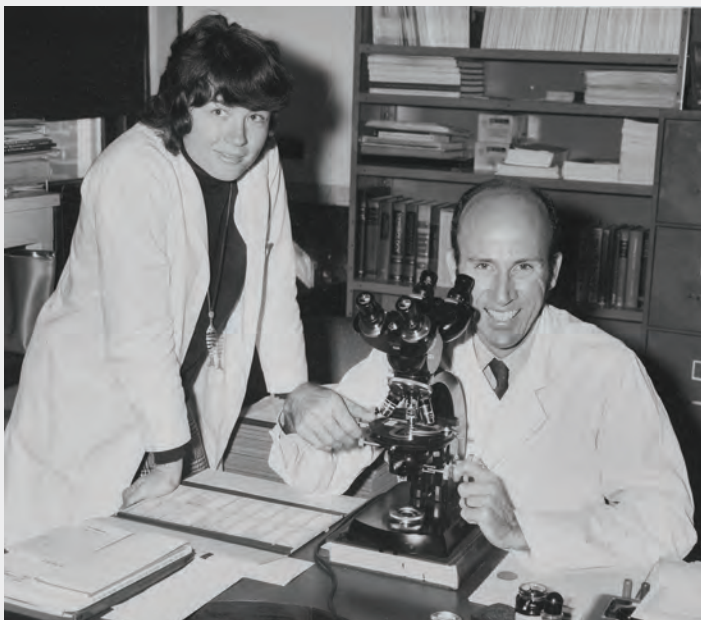
2017 marked the fifth year of the Pathology Educational Symposium, a three-day continuing education event for Hopkins Pathology staff to learn about a variety of pathology and non-pathology topics. The keynote speaker was Dr. Edward McCarthy whose lecture “Music and Medicine,” illustrated and underscored many deep connections between these two disciplines, from past centuries to current research. New this year was our “electronic” poster session with a web link to review posters; also several presentations were videotaped.

A noteworthy aspect of the Symposium is that the majority of speakers were Pathology faculty, fellows, or residents. Besides Dr. McCarthy’s talk, other well attended presentations included ones by Dr. Chris VandenBussche on the topic of natural killer cells and cancer, Dr. Jody Hooper on autopsy techniques and fascinating cases, Dr. Nikki Parrish on essential oils and future antibiotics, Dr. Tim Amukele on music for prevention and cure, Mr. Jon Christofersen on a walking tour of the Dome in pictures, Dr. Kevan Salimian on personalized medicine, Dr. Heather Ames on infiltrating gliomas, and Dr. Doreen Nguyen Palsgrove on molecular diagnostic testing.

Lorraine Blagg, co-chair of the Symposium, commented, “Each year the Symposium gets better and better with wonderful speakers and because our attendees are so enthusiastic.” Nearly 700 people participated including Johns Hopkins All Children’s staff who watched several live-stream presentations. Plans are already underway for next year’s Symposium.



BLAST FROM THE PAST (from page 18)



Who are they?

Joanne Alsrue and Dr. Gerald Spear
October 1971

Gerald (“Jerry”) S. Spear graduated from medical school in 1952. He was a resident from 1953-1956, and chief resident from 1958-1959. Jerry then joined our faculty (1958-1977). Jerry made many significant contributions to renal pathology (<http://pathology.jhu.edu/departments/about/history/spears2.cfm>). We believe Jerry and Joanne are probably looking at an early kidney biopsy.

Joanne Alsrue was one of two outstanding EM technicians—“keys to our success.”

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CALENDAR OF EVENTS

March 14, 2018, Noon – 4:00 p.m.

2018 Pathology Young Investigators' Day
Turner Concourse
Johns Hopkins University School of Medicine
Baltimore, Maryland

March 18, 2018

Fellowship Fair
United States and Canadian Academy of
Pathology
107th Annual Meeting
Vancouver Convention Centre
Vancouver, British Columbia, Canada

March 19, 2018, 5:30 – 7:30 p.m.

Pathology Alumni Reception
United States and Canadian Academy of
Pathology
Vancouver, British Columbia, Canada

April 23, 2018, 5:30 p.m.

Pathology Awards Presentation
Chevy Chase Auditorium and Arcade Room
The Johns Hopkins Hospital
Baltimore, Maryland

May 11, 2018, 7:00 p.m.

Pathology Awards Dinner
Royal Sonesta Harbor Court
550 Light Street
Baltimore, Maryland

2017 PATHOLOGY YOUNG INVESTIGATORS' DAY AWARDEES

Congratulations to the Top Award Recipients

Basic: Yusuke Kageyama, M.S. and Jonathan Ling, Ph.D.

Clinical: Kevan Salimian, M.D.

Translational: Youngran Park, B.S.

For Excellence in Basic Research For Excellence in Clinical Research

Yusuke Kageyama, M.S.
Jonathan Ling, B.S., Ph.D.
Rizwan Ahmed, Ph.D.
Daniel Ardeljan, B.S.
Nicola Diny, Ph.D.
Aneesh Donde, B.S.
Xuezhou Hou, B.S.
Yingwei Hu, Ph.D.

Kevan Salimian, M.D.
Yunjie Li, M.D.
Mariya Sivay, Ph.D.
Maria Adelita Vizcaino, M.D.
Marissa White, M.D.

For Excellence in Translational Research

Youngran Park, B.S.
David Clark, Ph.D.
Michael Haffner, M.D., Ph.D.
Ventzislava Hristova, Ph.D.
Yohan Suryo Rahmanto, Ph.D.