JOHNS HOPKINS MEDICINE

DECEMBER 2023

PATHWAYS

JOHNS HOPKINS PATHOLOGY

Neuropathology Division: New Faculty Provide Fresh Insights Into The Nervous System

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DIRECTOR'S CORNER

The department has had another simply wonderful year! For the 15th time in the past 16 years, we ranked number one among all pathology departments in NIH funding! The Blue Ridge Institute for Medical Research ranked Hopkins Pathology #1 with $47,831,912 in NIH research funding in 2022. In addition, our faculty members Sharon Nachman, Susan Eshleman, Mary Glenn Fowler, and Tzyy-Choou Wu were recognized as being among the top-funded pathologists in the world.

As I've noted in past years, more important than the dollar amount is the impact the research generated by the department has had in fighting human suffering. To give one example, Dr. Mark Marzinke presented exciting results on the efficacy of long-lasting injections of the anti-HIV drug cabotegravir at the 30th Conference on Retroviruses. Mark's findings suggest that anti-HIV treatments can be given on the same cycle as injectable contraceptives, potentially greatly increasing their use in developing countries. On the education side, our faculty released several new educational iPAD applications (page 21), and we welcomed diverse and talented incoming classes of residents and Ph.D. students (see pages 11 and 13). The incoming class of Pathobiology Ph.D. students is the largest class ever! On the clinical side, as we anticipate the coming "AI revolution," our efforts to digitize diagnostic microscope slides continue full steam ahead. These are exciting times, and the pace in the department is breathtaking!

This year we also welcomed Kelly Cavallio as our new Senior Administrator of Pathology. Kelly is a dynamic and passionate leader, having served 28 years at Johns Hopkins (See page 17). She is already having an impact across the department. As we welcome Kelly, we wish Al Valentine much happiness in his retirement (page 8).

On a sad note, we lost three cherished and much-admired emeritus faculty- Darryl Carter, Donald Price, and Yener Erozan (page 22). The impact they had on the department, on our students and trainees, and on our patients and community is so appreciated. Visit our web page (**https://pathology.jhu.edu/about/news**) for more remembrances of Darryl, Don, and Yener.

Looking forward, we face new challenges. Everyone has certainly read of the Supreme Court's ruling in the *Students for Fair Admissions v. University of North Carolina* and the *Students for Fair Admissions v. President and Fellows of Harvard College* cases. The holistic approach we have taken to the selection of our residents and Ph.D. students, one that emphasizes life journeys over board scores, has helped generate impactful diversity in the department. For example, we have faculty members who are the first in their families to attend college, 56% of our incoming residents are women and 11% are underrepresented in medicine. With the Supreme Court's ruling, this holistic approach to selecting applicants will be even more important than ever moving forward. As Ron Daniels, the President of Johns Hopkins University, wrote, we will continue to work "to reduce the barriers that stand between exceptional students and the promise of equal opportunity."

Beyond holistic approaches to admissions, we continue to support and celebrate diversity, equity, and inclusion at all levels in the department. In a simply beautiful ceremony in Johns Hopkins's new 555 Penn Building in Washington, D.C., Clayton Yates, Ph.D. was installed as the inaugural recipient of the John R. Lewis Professorship in the Department of Pathology (see page 9). It couldn't have been more beautiful. Special guests included Reverend Raphael Warnock, United States Senator from Georgia; Mark Kelly, United States Senator from Arizona; John Miles Lewis, Congressman Lewis's son; and Michael Collins who served as Chief of Staff for Congressman John Lewis for more than two decades. Professor Yates came to the department from Tuskegee University, where he conducted impactful research identifying and addressing the underlying causes of disparities in the outcomes of patients diagnosed with prostate, breast, and pancreatic cancers.

Looking forward, as we help drive rapid advances in medical knowledge, we will embrace diversity in all of its forms, and, in so doing, we will help fight human suffering.

Ralph H. Hruban, M.D.
Baxley Professor and Director

Cover Photo: Drs. Lucas, Morris and Ho

Neuropathology Division In Focus

Faculty, trainees and staff of the Neuropathology Division

OVERVIEW

The Neuropathology Division is focused on diagnosing and developing better treatments for diseases of the nervous system by improving our understanding of their pathobiology through clinical and experimental interrogation. Our 10 faculty work on a broad range of conditions, including Alzheimer's disease, Parkinson's disease, ALS and other neurodegenerative diseases, brain tumors, traumatic and ischemic brain injury, seizure disorders, and peripheral nerve disease. The faculty are assisted by over 50 clinical and research fellows, technicians, graduate and undergraduate students, and administrative staff. The division is based in the 5th floor of the Ross Research Building. This location includes the Brain Resource Center and all of the laboratories dedicated to research on neurodegenerative diseases and other non-neoplastic conditions. Diagnostic Surgical Neuropathology is located in the Zayed Building, while the Brain Tumor Research Group is housed on the 4th floor of the Smith Building, along with Ophthalmic Pathology.

HISTORY

The division was founded in 1971 by Dr. Donald L. Price. Dr. Price also directed the Johns Hopkins Alzheimer's Disease Research Center from its inception in 1984 until his retirement in 2009, when Dr. Charles Eberhart took over division leadership. Dr. Price and colleagues made numerous fundamental contributions to our understanding of the cellular and molecular basis of Alzheimer's disease, Parkinson's disease, ALS, and peripheral neuropathies. He recruited an outstanding initial group of faculty and trainees, and established Johns Hopkins as one of the premier centers globally for neuropathology research and training. Many of these early Division members became leaders at other institutions, including Drs. Sam Sisodia, Dan Brat, David Borchelt, Lary Walker, and Nancy Muma. Others, including Drs. Lee Martin, Phil Wong, Juan Troncoso and Vassilis Koliatsos, became leaders within the Hopkins community. They remain on faculty and help form the core of our research and clinical groups. The Department of Pathology recently hosted a special scientific symposium in honor of Don Price, and a memorandum was published in Molecular Neurodegeneration (https://rdcu.be/drvBj).

In its initial decades, the division focused mainly on autopsy pathology and research, with diagnosis of surgical specimens largely performed in the division of Surgical Pathology. That changed in 1993 with the arrival of Dr. Peter Burger, one of the premier surgical neuropathologists in the world. Dr. Barbara Crain arrived from Duke shortly after Dr. Burger, and was a key member of the neuropathology autopsy service for several decades. Dr. David Nauen has subsequently played a similar

Meaghan Morris reviews slides from a neurodegenerative disease case with her fellow, Fernanda Rodriguez, and technician, Haidan Guo

role. The tradition of clinical and research excellence they and others established continues, with the ongoing arrival of new faculty members in recent years who bring fresh ideas and expertise to the division. Some of our more recent faculty members are highlighted below.

Drs. Meaghan Morris and Jon Ling joined the faculty in 2020, and Drs. Cheng-Ying Ho and CJ Lucas in 2022. In addition to her clinical work, Meaghan leads a basic research program focusing on understanding the molecular basis for Alzheimer's disease and other age-related dementias. Jon's research combines bioinformatics and genetic engineering to develop therapeutic strategies for age-related neurodegenerative diseases and monogenic disorders. The focus of Dr. Ho's research is on sensory neuropathy, with a particular focus on mechanisms contributing to diabetic neuropathy. Dr. CJ Lucas came to Johns Hopkins in 2022 from UCSF, and has replaced Dr. Fausto Rodriguez (now director of Neuropathology at UCLA) as Director of the Clinical Neuropathology Service. His main academic interest is in brain tumor pathology, with emphasis on molecular neuropathology, pediatric gliomas, and neoplasms arising in patients with tumor predisposition syndromes.

RESEARCH

Our researchers take a multifaceted approach, combining pathological analysis of human specimens, molecular genetic studies, proteomics, the development and use of animal and cell-based models, and most recently the increased use of bioinformatics and spatial transcriptomic approaches.

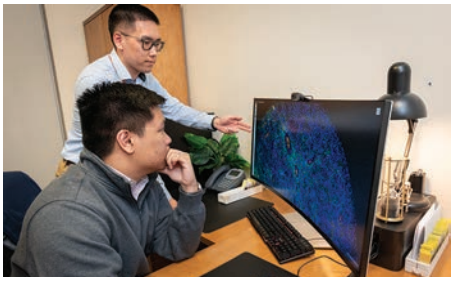
Tumors: Dr. Charles Eberhart's early studies focused on how developmentally important signaling pathways modulate brain tumor initiation and stem cell phenotype, but more recently he has investigated a broader range of neoplastic pathways and phenotypes. Current projects include investigations of molecular modulators of senescence in pediatric gliomas, the role of BCOR in brain and eye tumors, and understanding how the hepatic microenvironment promotes liver metastasis from ocular melanoma. Dr. CJ Lucas frequently works in collaboration with clinical colleagues to leverage next-generation sequencing, DNA methylation profiling, and spatial proteomic and transcriptomic techniques to refine existing codification and risk-stratification schemes. His ongoing collaborative projects include characterizing immune cell populations in high-grade gliomas, targeting therapeutic vulnerabilities in pediatric gliomas, and spatial profiling of malignant peripheral nerve sheath tumors.

Neurodegenerative Diseases: The Division of Neuropathology is a hub for morphological studies conducted by the JHU neuroscience community. Neuropathology personnel staffs the neuropathology core of the JHU Alzheimer's Disease Research Center and the BIOCARD Study, and performs autopsies and brain banking for programs in Parkinson's disease, Huntington's disease, frontotemporal dementia, and ALS. In concert, these activities provide great synergy to our research in neurodegenerative diseases by providing unique and optimally prepared samples for molecular and genetic studies.

Dr. Juan Troncoso's work leverages our extensive clinical materials, and provides invaluable insights into the neuropathology of normal aging and its overlap with neurodegenerative diseases. Dr. Lee Martin is dedicated to unraveling the molecular and cell death mechanisms, including those involving p53, of disorders such as Alzheimer's disease, and amyotrophic lateral sclerosis (ALS) – frontotemporal dementia (FTD). Proteinopathy is believed to be a key mechanism in neurodegeneration, and some of Dr. Martin's work focuses of identifying small molecule activators of the proteasome for therapeutics.

Dr. Philip Wong and his team have generated a range of animal models used for mechanistic investigation and preclinical testing. He also identified how TDP-43 changes result in altering splicing in several neurodegenerative diseases, and his current interests include identifying and translating fluid biomarkers to stratify subtypes of Alzheimer's disease, and validating an AAV gene therapy for amyotrophic lateral sclerosis (ALS) - frontotemporal dementia (FTD). He works closely with Dr. Jonathan Ling, who uses large-scale computational analyses of next-generation sequencing data to help identify novel disease mechanisms, then seeks to validate them using wet lab models in order to translate discovery into clinical practice.

Dr. Vassilis Koliatsos has a history of exploring neurodegeneration based on mechanisms of apoptosis and failure of trophism in the 1990s, then using stem cell



Upper photo: Rohan Choraghe and David Nauen calibrate the light path of their system for photopatterning matrices for neuron growth

Lower photo: CJ Lucas reviews quantitative expression data in a glioblastoma with medical student Daniel Shou

models to explore mechanisms and develop experimental treatments, as well as the connection between exogenous injuries and the onset or progression of degeneration. A major emphasis of his current work is injury/degeneration of the white matter and the role of NAD and stress MAPK signaling as mechanisms of disease and targets for new therapies.

Dr. Meaghan Morris leads a program that examines the molecular basis for Alzheimer's disease and other age-related dementias. Using cell culture models and molecular studies of human tissue, her research focuses on how the changes in neuronal and synaptic function are associated with changes in the protein tau, a key protein in Alzheimer's disease and age-related dementias. Dr. David Nauen's research focuses on characterization of circuits of the human medial temporal lobe in relation to both neurodegeneration and epilepsy. His group is exploring changes in the hippocampal capillary arbor in Alzheimer's disease and the distribution of a synaptic protein in the hippocampal mossy fiber system. In parallel they are developing a method to build in vitro models of neuronal circuits with increased spatial precision.

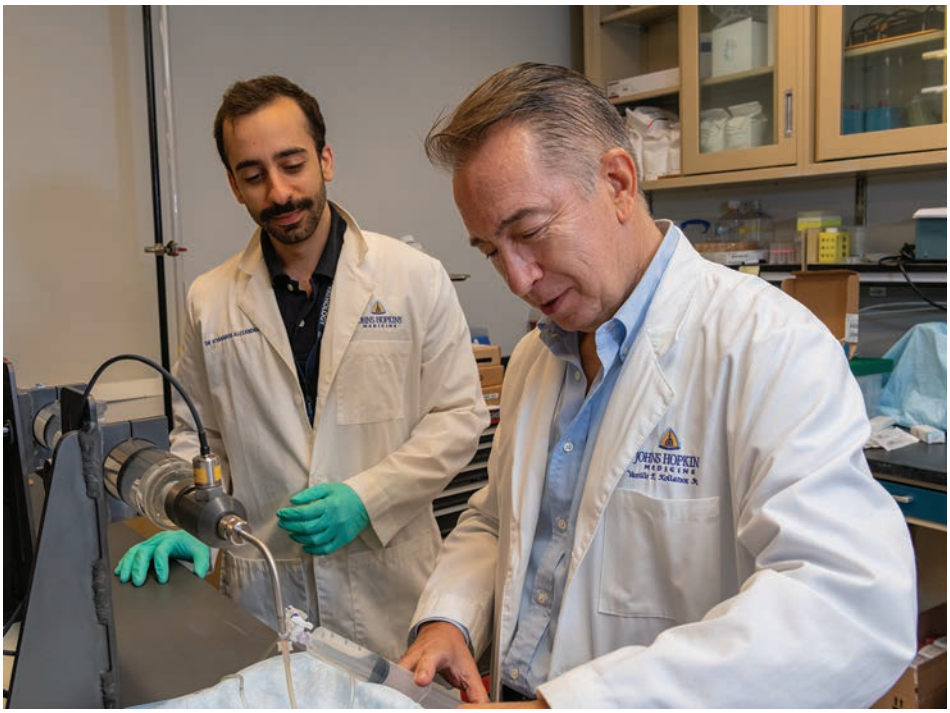
Trauma: Dr. Vassilis Koliatsos studies mechanisms of traumatic axonopathies as they occur in various types of traumatic brain injury and also as models of white matter disease more broadly. Trauma is a cause of chronic disease in and of itself but also a model of neurodegeneration because of the timed onset and progressive pathogeneses that can be followed in a stepwise fashion over time. With Dr. Troncoso he has extended some of his work on animal models to human disease. This work is complemented by clinical diagnostic work performed by Dr. Juan Troncoso at the Office of the Chief Medical Examiner.

Ischemic Disease: Dr. Lee Martin studies neuronal cell death mechanisms and therapeutics in neonatal, pediatric, and adult brain ischemia models. He is also investigating novel molecular, cellular, and brain connectome mechanisms of neonatal epilepsy using continuous EEG, viral-based tract tracing methods, and neuropathology. One experimental therapeutic thoroughly studied by Dr. Martin and his group, started 2 decades ago, is hypothermia. Therapeutic hypothermia has translated to the clinic and is now the standard-of-care for moderate to severe hypoxic-ischemic encephalopathy in many neonatal intensive care units worldwide. Dr. Martin also studies post-ischemic seizure disorders with continuous wireless EEG monitoring in relation to neurodegeneration in a neonatal large animal model.

Peripheral Nerve Diseases: Dr. Cheng-Ying Ho is at the forefront of research into neuromuscular pathology and the neuropathology of infectious diseases. Her primary research interest lies in the pathogenesis and treatment of sensory neuropathy, especially in the context of the skin microenvironment's impact on diabetic neuropathy.

DIAGNOSTIC PRACTICE

The surgical neuropathology service is located in the Zayed tower and provides central expert review for surgical cases from the Johns Hopkins East Baltimore, Bayview, Suburban, and Sibley Hospitals. We also provide intraoperative frozen section assessment for our East Baltimore neurosurgical cases. As has become the standard of practice, many primary intracranial tumors require comprehensive molecular diagnostic workup including next-generation sequencing to identify mutations, RNA sequencing to identify fusions, and DNA methylation profiling for tumor classification. These assays



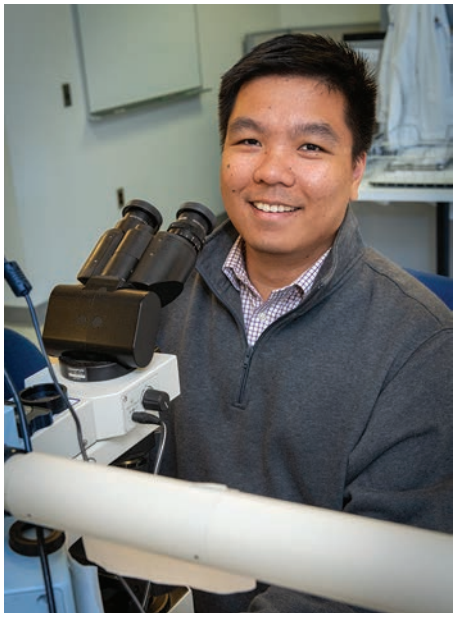
Vassilis Koliatsos and Thanasis Alexandris prepare for a traumatic brain injury study

Charles Eberhart reviews ophthalmic tumor specimens with Ansar Wali and Ann Price for a research study

can detect disease-defining molecular alterations as well as potentially targetable pathways. As such, we work closely with our colleagues in the Molecular Pathology Division to reach a molecularly-integrated diagnosis for each surgical neuropathology case. The neuropathology extramural consult service is very active with many local, regional, national, and international institutions seeking help with diagnostically challenging cases. In addition to fundamental diagnostic services, our faculty also support various multidisciplinary clinical and educational conferences. Key clinical contributions include participation in weekly adult neuro-oncology and pediatric neuro-oncology tumor boards and monthly pituitary conferences. Faculty also present cases at a monthly radiology-pathology correlation conference, organized in collaboration with colleagues in neuroradiology, to allow neuroradiology fellows to see a spectrum of interesting cases.

The autopsy neuropathology service is located on the 5th floor of the Ross Research Building and performs the neuropathology diagnostic evaluations for Johns Hopkins autopsy service, including patients from the Johns Hopkins East Baltimore, Bayview, Suburban, and Howard County Hospitals, as well as providing expert neurodegenerative disease evaluations as part of the JHU Brain Resource Center (BRC). The BRC is part of the Division of Neuropathology; it conducts research autopsies and is the postmortem tissue repository for the neuropathology cores of the Alzheimer's Disease Research Center, the BIOCARD study, and programs in Parkinson's and Huntington's Disease. The BRC also provides neuropathology autopsies for the Baltimore Longitudinal Study of Aging (BLSA) and supports researchers conducting neuroimaging studies both at the School of Medicine (Dr. S. Mori) and the Homewood campus (Dr. M. Miller). Currently, the BRC has approximately 3000 autopsy brains from neurodegenerative diseases and controls.

Dr. Troncoso and Dr. Nauen also conduct neuropathology consultations with the Office of the Chief Medical Examiner of Maryland (OCME). This consultation service is a valuable teaching venue for neuropathology, neurology, and forensic trainees



CJ Lucas is building on the tradition of excellence in Surgical Neuropathology

Charles Eberhart and Suchan Lee examine retinoblastoma research data

EDUCATION AND TRAINING

Training the next generation of neuropathology clinicians and researchers is a central mission, and the division is home to one of the top neuropathology fellowship programs globally. The ACGME accredited two-year program now accepts up to two fellows per year for intensive training in diagnostic neuropathology and research. Hands-on learning is emphasized, with fellows receiving extensive microscopic training using the division's vast case material. Didactic conferences, research meetings, and multidisciplinary case conferences augment the fellows' hands-on experience. In addition, the the department's Pathobiology Graduate Training Program is nested within the Division of Neuropathology with Dr. Martin as the director.

To help meet growing demand for neuropathology expertise, the division recently partnered with the National Institutes of Health to expand the fellowship program. One benefit of this new collaboration is access of neuropathology fellows to the methylation profiling and bioinformatics resources at NIH. This technology is playing an increasingly critical role in brain tumor diagnostics, and its use may soon extend to a range of other types of cancer. All our fellows rotate for several months on the NIH molecular service. In addition, the NIH has begun to sponsor some fellows, which will give us the resources to increase the number of our neuropathology trainees. ■

NEW FACULTY

Dao-Fu Dai, M.D., Ph.D. received his M.D. from Kaohsiung Medical University, Taiwan, followed by a residency and fellowship training in clinical cardiology at National Taiwan University Hospital. After coming to the US, he received his Ph.D. at the University of Washington in Seattle in the graduate program - Molecular Basis of Disease. During this time, he studied under Dr. Peter Rabinovitch, an expert in the Basic Biology of Aging, and Dr. Michael MacCoss, a leader in the field of quantitative proteomics. Following his Ph.D. training, he completed a residency in anatomic pathology and a fellowship in kidney and cardiovascular pathology at the UW Seattle.

In 2017, he joined the faculty at the Department of Pathology, at the University of Iowa as an assistant professor. During his time there he received a K08 award which successfully transitioned to an R01 grant. His research focuses on mitochondrial and metabolic signaling in aging, cardiac, and kidney diseases, and using mouse and human induced pluripotent stem cells to model human diseases. His clinical and teaching interests include cardiovascular and kidney pathology.

J. David Peske, M.D. Ph.D. grew up in Southern California and attended UC San Diego for his undergraduate education in Molecular Biology and Political Science. He earned his M.D. and Ph.D. degrees at the University of Virginia, where he studied how the tumor microenvironment affects T-cell infiltration and activation. David came to Johns Hopkins for an Anatomic Pathology residency and served as our Chief Resident. He also completed a postdoctoral research fellowship in immunology here, and a clinical fellowship as the Michael J. Borowitz fellow in hematopathology. He joined the faculty as an assistant professor in August 2023, serving as an attending hematopathologist, and focusing his research efforts on understanding how ER aminopeptidases affect antigen processing and shape T-cell responses to infectious diseases and hematopoietic malignancies.

Jonathan Dudley, M.D. is a physician-scientist and molecular pathologist. He received his medical degree from the Johns Hopkins School of Medicine and completed his residency and fellowship training at the Massachusetts General Hospital and Stanford Hospital. He subsequently completed a postdoctoral fellowship with Drs. Bert Vogelstein, Kenneth Kinzler, and Nikolas Papadopoulos in the Ludwig Lab at Johns Hopkins. His research focuses on developing novel molecular diagnostic methods for detecting and classifying cancer from cytopathology specimens. His work has been recognized by the Young Investigator Award from the Association for Molecular Pathology, the Benjamin Castleman Award from the United States and Canadian Academy of Pathology, and the Physician-Scientist Training Award from the Damon Runyon Cancer Research Foundation.

Faculty Changes 2023

NEW FACULTY	Rank	Division
Jonathan Dudley, M.D.	Assistant Professor	Molecular Pathology
J. David Peske, M.D., Ph.D.	Assistant Professor	Hematopathology
Dao-Fu Dai, M.D., Ph.D.	Associate Professor	Cardiac and Renal Pathology
PROMOTIONS	**Rank**	**Division**
Ashley Cimino-Mathews, M.D.	Professor	Surgical Pathology
Andrea Richardson, M.D., Ph.D.	Professor	Surgical Pathology
DEPARTURES	**Rank**	**Current Location**
Marc Halushka, M.D., Ph.D.	Professor	Cleveland Clinic
Michael Borowitz, M.D., Ph.D.	Professor	Retired
Tong Li, Ph.D.	Assistant Professor	NIH

Allen Vallentine Retires

After 42 years of dedicated service to Johns Hopkins, Allen Valentine retired from his position as senior administrator for the Department of Pathology as of July 1, 2023. Throughout his tenure, Al advanced the role of the clinical pathology laboratories and their partnership with departments across the institution. He played a major role in the continued advancement of our testing capabilities and was instrumental in bringing College of American Pathologists accreditation to Johns Hopkins. One of Al's greatest legacies was the investment he made in our people as the driver behind a unique educational program to meet the needs of our extraordinary pathology staff. Our first annual pathology symposium was held in 2013 and we marked its 10th anniversary last year by renaming it "The Allen Valentine Pathology Educational Symposium" to honor Al. You can read about this year's event on page 23. Al was an incredible leader. During snowstorms and emergencies, he would visit various laboratories to check on his staff. During the COVID-19 pandemic, Al's leadership was on full display as he led a dedicated team of pathology managers and staff through the many challenges brought on by the global crisis, enabling laboratory staff to process more than 1.75 million tests for the SARS-CoV-2 virus utilizing multiple platforms and test types which helped guide the treatment and care of countless many patients and families. Al's thoughtfulness and inventiveness, compassion and kindness, and his expertise and sense of humor will all be greatly missed. ■

Celebrating Dr. Michael Borowitz's Retirement

The department and school of medicine celebrated Dr. Michael ("Mike") Borowitz on the the occasion of his retirement!

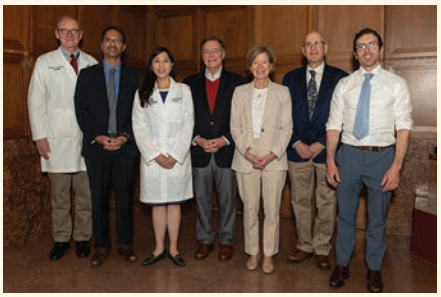
Mike joined the Hopkins family in 1993, and for more than 30 years, he has served many roles within the department, such as Director of the Division of Hematopathology, Deputy Director for Education, Deputy Director for Clinical Affairs, and, most recently, as Executive Deputy Director of the department. He also served as the CLIA director for Johns Hopkins Hospital for the past 9 years.

On top of all of this, he published more than 300 articles and book chapters, with a particular interest in flow cytometry. For the past 25 years, he has applied flow cytometry to study minimal residual disease in acute lymphoblastic leukemia and has authored several consensus publications on the classification of leukemia. His work in flow cytometry was recognized with the Wallace Coulter Award

from the International Society of Clinical Cytometry in 2005.

A dedicated medical educator, he has mentored nearly 50 fellows and trained countless residents and medical students. He has been recognized three times with the Johns Hopkins Pathology Residents Teaching Award and the Johns Hopkins Professors Award for Excellence in Basic and Clinical Education. In 2022, Dr. Borowitz received the Michele Raible Award for Undergraduate Medical Education from the Association of Pathology Chairs. In 2023, Dr. Borowitz was named as a founding member of the Academy of Distinguished Pathology Educators of the Association of Pathology Chairs (APC). ■

Sanfilippo Lecture



Anant Madabhushi, Ph.D. gave the 8th annual Fred and Janet Sanfilippo Visiting Professor Lecture on April 24, 2023. Anant's lecture highlighted the promise and potential of artificial intelligence in pathology. The lectureship was also an opportunity to recognize Drs. Annie Wu and Eitan Halper Stromberg, the 2023 and 2021 recipients of the Sanfilippo Research Awards.

JOHN R. LEWIS PROFESSORSHIP

On October 4, 2023, the Department of Pathology celebrated the dedication of the John R. Lewis Professorship in Pathology and the installation of Clayton C. Yates, Ph.D. as its inaugural recipient. The ceremony was held at Johns Hopkins University's newly opened 555 Pennsylvania Avenue building in Washington, D.C., just blocks from the United States Capitol where the late Congressman Lewis worked steadfastly for more than three decades to defend and build upon key civil rights gains of the 1960s and to champion critical research for minority health and health disparities.

The Lewis Professorship was established through the generosity of anonymous donors to honor Congressman Lewis's lifetime of dedicated and impactful service.

The dedication ceremony—at which Dr. Yates was presented with the professorship medallion—featured tributes to Congressman Lewis by Reverend Raphael G. Warnock, United States Senator from Georgia, and Michael E. Collins, former Chief of Staff to Congressman Lewis. Other speakers included Landon S. King, M.D., Executive Vice Dean, Johns Hopkins University School of Medicine; Anthony A. Anderson, Vice Chair of the Johns Hopkins University Board of Trustees; and Drs. Ralph Hruban and Clayton Yates. Also joining the celebration were Congressman Lewis's son, John Miles Lewis, and Mark Kelly, United States Senator from Arizona. ■

United States Senator from Arizona, Mark Kelly, and Clayton Yates, Ph.D.

Reverend Raphael Warnock, United States Senator from Georgia (Photo credit: Tony Powell)

From left to right: John Miles Lewis, Johns Lewis's son; Reverend Raphael Warnock; Clayton Yates, Ph.D.; Ralph Hruban, M.D.; Landon King, M.D.; Executive Vice Dean, Johns Hopkins Medicine; Anthony Anderson, Vice Chair, Johns Hopkins University Board of Trustees; Michael Collins, Chief of Staff to Congressman Lewis; Mark Kelly, United States Senator from Arizona (Photo credit: Tony Powell)

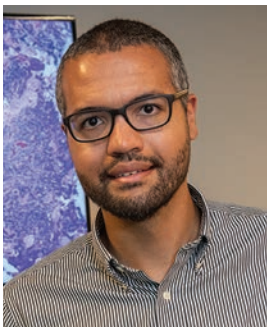
YOUNG SCIENTISTS IN TRAINING PROGRAM

The department hosted twelve Johns Hopkins Summer Jobs Program interns in our laboratories at Greenspring Station, JHH Core Lab, JHH Flow Cytometry, JHH Transfusion Medicine, and JHH Anatomic Pathology, including the Archives, Reference Pathology, Gross Room, Pathology Send-out Office, and the Consult Office. We also had 24 MERIT scholars join Pathology for laboratory tours, working with our faculty, and participating in our weekly Pathology Education Day. Dr. Avery hosted six MERIT scholars who were able to experience the JHH Microbiology Laboratory through delightful and informative tours given by Ava' Roberts.

Private philanthropy is critical to our educational and research missions. The smiling faces of the fellowship recipients below tell the story. In addition to these fellowships, there are several funds that support trainee and junior faculty research.

FELLOWSHIP RECIPIENTS 2022-2023

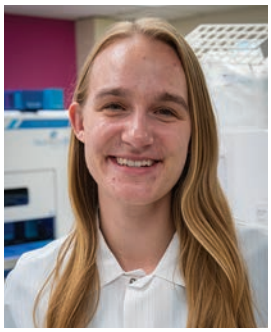
John K. Boitnott Fellow in Liver Pathology
Yujie Zhang, M.D., Ph.D.



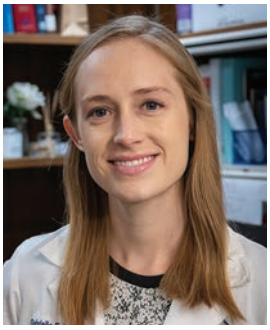
Michael J. Borowitz Fellow in Hematopathology
Kevin Toomer, M.D., Ph.D.

Breast Pathology Fellow
Rebecca Wingfield, M.D.

Daniel W. Chan Fellow in Clinical Chemistry
Ashley R. Rackow, Ph.D.



Patricia Charache Fellow in Medical Microbiology
Shannon Murphy, Ph.D.



Yener S. Erozan Fellow in Cytopathology
Gabrielle Bailey, M.D.

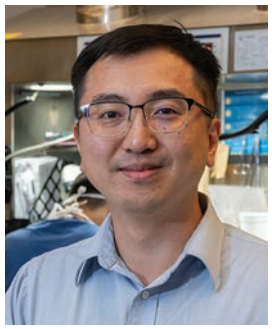
Sol Goldman Fellow in Pancreatic Cancer Research
Fatemeh Shojaeian, M.D., M.P.H.

Constance A. Griffin Fellow in Molecular Pathology
Efrain Ribeiro, M.D., Ph.D.

Paul M. Ness Fellow in Transfusion Medicine
Chinelo Onyenekwu, M.D.

Virginia O'Leary & John C. Wilson Fellow in Autoimmune Disease Research
Solmaz Roshanmehr, M.D.

Dorothy L. Rosenthal Fellow in Cytopathology
Ashleigh Graham, M.D., M.S.



John H. Yardley Fellow in Gastrointestinal Pathology
Tom Zhe Liang, M.D.

FUNDING OUR FUTURE

Please consider supporting one or more of our funds or fellowships. If you have any questions, please contact the Pathology Development and Alumni Relations Office (**HopkinsPathology@jhmi.edu** or 443-287-7949). If you would like to donate to one of these funds, please visit our secure site at **https://secure.jhu.edu/form/pathol**, scan the QR code at the right, or send your tax-deductible contributions payable to "Johns Hopkins University" to:
Department of Pathology | Johns Hopkins Medicine | 550 North Broadway, Suite 701B |Baltimore, MD 21205

PATHOLOGY INCOMING HOUSE STAFF 2023-2024

Nicole Bracewell grew up in Satellite Beach, FL, watching the rockets go off and rowing along the Indian River Lagoon. She earned her B.S. in biology and B.A. in anthropology at the University of Florida. Nicole then attended the University of Oxford in the first cohort of Frost Scholars to receive her M.Sc. in archaeological sciences. Her graduate research focused on the perimortem interval and its relation to changes in collagen content in bone. After returning to the U.S., she worked as a medical assistant in Mobile, AL, which is where she first discovered her interest in pathology. Nicole earned her M.D. from the University of Tennessee Health Science Center in Memphis, where she tutored pre-clinical students and volunteered at Clínica Esperanza, a student-run free clinic that serves the underserved and uninsured Hispanic and LatinX community. This earned her induction into the Gold Humanism Honor Society and the Imhotep Society, and she was later elected to Alpha Omega Alpha. During medical school, Nicole completed her research at the West Tennessee Regional Forensic Center, focusing on toxicology in suicides in Memphis. She is pursuing AP/CP training.

Troi Lake was born in Miami, FL, and has a diverse family background—her father is from a small Caribbean island, Saint Kitts and Nevis, and her mother is Native American. Troi received her B.A. in psychology, with a focus on neuropsychology. She then earned her M.D. from Saint James School of Medicine in Anguilla where she reconnected with her extended family and her culture. While in medical school, Troi decided she wanted to gain a better understanding of the healthcare system by obtaining a master's degree in healthcare administration from Southern New Hampshire University in October 2018. Troi is pursuing AP/CP training.

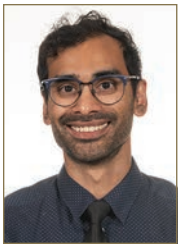
Alicia Sandoval was born and raised in Phoenix, Arizona, and completed her bachelor's degree in forensic science at Arizona State University before earning her M.D. at the University of Arizona. Throughout her education, Alicia spent a significant amount of time with the Office of the Medical Examiner, which kindled her passion for forensic pathology. Her research interests include forensic pathology and forensic limnology. Alicia also has a passion for advocacy and hopes to find a way to incorporate it into her pathology practice. Alicia is pursuing AP/NP training.

Sanika Satoskar was born in Boston, MA, and raised in Columbus, OH. She completed a six-year combined bachelor's/medical degree program, earning her B.S. in biology from Youngstown State University and her M.D. at the Northeast Ohio Medical University. As a student intern at the U.S. Food and Drug Administration, she worked in a vaccine research laboratory focusing on the development of a live, attenuated vaccine for Leishmaniasis. Sanika took a gap year during medical school to pursue a master's degree in public health (M.P.H.) at the Johns Hopkins Bloomberg School of Public Health. Just as Sanika started her M.P.H. training, the COVID-19 pandemic began, providing her with several unique opportunities to learn and apply her public health skills in real time. Her thesis focused on head injury trends in the pediatric population during the COVID-19 pandemic. Sanika also worked with the Karnataka Health Promotion Trust based in India, which fostered her interest in global health. She started the Pathology Interest Group at her medical school and served as its Vice President throughout her medical training. Sanika was selected as one of the Society of 67' Kinney Scholars by the Association of Pathology Chairs and elected to Alpha Omega Alpha. She is pursuing AP/CP training.

Yoseph Sayegh was born in Damascus, Syria, moving to the U.S. at a young age. He grew up in South Florida and received his B.S. in microbiology and political science from the University of Miami. After college, Yoseph earned his M.D. from the University of Miami Miller School of Medicine where he developed an interest in ocular oncology, researching the pathophysiology and genetics of intraocular tumors. He spent a year as a research fellow at the Harbour Oncology Laboratory creating unique cell lines and mouse models to help characterize potential therapeutic targets in uveal melanoma and retinoblastoma. During medical school, he was also highly involved in education of others, teaching anatomy to local high school students as well as developing and implementing clinical skills training workshops for other medical students. Following medical school, Yoseph completed a pre-residency clinical fellowship in Ocular Pathology at Bascom Palmer Eye Institute in Miami. He is pursuing AP/CP training.

Katie Sheahon was born and raised in Kansas City, MO. She received her B.A. in French from Wellesley College in Massachusetts before returning home to Kansas City to earn her medical degree from the University of Missouri. Katie completed the first three years of her AP/CP residency as well as a surgical pathology fellowship at the University of California, San Francisco. She also completed a dermatopathology fellowship at Stanford. Her research interests include examining the role of primary cilia and the ciliation index to distinguish histopathologically challenging melanocytic neoplasms such as those with BAP1 loss, ALK-fusion, and the spectrum of blue nevi. Katie moved to Baltimore to be with her family and will be completing Clinical Pathology rotations for her AP/CP training.

Jesse Suben was born in New York City, and grew up in rural Central New York. He earned his B.A. in anthropology from SUNY Albany. Moving to San Diego in 2013, Jesse began working with children with autism and volunteering at the Center for AIDS Research at UCSD. These two experiences led to him to pursue a career in medicine. After completing a post-baccalaureate degree at California State University, San Marcos, Jesse returned to his home state where he earned his M.D. from the Albert Einstein College of Medicine. During medical school, Jesse worked in the Goldstein Lab investigating HIV-infected monocyte transmigration across the blood-brain barrier. He also worked for the Office of Academic Support and Counseling as a tutor and mentor for other medical students. He is passionate about medical education. Jesse is pursuing AP/CP training.



Andrew Sulaiman is from Markham, Canada, and received his B.S. in biochemistry from Carleton University in Ottawa. His undergraduate work sparked a fascination with science and cancer research, leading him to complete his Ph.D. in biochemistry at the University of Ottawa. His doctoral thesis was on novel methods/approaches to target Triple Negative Breast Cancer with a focus on targeting the cancer stem cell populations. Andrew received several awards during his training including the Alexander Graham Bell Canada Graduate Scholarship. Following graduate school, he earned his medical degree from Kansas City University in Missouri. Andrew is pursuing CP-only training.

Yeh Wang was born and raised in Taipei, Taiwan, and received his M.D. from Fu-Jen Catholic University. After graduating, he moved to the United States and spent a year working as a research fellow in the laboratory of Drs. Ie-Ming Shih and Tian-Li Wang, where he learned essential benchwork skills and developed an interest in translational research. This experience led him to earn his Ph.D. from the Pathobiology Graduate Program at Johns Hopkins, where he was a Margaret Lee Fellow and his passion for pathology was cultivated. His research focused on elucidating the earliest molecular events in the development of ovarian high-grade serous carcinoma and applying these findings to the early detection of cancers from Pap specimens. His thesis work earned him a translational research award at the 2022 Pathology Young Investigators' Day. Yeh is pursuing AP-only training.

Donald L. Price Symposium

The Department of Pathology hosted a special scientific symposium in honor of Don Price on November 10, 2023. Colleagues, previous trainees, current faculty, friends and family gathered to honor Don's memory and to celebrate his impact. Keynote speakers included Stanley Prusiner, M.D., from the University of California San Francisco, and Don W. Cleveland, Ph.D., from the University of California San Diego.

GRADUATE TRAINING PROGRAM IN PATHOBIOLOGY 2023-2024

Emily Garrison, D.V.M., is from Boulder, Colorado. She graduated from the University of Colorado with a B.A. in Molecular, Cellular, and Developmental Biology followed by a D.V.M. from Colorado State University. During veterinary school, she worked in a research lab studying canine lymphoma and leukemia and spent a virtual summer at Johns Hopkins assessing the efficacy of a newly developed cryo-ablative device on dermal masses in dogs. Her first introduction to research was in an evolutionary developmental biology lab studying the development of the vertebrate head skeleton. Emily is currently a postdoctoral fellow in the Johns Hopkins Department of Comparative Pathobiology pursuing residency training in veterinary anatomic pathology. Emily is interested in comparative research to advance our understanding of both human and animal disease with a special interest in neoplasia.

Sunyoung Jeong, B.J., B.S., is from Busan, South Korea. She received her B.J. and B.S. degrees from Korea University where she worked on an FDA-approved drug repurposing project for the treatment of influenza viral infection in the laboratory of Professor Manseong Park and discovered a drug that significantly inhibited influenza virus replication. Then as a research intern at Seoul National University in the laboratory of Professor Jinki Yeom, she researched a dormant population of uropathogenic E. coli. This work piqued her interest in global public health. After graduating from Korea University in February 2022, Sunyoung worked for a year at the Federal Research Institute of Nutrition and Food (Max Rubner-Institut) in Germany. There she investigated antimicrobial resistance in gram-negative bacteria under Dr. Gyu-Sung Cho and Professor Charles Franz. To explore the roles of scientists in industry, she then worked at a healthcare startup—Humanscape—where she drafted content on genotype-phenotype relationships for rare and neglected diseases. All these experiences ignited her passion for biomedical research. Currently, her research interests broadly lie in host-pathogen interactions, immune evasion, antibiotic persistence, and the impact of the microbiome on the progression of diseases. Sunyoung is a Margaret Lee fellow for the 2023-2024 academic year.

Chi-Fen Lee, D.V.M., M.S., is from Taiwan. Being born and raised on an island with great biodiversity, she has encountered plenty of beautiful creatures and is fascinated and motivated by them. Chi-Fen earned dual bachelor's degrees in Animal Science and Veterinary Medicine from National Taiwan University. As an undergraduate, she joined the laboratory of Dr. Hui-Wen Chang, where she purified porcine reproductive and respiratory syndrome virus (PRRSV) for the development of an attenuated vaccine. This is when her passion for research ignited. Chi-Fen has a great interest in vaccine development and wildlife pathology, which motivated her to complete a veterinary pathology residency. She also received her master's degree from the Graduate Institute of Molecular and Comparative Pathobiology at National Taiwan University. Her master's thesis was focused mainly on the vaccine development and phylogenetic analysis of PRRSV. In addition to her main subject, she has devoted time to side projects such as discovering a novel hepatopancreatic parvovirus strain and investigating the genetic character of guinea pig liver diseases. After completing her master's degree, Chi-Fen returned to Dr. Chang's laboratory where she evaluated the efficacy of mRNA-based (like the COVID vaccine) and modified live attenuated PRRSV vaccines on animal models. Additionally, she screened, using molecular and histological methods, specimens sent from slaughterhouses to monitor critical animal infectious diseases. Chi-Fen believes in the tenets of "One Health," a concept promoted by the U.S. Centers for Disease Control and Prevention, which holds that to achieve optimal health outcomes, it is necessary to recognize the interconnection between people, animals, plants, and their shared environment. This belief has led her to pursue her Ph.D. in Pathobiology at Johns Hopkins as the next step in her academic career. Chi-Fen is a Margaret Lee fellow for the 2023-2024 academic year.

Cheryl Liu, M.S. grew up in California and obtained her B.S./M.S. in molecular and cellular biology from Johns Hopkins in 2020. While an undergraduate student, Cheryl became interested in neurodegenerative diseases and joined the laboratory of Ted Dawson, M.D., Ph.D., and Valina Dawson, Ph.D. where she studied the alpha-synuclein mediated pathology of Parkinson's disease. After completing her B.S., Cheryl conducted her master's thesis research on the role of neurexin 1-beta in Parkinson's disease progression. After graduating with her master's, Cheryl began working as a research specialist in the laboratory of Christa Habela, M.D., Ph.D., in the Johns Hopkins Department of Neurology. There Cheryl studied the genetic causes of epilepsy using patient-derived stem cells and multielectrode array electrophysiological recording. Through her work, she became very interested in the use of stem cells in the study of disease pathology and the development of potential therapies, leading her to pursue a Ph.D. and further her learning and research in the Pathobiology program.

Hana Minsky, B.S., grew up in Berkeley, California, and earned her B.S. in Global Disease Biology from the University of California, Davis in 2020. Currently, she is pursuing her M.D./Ph.D. in the Johns Hopkins University Medical Scientist Training Program. During college, Hana conducted her practicum research in the laboratory of Dr. Philipp Zerbe, investigating the antifungal properties of diterpenoid molecules (dolabralexins) found in Zea mays. She also served as the Chief Research Associate for the UC Davis Emergency Medicine Research Association Program. After graduation, Hana

continued her exploration of host-pathogen interactions and infectious diseases, working as an assistant research coordinator with the UC Davis Division of Infectious Diseases. In this role, she contributed to clinical trials investigating therapeutics for COVID-19, C. difficile, and various fungal pathogens. Since beginning her studies at Johns Hopkins in 2021, Hana has enjoyed learning more about the role of the immune system in mediating interactions between hosts, microbes, and the environment, all of which are essential for human health. In 2022, she completed a rotation with Cynthia Sears, M.D. and Jessica Queen, M.D., Ph.D., researching the role of polymorphonuclear myeloid suppressor cells in the colorectal cancer microenvironment, as well as the role of enterotoxigenic Bacteroides fragilis in the development of colorectal cancer. Hana will continue her training in the Pathobiology program and further pursue her research interests.

Alexander C. Schulick, M.D., is a Baltimore native, who grew up in Roland Park before moving less than a mile away to attend Johns Hopkins University where he graduated with a B.A. in Spanish and a B.S. in Molecular and Cellular Biology. He spent several summers in the laboratory of Barish Edil, M.D., FACS, and Yuwen Zhu, Ph.D., at the University of Colorado, aiding in the discovery of a novel T-cell receptor co-stimulatory pathway with implications for pancreas and other cancers. This experience solidified Alex's interest in translational science, and he went on to earn his M.D. at the University of Colorado. While there, he studied the role of coagulation indices as a biomarker in pancreas cancer as well as a predictor of donor organ function post-operatively in transplant surgery. He returned to Baltimore for his surgical residency in the Johns Hopkins Department of Surgery and has currently completed three years of training. Alex is pursuing his Ph.D. in the Pathobiology program and aspires to become an academic transplant surgeon-scientist in the future. He is particularly interested in xenotransplantation and excited to be joining the laboratory of Kazuhiko Yamada, M.D., Ph.D., studying tolerance mechanisms of kidney xenografts in the pig-to-baboon animal model.

Tajah, Vassel, B.S., was raised in Ft. Lauderdale, Florida. While earning her high school diploma, she also trained to become a licensed practical nurse. Driven by her interest to understand better the cellular and molecular mechanisms of human disease, she earned a B.S. in Biology from Florida State University. In college, Tajah studied the influence of genetic heterogeneity in colorectal cancer by analyzing tumors with various oncogenic mutations. Following graduation, she worked at Florida State as a research assistant conducting modifier screens, with a focus on the kinome, to discover novel drug targets in genetically complex tumors. Tajah also aided in projects that explored the tumor-promoting role of senescent cells and alternative cancer treatments. After completing the Pathobiology program at Johns Hopkins, Tajah aims to combine her clinical experience and basic science knowledge to conduct translational research.

Samhita Vitta, B.Tech., M.Sc., is from Chennai, India, and she earned her bachelor's degree in biotechnology from SRM Institute of Science and Technology. Her undergraduate research with Vijayalakshmi Ramshankar, Ph.D. at Cancer Institute (WIA) focused on evaluating the anti-cancer effects of an anti-diabetic drug Meshashringi in cervical cancer. During the COVID-19 pandemic, Samhita interned as a content writer on the website Medindia Health Network where she was able to improve her science communication skills. She also interned with Professor A. Sumathy at Sri Ramachandra Institute of Higher Education and Research, helping to evaluate the efficacy of Bacopa monnieri as an anti-cancer agent in prostate cancer. Samhita moved to the United States in 2021 to pursue her master's degree in Biochemistry and Molecular Biology at Johns Hopkins under Alan Meeker, Ph.D., M.A.T. Her primary thesis project focused on evaluating a telomerase-targeting nucleoside analog 6-thio-2'deoxyguanosine, as a potential anti-cancer agent in telomerase-positive and telomerase-negative cells. Samhita is passionate about translational cancer research which motivated her to pursue a Ph.D. in the Pathobiology program.

Our Pathobiology Ph.D. students are trained rigorously in human disease pathology, basic cell biology, molecular biology, genetics, microbiology and mechanisms using real human specimens; their research is continuously benchmarked against this "gold standard" of clinical disease.

This training approach leverages our clinical roots in the Department of Pathology at Johns Hopkins—the #1 NIH-funded Pathology department in the country—which gives our students unparalleled access to human tissues and specimens. Thus, the work of our students remains grounded in human disease pathology from start to finish.

Bowen Wang, B.S., M.S., grew up in Anhui, China. She completed her B.S. in Pharmacology and Biochemistry from China Pharmaceutical University and the University of Strathclyde, Scotland. During college, she developed a passion for translational research, with a focus on cellular and molecular mechanisms of cancer and neurodegenerative diseases. Her undergraduate thesis focused on the regulation of CXCL12 expression through the NF-κB pathway in osteosarcoma development. After graduation, Bowen gained valuable experience working as a research associate in a biotechnology company that focused on pre-clinical research of new drugs treating Alzheimer's disease. This experience provided her with greater insight and confidence in her plans to pursue a career in translational research. She then earned her M.S. in Biochemistry and Molecular Biology at Johns Hopkins where she worked on a study investigating the transcriptional regulation of pancreatic ductal adenocarcinoma (PDAC) progression as her master's thesis project in the laboratory of Linda Resar, M.D. Her research focused on the regulation network of High Mobility Group A1 (HMGA1), with a particular emphasis on the regulation of Fibroblast Growth Factor 19 (FGF19) on PDAC tumor progression and stroma formation. This work revealed FGF19 as a potential therapeutic target for a very aggressive subset of human pancreatic cancers.

What will your legacy be?

A gift from your will, trust or retirement plan will help ensure that the Department of Pathology remains a leader in advancing research and making new discoveries for generations to come. Retirement assets can also be used to fund a gift that will pay you income for life.

To learn more, please contact:
Amy Helsel, Senior Director of Development
and Alumni Relations, Department of Pathology
410-292-4396 | ahelsel@jhmi.edu | giving.jhu.edu/giftplanning

NEW GRANTS AND CONTRACTS AWARDED TO PATHOLOGY FACULTY

10/07/2022 - 10/19/2023

Faculty Member	Award Type	Agency	Dates	Total Funding
Carroll, Karen	Contract	Meridian Bioscience Inc.	02/23/2023 - 02/22/2024	$64,502
Carroll, Karen	Contract	Becton, Dickinson and Company	04/11/2023 - 04/10/2024	$18,916
Carroll, Karen	Contract	Meridian Bioscience Inc.	09/29/2023 - 01/31/2024	$9,910
Chan, Daniel	U01 Grant	NIH/NCI	07/19/2023 - 06/30/2028	$4,063,747
Chan, Daniel	U2C Grant	NIH/NCI	07/20/2023 - 06/30/2028	$4,621,029
Cihakova, Daniela	Grant	American Heart Association	04/01/2023 - 03/31/2028	$400,000
Clarke, William	Contract	Roche Diagnostics International LTD	09/25/2023 - 06/30/2024	$14,410
Demarzo, Angelo	Contract	Movember Foundation	11/10/2022 - 12/31/2025	$75,000
Dudley, Jonathan	K08 Grant	NIH/NCI	07/01/2023 - 06/30/2028	$1,398,040
Eberhart, Charles	Grant	Childrens Cancer Foundation	11/01/2023 - 10/31/2024	$75,000
Eshelman, James	Grant	The Stringer Foundation	07/01/2023 - 06/30/2024	$150,000
James, Aaron	Grant	Technology Development Cooperation	06/30/2023 - 06/29/2025	$345,000
James, Aaron	Grant	Alex's Lemonade Stand Foundation	09/15/2023 - 09/15/2025	$250,000
Kiemen, Ashley	Grant	AACR Lustgarten Foundation - Pancreatic Cancer Research	07/01/2023 - 06/30/2026	$300,000
Koliatsos, Vassilis	R21 Grant	NIH/NINDS	03/01/2023 - 02/28/2025	$450,313
Krummey, Scott	Grant	American Society of Transplantation	01/01/2023 - 12/31/2024	$125,000
Ling, Jonathan	Grant	Alzheimers Association	03/01/2023 - 02/28/2026	$200,000
Meeker, Alan	R01 Grant	NIH/NCI	08/22/2023 - 07/31/2026	$1,690,064
Morris, Meaghan	Grant	Brightfocus Foundation	07/01/2023 - 06/30/2026	$296,426
Morris, Meaghan	Grant	Alzheimer's Association	09/01/2023 - 08/31/2026	$199,740
Mostafa, Heba	Contract	QIAGEN	10/27/2022 - 10/26/2023	$31,715
Mostafa, Heba	Contract	Bio-Rad Laboratories Inc.	11/18/2022 - 12/31/2023	$85,345
Mostafa, Heba	Contract	QIAGEN	03/29/2023 - 03/28/2024	$158,750
Nachman, Sharon	Contract	GlaxoSmithKline LLC	09/16/2023 - 12/31/2027	$10,853,570
Parrish, Nicole	Contract	Thermo Fisher Scientific	02/06/2023 - 02/05/2024	$43,540
Richardson, Andrea	Grant	Breast Cancer Research Foundation	10/01/2023 - 09/30/2024	$225,000
Rosario, Maxim	R21 Grant	NIH/NIAID	01/20/2023 - 12/31/2024	$450,313
Simner, Patricia	Contract	T2 Biosystems, Inc.	5/01/2022 - 10/31/2023	$139,383
Simner, Patricia	Contract	Selux Diagnostics	12/23/2022 - 12/22/2023	$54,544
Sokoll, Lori	Contract	Abbott	10/01/2022 - 11/28/2023	$46,267
Troncoso, Juan	Contract	Boston University	08/17/2023 - 08/16/2024	$5,783
Wong, Philip	Grant	The Leandro P Rizzuto Foundation	07/01/2023 - 09/30/2026	$400,000
Wong, Philip	U01 Grant	Food and Drug Administration	09/15/2023 - 08/31/2027	$1,600,000
Wontakal, Sandeep	K08 Grant	NIH/NINDS	12/01/2022 - 11/30/2025	$700,128
Zhang, Sean	Contract	Affinity Biosensors	10/04/2023 - 10/03/2024	$26,537
Zhang, Sean	Contract	Applied Biocode	10/14/2022 - 10/14/2024	$100,935
			TOTAL	**$29,668,907**

#1 Hopkins Pathology continues to be **ranked number one** among all pathology departments in NIH funding!

AWARDS & RECOGNITION

Lois Arend, M.D., Ph.D., was elected to serve as President of the Renal Pathology Society (RPS) for 2023. The RPS is the only professional pathology society committed to the improvement and dissemination of knowledge regarding the pathology and pathophysiology of renal disease.

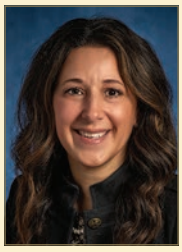
Evan Bloch, MBChB, M.S., was named Editor-in-Chief for the 22nd Edition of the *Technical Manual*, the seminal textbook in transfusion medicine. The new edition is anticipated to be published in three years.

Michael J. Borowitz, M.D., Ph.D., has been named as a founding member of the Academy of Distinguished Pathology Educators of the Association of Pathology Chairs (APC). The Academy honors an exceptional group of accomplished educators who serve as the voice of academic departments of pathology in the U.S. and Canada.

Daniel Brat, M.D., Ph.D., was inducted into the Johns Hopkins Society of Scholars. The Society was founded in 1967 and honors individuals who trained at Johns Hopkins before going on to become leaders in their fields at other institutions.

Kathleen Cho, M.D., Professor of Pathology at the University of Michigan, and a member of the Johns Hopkins Society of Scholars, was named a Distinguished Alumnus of the Vanderbilt University School of Medicine. Dr. Cho was nominated by fellow Hopkins Pathology alumnus Samuel deMent, M.D., who served as her Chief Resident while they were both at Johns Hopkins.

New Senior Administrator of Pathology

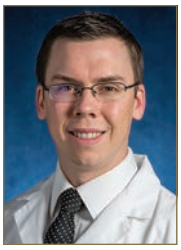


We are pleased to welcome Kelly Cavallio as the new Senior Administrator of Pathology. Kelly joined the department on March 1, 2023, succeeding Al Valentine who retired *(see page 8).*

Kelly is a dynamic and passionate leader, having served 28 years at Johns Hopkins. Before joining the department, Kelly was the Senior Director of Digital Transformation and Hospital Analytics for The Johns Hopkins Health System delivering innovative solutions in the areas of COVID-19 reporting and monitoring, opioid prescribing and clinical decisions support, electronic consenting, barcode blood administration, e-Checkin via MyChart and other operational and IT projects. Prior to this, Kelly held leadership roles in both the Department of Radiation Oncology and Molecular Radiation Sciences and in Ambulatory Services at The Johns Hopkins Hospital. She has a wealth of experience working across the health system in operations management, analytics, financial management, strategic planning, project management and capital equipment.

Kelly has a bachelor's degree in politics and english from New York University and a Masters of Business Administration from the Johns Hopkins Carey School of Business.

Please join us in welcoming Kelly to her new position.



Jonathan Dudley, M.D., is a 2023 winner of the NCI Mentored Clinical Scientist Research Career Development Award (K08) from the NCI/NIH. The K08 Award provides support to clinical scientists for "protected-time" for intensive mentored research and career development activities in basic, translational, and/or patient-oriented cancer-focused research.

Charles Eberhart M.D., Ph.D., is serving as the 2023-2024 President of the American Association of University Pathologists, also known as the Pluto Society, which is an honor society recognizing investigative pathologists.

Carina Friend, a recent graduate of the Specialists in Blood Bank Technology/Transfusion Medicine Program in The Johns Hopkins Hospital, has been awarded the 2023 Future Leader Specialist in Blood Bank Scholarship award by the Association for the Advancement of Blood & Biotherapies (AABB). AABB is the leading clinical society for transfusion medicine and cellular therapies with >6,000 individual members and >1,000 institutional members from 80 countries.

Christopher Gocke, M.D. and **Kevan Salimian, M.D., Ph.D.**, received the Clinical Collaboration and Teamwork Award from the Johns Hopkins Medicine, which is presented to the physician and/or team that engages colleagues in shared decision-making, fostering cooperation and open communication. **Swetha Paluru, M.B.B.S.** received the Armstrong Award for Excellence, Quality and Safety at the same ceremony.

Ashleigh Graham, M.D., M.S., was recognized for her commitment to excellence in Cancer Health Disparity Research with a travel award from the Geographic Management of Cancer Health Disparities Program (GMaP), an NCI initiative. This award is a nationwide initiative, and Ashleigh has been awarded the grant for the entire Region 1 North (R1N), encompassing the states of Kentucky, West Virginia, Maryland, Delaware, New Hampshire, and Maine. She presented her work, "Rates of Atypia in Gender Affirming Mastectomies in Black Transgender Non-Binary Individuals" (co-authors M. White, K. David, Q. Yu, P. Argani, A. Cimino-Mathews), at the United States and Canadian Academy of Pathology 2023 Annual Meeting (USCAP). In July, Dr. Graham was also selected for Alpha Omega Alpha induction. Only 24 residents/fellows in their last year of training were chosen based on their scholarship, leadership, service, clinical excellence, and professionalism.

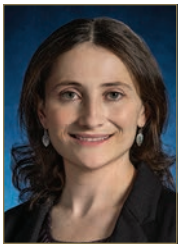
Aaron James, M.D., Ph.D., was inducted into the American Society for Clinical Investigation (ASCI), one of the nation's oldest and most respected medical honor societies. ASCI is comprised of more than 3,000 physician-scientists from all medical specialties who are elected for their outstanding scholarly achievements in biomedical research.

Ashley Kiemen, Ph.D., received the Whiting School of Engineering Award for Excellence in Mentoring and, in May, received the Lustgarten Foundation AACR Career Development Award for Pancreatic Cancer Research in honor of Ruth Bader Ginsburg.

Amanda Loftin, a Ph.D. candidate in our Pathobiology program, was one of the winners of the 2023 Empower Your Pitch! competition organized by the PHutures Office and co-sponsored by the Johns Hopkins Office of Research and Office of Alumni Relations. Amanda received the award for Outstanding Creativity in Research Communication.

Zahra Maleki, M.D., was appointed to the 2023 American Board of Pathology's Test Development and Advisory Committee for Cytopathology. The Committee is responsible for developing and reviewing the American Board of Pathology's certification exam questions used to assess and certify a physician's education, knowledge, experience, and skills in providing high-quality care in the pathology profession.

Mark Marzinke, Ph.D., presented on the pharmacology of long-acting injectable cabotegravir for HIV prevention in women at the 30th Conference on Retroviruses and Opportunistic Infections in Seattle, WA. His work, on behalf of the HIV Prevention Trials Network 084 clinical study, showed that target cabotegravir concentrations were maintained for up to three months following the last drug injection in persons assigned female at birth. This work may have important implications for extended dosing regimens and potential novel formulations.



Meaghan Morris, M.D., Ph.D., along with Hopkins Pathology alumnus Bharat Ramlal, M.D., won PathologyOutlines.com's 2022 Best Author Award for the topic "CNS & pituitary tumors – glioblastoma, IDH wild type."

Jonathan Schneck, M.D., Ph.D., was the recipient of The Sanofi Innovation Awards (iAwards). Sanofi is committed to collaborating with partners to advance cutting-edge discoveries into therapies that improve patient lives. In addition, in August 2023, Dr. Schneck's research team was one of two teams to receive technology development grants from Johns Hopkins through the Louis B. Thalheimer Fund for Translational Research.

Aaron Tobian, M.D., Ph.D., became the President of the Association for the Advancement of Blood and Biotherapies in October.

Christopher VandenBussche, M.D., Ph.D., received the 2023 L.C. Tao Educator of the Year Award from the Papanicolaou Society of Cytopathology. This award is presented to a pathologist in recognition of his/her meritorious service, and contributions to the field of cytopathology education.

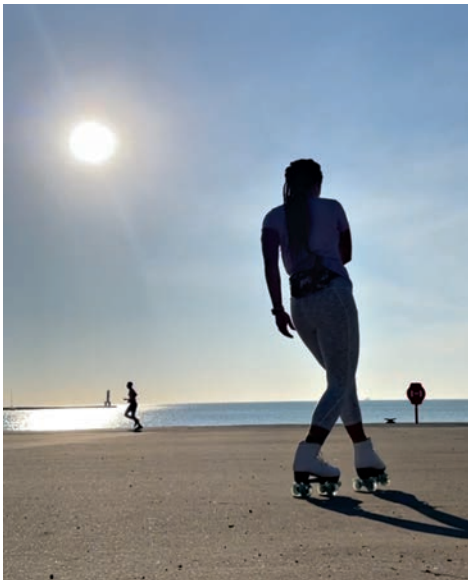
Laura DeLong Wood, M.D., Ph.D., was elected to the American Society for Clinical Investigation (ASCI), one of the nation's oldest and most respected medical honor societies. ASCI is comprised of more than 3,000 physician-scientists from all medical specialties who are elected for their outstanding scholarly achievements in biomedical research.

UNUSUAL OBSESSIONS

Dr. Marissa White

When she isn't signing out surgical pathology cases or spending time with her son, you can find Dr. Marissa White rolling around a hardwood floor in her "old-school" quad roller skates. What started as a pandemic hobby on outdoor tennis courts and trails has become a complete lifestyle change. At least once a week, Dr. White ventures out to a roller skating rink to skate for an evening of exercise, fun, and great music. She is even occasionally joined by her 68-year-old father, who also found skating again during the pandemic after first learning how to skate as a youth in New York.

Roller skating has been recognized and recommended by the American Heart Association as a great form of aerobic exercise. It might sound like a blast from the past, but you might be surprised to learn that the roller skating community is thriving. People of all ages and from all walks of life skate nearly every night of the week at various roller rinks across the Maryland-Washington D.C. area. The rinks play classic soul and rhythm and blues music, while the skaters skate in a high-speed style that is unique to the Mid-Atlantic when compared to skating in other regions. Dr. White is at her happiest, finding peace and relaxation, when she is rolling to good music, and she hopes to continue doing so for as long as possible. ■



Blast From The Past: October 1971

Can you guess who they are?

Answer on page 23

COMING TO BALTIMORE FOR USCAP 2024?

Please plan to join us on Sunday, March 24, 2024, on the Johns Hopkins East Baltimore medical campus for tours of Hopkins Pathology and an alumni dinner. Peter C. Burger, M.D., Professor Emeritus and former Director of the Division of Neuropathology, will be the featured speaker. More information to come.

SAVE THE DATE!

Web News

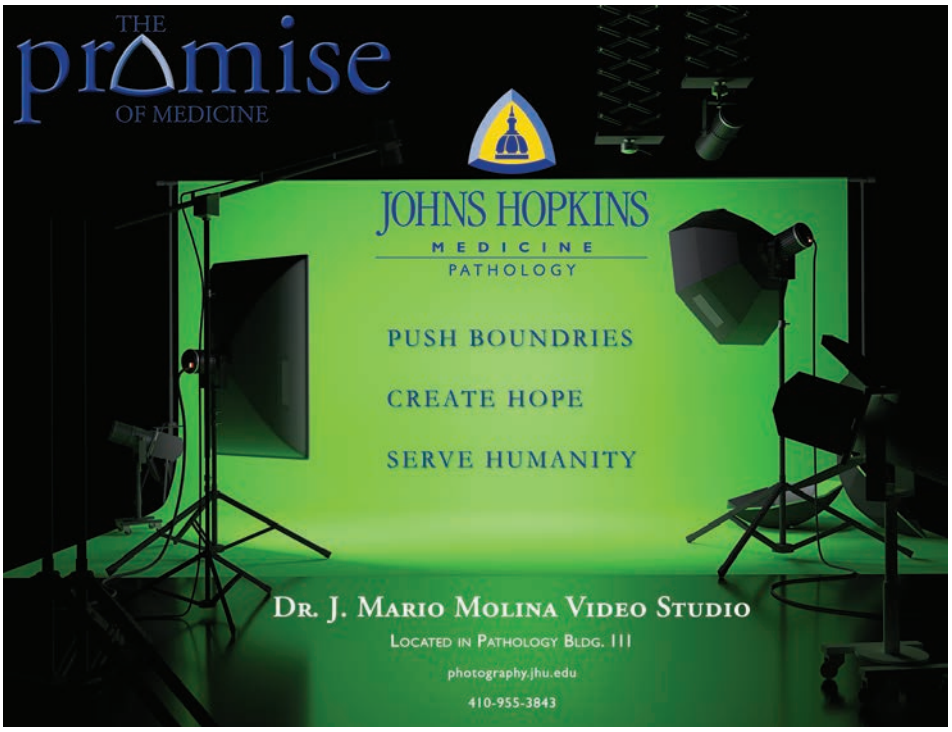
The Pathology web team has been very busy recently, migrating the Pathology Web servers from Pathology's computer in the Meyer basement to a high-security data center in the Johns Hopkins computer facility at the Mt. Washington campus.

Additionally, the web team has been reviewing all of Pathology's websites and software for potential security vulnerabilities and to ensure that all software versions are up to date.

You will note that many of the Additional Links on the Pathology Internal Users page now take you to Microsoft's SharePoint, which is a secure internal web environment that has recently been made available at Mt. Washington.

Please email the web team at *pathwebteam@jhmi.edu* if you have any difficulties with any of the SharePoint sites as the SharePoint migration is an ongoing activity.

Although web cybersecurity concerns have recently occupied virtually all of the web team's time and efforts, the team hopes to soon get back to developing novel and cutting-edge web content for the Department. Please let the web team know about any new ideas you may have, as well as any requests.



The Dr. J. Mario Molina Video Studio In Pathology Photography

Dr. J. Mario Molina, a healthcare entrepreneur, physician and philanthropist, provided a grant to Pathology to establish a video studio for educational videos, resident teaching, and interviews on the history of Johns Hopkins. Led by Norman Barker, the team has made several dissection videos for resident education in Surgical Pathology as well as filmed complete male and female autopsies with narration. An ongoing history project has been recording some of the leaders of Johns Hopkins, who guided not only patients but also employees through the early days of COVID-19 pandemic. We are trying to record as many personal interviews as possible before memories start to fade. Please check out the links below.

History of Hopkins:
How a Biocontainment Unit Helped Lead the Response to the COVID-19 Pandemic

https://www.youtube.com/watch?v=spwl7rgvieg

Brian T. Garibaldi, M.D.
Director of Johns Hopkins Biocontainment Unit, Associate Professor, Johns Hopkins School of Medicine

History of Hopkins:
How the Laboratories Responded to the COVID-19 Pandemic

https://www.youtube.com/watch?v=wBU1XX4EEok

Karen C. Carroll, M.D.
Director, Division Medical Microbiology
Professor of Pathology, Johns Hopkins School of Medicine

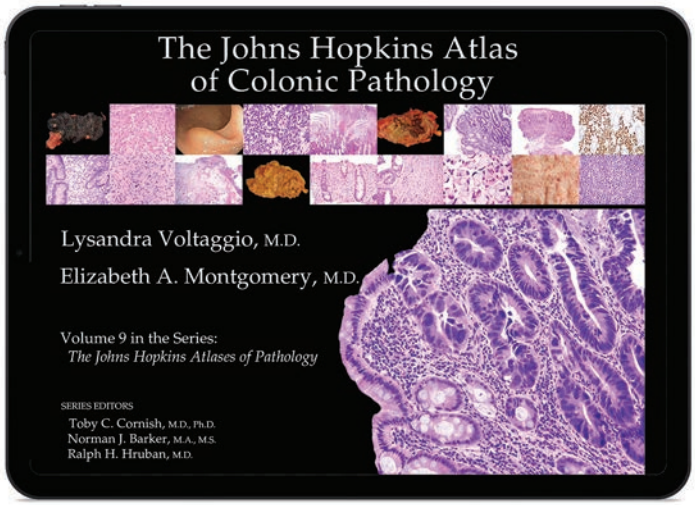
Heba Mostafa, M.B.B. Ch., Ph.D
Director, Molecular Virology Laboratory
Associate Professor, Johns Hopkins School of Medicine

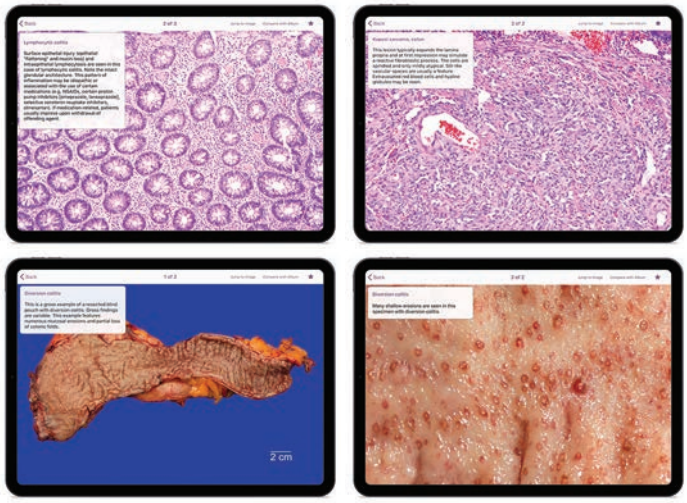
History of Hopkins:
Infection Prevention and Preparedness

https://www.youtube.com/watch?v=4HZ59wc3m-Y

Lisa Maragakis, M.D.
Senior Director of Infection Prevention
Professor of Medicine, Johns Hopkins School of Medicine

NEW JOHNS HOPKINS PATHOLOGY APPS





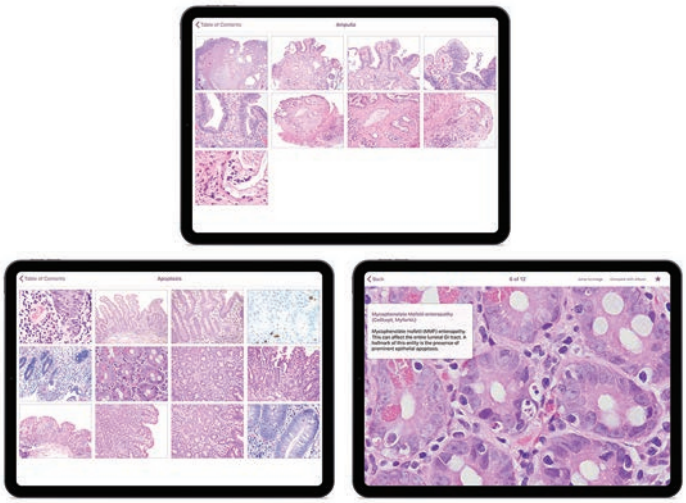
We have created two new educational iPad apps!

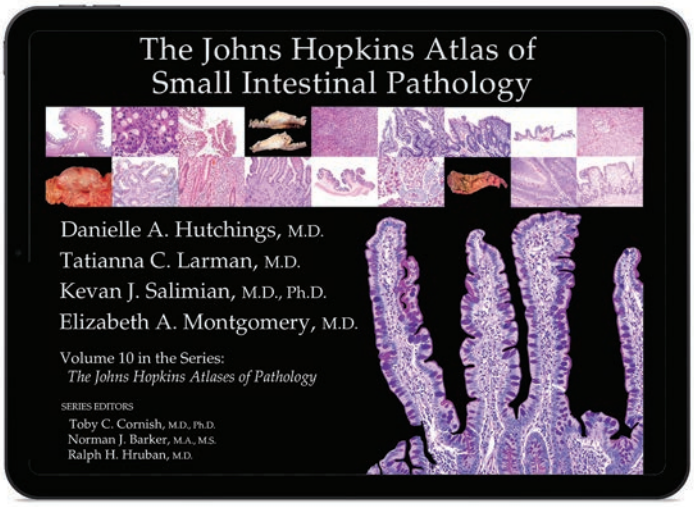
Available on the App Store

These include a new atlas of colonic pathology and a new atlas of small intestinal pathology. These apps, as well as our other iPad apps, are available through the Apple App (iTunes) Store.

Additional Johns Hopkins Pathology Atlases currently available in the Apple App Store include:

- **The Johns Hopkins Atlas of Appendiceal Pathology**
- **The Johns Hopkins Atlas of Kidney Transplant Pathology**
- **The Johns Hopkins Atlas of Neuropathology**
- **The Johns Hopkins Atlas of Ovarian Pathology**
- **The Johns Hopkins Atlas of Pancreatic Pathology**
- **The Johns Hopkins Atlas of Pancreatic Cytopathology**
- **The Johns Hopkins Atlas of Prostate Pathology**
- **The Johns Hopkins Atlas of Thyroid Pathology**





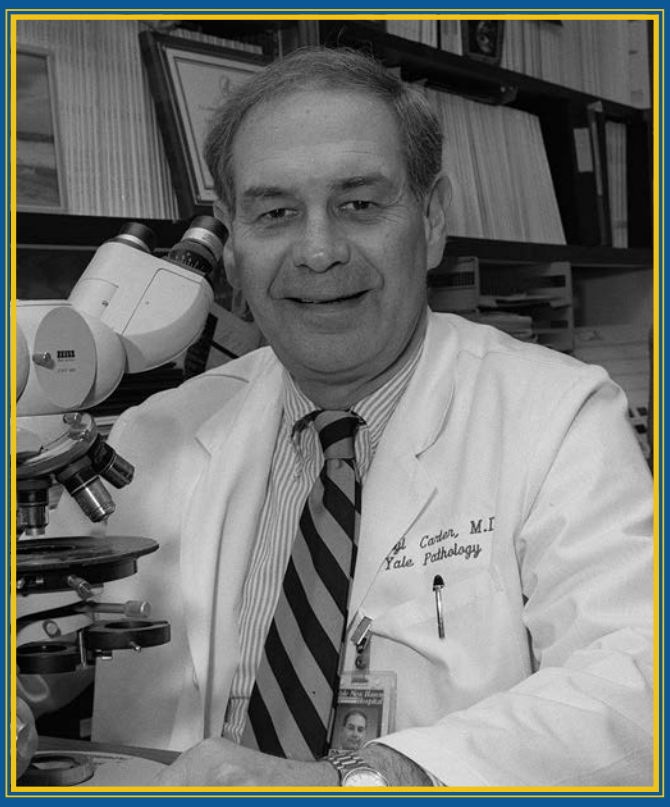
Have you moved or are in the process of moving? Have you changed your email address?

If so, please email **HopkinsPathology@jhmi.edu** to provide your new mailing and email addresses. We don't want you to miss an issue of *PathWays* or communication from the Department of Pathology.

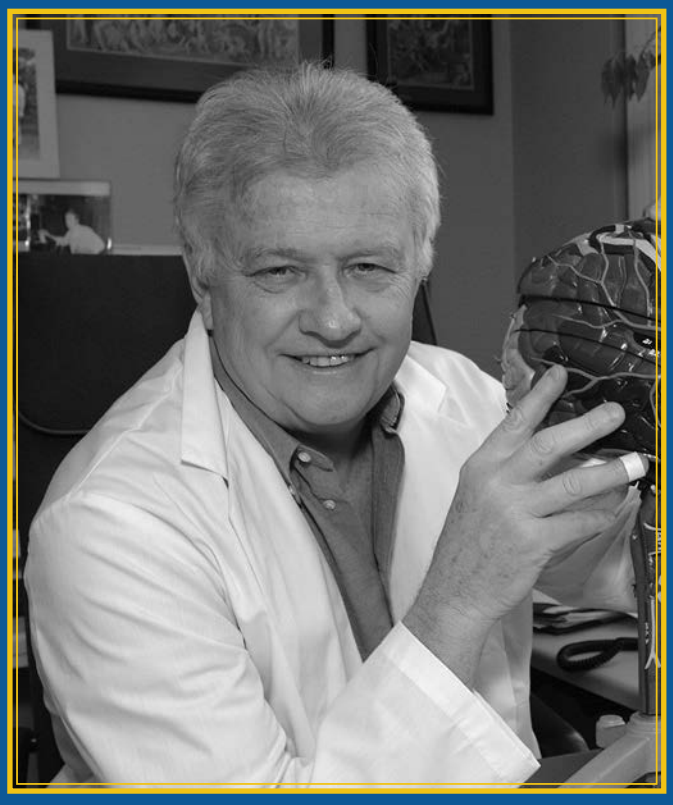
We respect your privacy and will never share your name with other organizations.

In Memoriam

Yener Erozan
1930-2023



Daryl Carter
1935-2023



Donald Price
1935-2023

JOSEPH C. EGGLESTON, M.D. VISITING PROFESSOR LECTURE

Elizabeth A. Montgomery, M.D., former Hopkins Pathology faculty member and current Professor and Vice Chair of Faculty Development and Mentoring, Director of the Surgical Pathology Fellowship Training Program, and Co-Director of the Pathology Reference Services at the University of Miami Miller School of Medicine presented the 10th Annual Joseph C. Eggleston, M.D. Visiting Professor Lecture in Surgical Pathology on October 30, 2023. In her engaging presentation titled, "Yes, the Biopsy Needle was in the Lesion and Other Mishaps Over the Years," Dr. Montgomery shared cautionary tales about the mishaps and missed diagnoses that even the most veteran pathologists need to guard against. The annual Eggleston Lecture, which honors the legacy of the late director of surgical pathology, was bittersweet this year as we held a moment of silence to remember and honor the memory of Joe's widow and long-time supporter of the Department, Sylvia Eggleston Wehr, who passed away on October 29th. It is through the generosity of Sylvia and her family that the annual Eggleston Lecture is possible.

Elizabeth A. Montgomery, M.D. and Lisa M. Rooper, M.D., Associate Professor of Pathology and Interim Director of Surgical Pathology

The Allen Valentine Pathology Educational Symposium

The 2023 Allen Valentine Pathology Educational Symposium was held September 12-14, 2023, for its second year named after our prior pathology administrator and the eleventh year overall. Approximately 650 individuals attended this year, and we were able to return to the Turner Auditorium on September 13 for in-person education and networking while still live-webcasting many sessions via Zoom. The topics ranged from wellness and a visual tour of the Billings dome, to technical clinical and anatomic pathology, to healthcare disparities, and even included veterinary pathology. The symposium provides an excellent enrichment opportunity for our pathology faculty, fellows, residents, and staff through the efforts of the Pathology Symposium Committee.

Blast From The Past: October 1971

Answer

Left to right:
Jean (Dr. Strandberg's sister), Dr. John Strandberg, and Dr. Robert Squire

Department of Pathology
The Johns Hopkins University
School of Medicine
600 North Wolfe Street, Carnegie 417
Baltimore, MD 21287-6417
410-955-9790

Director:
Ralph H. Hruban, M.D.

Editors:
Cordelia Lee
Michaela McAuliffe

Designer:
Karen Klinedinst
Art as Applied to Medicine, Graphic Arts Division

Photography:
Norman J. Barker, M.S., M.A.
Jon R. Christofersen, M.A.

Department of Pathology website:
http://pathology.jhu.edu

CALENDAR OF EVENTS

March 12, 2024
Pathology Young Investigators' Day
Turner Auditorium
Johns Hopkins University School of Medicine
Baltimore, Maryland
10 am – 3 pm

March 23-28, 2024
Bringing Education to Life
United States and Canadian Academy of Pathology
113th Annual Meeting
Baltimore Convention Center
Baltimore, MD

March 24, 2024
Pathology Alumni Reception
Special tours, reception and dinner for alumni attending the USCAP meeting.
The Armstrong Medical Education Building
Johns Hopkins Medical Campus
Tours start at 4 pm. Reception and dinner start at 6 pm.

2023 Pathology Young Investigators' Day Awardees

CONGRATULATIONS TO THE TOP AWARD RECIPIENTS

Nianbin (Nelson) Song, Ph.D.
Taejoon Won, Ph.D.
Thomas D. Zaikos, M.D., Ph.D.
Katie Irwin, B.S

FOR EXCELLENCE IN BASIC RESEARCH

Nianbin (Nelson) Song, Ph.D.
Jesus Contreras Rodriguez, B.Sc.
David M. Hughes, B.S.
Hannah M. Kalinoski, B.S., B.A
Adrian Martin-Esteban, Ph.D.
Dongseok Park, Ph.D.

EXCELLENCE IN CLINICAL RESEARCH (*2 TOP AWARDS)

Taejoon Won, Ph.D. *
Thomas D. Zaikos, M.D., Ph.D. *
Annie Wu, M.D., Ph.D.

FOR EXCELLENCE IN TRANSLATIONAL RESEARCH

Katie Irwin, B.S
Rafid Al-Hallaf, Ph.D.
Niklas Bachmann, B.Sc.
Stephen Brown, B.S.
Jiayu Chen, Ph.D.
Masnsen Cherief, Ph.D.
Jun (Tony) Choe, B.S.
Logan George, B.S.