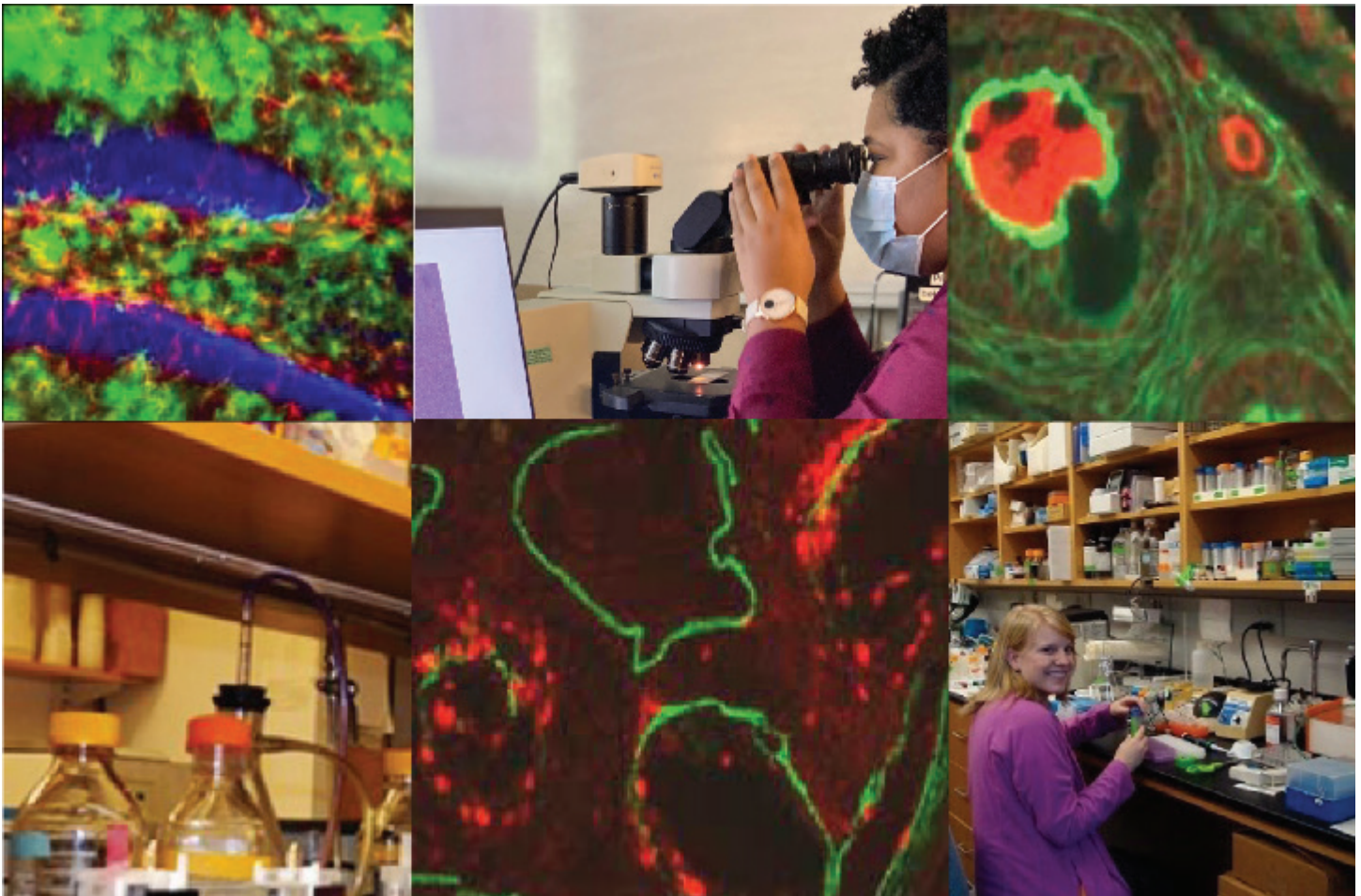


UVA PATH REPORT

News from the UVA Department of Pathology



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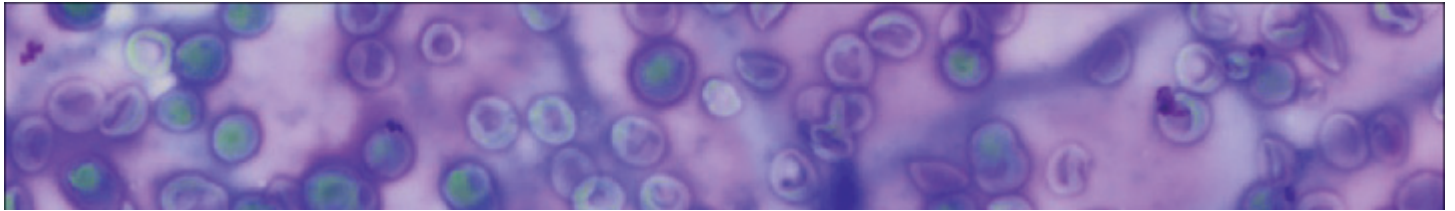
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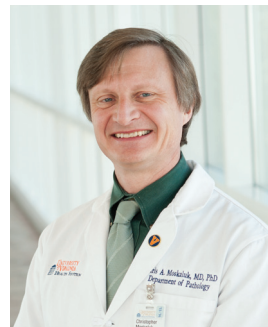
A Message from the Chairman



During my lifetime, I have observed science and technology deliver advances that would have seemed like miracles through most of the human experience. Our current state of microbiology, immunology, and biotechnology delivered rapid diagnostic tests within the first month of the pandemic and effective vaccines within the first year of a pandemic from a previously unknown virus. Truly remarkable and uplifting. When I began my scientific training in the 1980s, molecular biology techniques required weeks to create recombinant DNA constructs and almost a week to sequence 200 basepairs of DNA. Viral diagnostics were predominantly relegated to cell culture, electron microscopy or serology, with turn-around time measured in days to weeks. I was on hand to witness the advent of synthetic DNA, polymerase chain reaction and next generation sequencing technology, all of which were brought to bear in the incredible scientific response to the COVID-19 pandemic. Had the SARS-Cov-2 virus emerged in the 1980s, it would have taken perhaps a year just to identify the virus, we would never have had the rapid, sensitive and specific PCR tests to identify and quarantine new infectious cases, and it would have taken years to develop a vaccine. I shudder to think how many more millions of people worldwide would be dead or disabled at this point in the pandemic without the advances in biology and technology that we now enjoy. I must acknowledge that technology has also made possible the easier spread of disinformation that vies with proven public health measures and scientific fact, that prevents disease-suppressing levels of

vaccination and thus competes with microbial virulence as major reasons for the continued spread of virus in our country. While it may be easy to give up to despair at how easy disinformation competes with verifiable fact these days, what I want to focus on instead, and truly celebrate, are the men and women in our department that are engaged in ongoing research efforts, that span the spectrum of basic science, translational science, and clinical science that are adding

to the continued progress of human knowledge and medical practice. Our newsletter this year is filled with vignettes from the research efforts of the faculty of the UVA Pathology Department, who have dedicated their lives to the search for new knowledge and the advance of medical practice. I hope the description of their efforts will give you the same inspiration and hope for the future as it gives to me.



Christopher A. Moskaluk

Christopher A. Moskaluk, M.D., Ph.D.
Walter Reed Professor and Chair
UVA Department of Pathology

In Focus: Experimental Pathology

Adam Goldfarb, M.D.



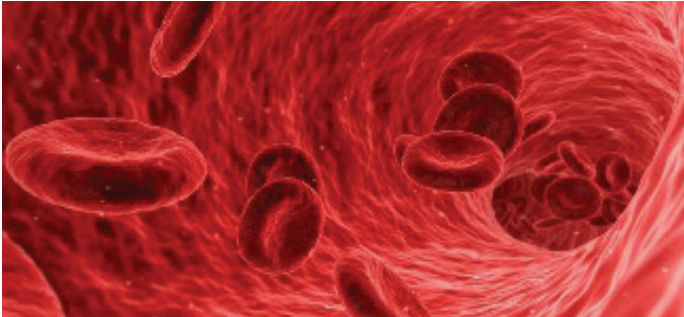
Adam Goldfarb, M.D.

Anemia of chronic disease and inflammation (ACDI) is associated with several diseases and afflicts millions of patients in the United States. The anemia itself contributes to significant morbidity and mortality, independently of the underlying disease condition. The most common group comprises individuals with chronic renal failure, in whom billions of dollars are spent annually on anemia management, specifically

on recombinant human erythropoietin and intravenous iron. These treatments, in addition to their substantial cost, have several drawbacks including dangerous side effects and suboptimal efficacy.

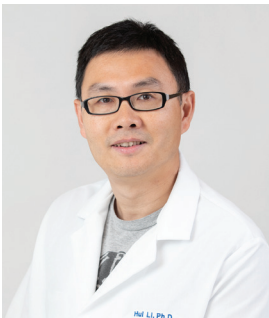
A central feature of ACDI pathogenesis consists of aberrant iron metabolism due to inappropriate expression of hepcidin, driven by inflammatory cytokines. Thus, the iron flux normally directed toward erythroid progenitors in the marrow undergoes blockade, with retention in splenic macrophages. For several years, our lab has studied how erythroid progenitors in the marrow respond to changes in iron flux, trying to determine the molecular basis for their unique sensitivity to iron deprivation. Specifically, low iron levels cause the erythroid progenitors to become resistant to erythropoietin. If one could break this resistance, erythropoietin-stimulated erythroid progenitors would secrete a cytokine, ERFE, that suppresses hepcidin and induces release of iron from the splenic macrophages. Thus, the erythropoietin resistance caused by low iron represents an ideal target for a safe and effective therapy for ACDI. Work from our lab has defined a pathway in which erythroid

In Focus: Experimental Pathology *cont.*



iron deprivation triggers a response, unique to this lineage, in which the microtubule cytoskeleton undergoes collapse and the transport of the erythropoietin receptor to the cell surface, in conjunction with the chaperone proteins Scribble and Tfr2, ceases. The basis for the microtubule collapse was found to be the repression of ferritin proteins by the iron-responsive protein Irfp1, aka cytosolic aconitase. We have shown that the microtubule collapse can be blocked by using metabolites, isocitrate and fumarate, that prevent ferritin repression by Irfp1. When tested in a mouse model of ACDI, oral therapy with isocitrate + fumarate provided sustained correction of the anemia. Based on these findings, we have begun to plan a clinical trial in dialysis patients using oral treatment with related metabolites already known to be safe in humans. We will determine whether the metabolite therapy leads to diminished need for treatment with recombinant erythropoietin and IV iron.

Hui Li, Ph.D.



Hui Li, Ph.D.

Glioblastoma multiforme (GBM), is the most common and most aggressive malignant primary brain tumor in humans. Despite multimodal aggressive therapy, GBM is fatal— About 50% of patients diagnosed with GBM die within one year, and 90% die within three years. Better understanding, and more therapeutic targets and treatment options are clearly needed. Last year, we published our work on a novel oncogene, AVIL in GBMs. AVIL

gene is overexpressed in detectable in non-cancer astrocytes, and brain tissues. Silencing AVIL resulted in complete eradication in GBM cell cultures, but had little effect on the astrocyte controls. In animal models, silencing AVIL dramatically inhibited in vivo xenografts in mice. Conversely, overexpressing AVIL in cell culture systems promoted tumorigenesis, enabled fibroblasts to escape contact inhibition, and transformed immortalized astrocytes. In patient cohorts, higher expression levels of AVIL in cases of GBM and other gliomas correlated with worse prognosis. These evidences support the premise that AVIL is an Achilles heel of GBMs, targeting which may be an effective approach for GBMs. However, key aspects about AVIL are unanswered. We are conducting systematic study on the mechanism of tumorigenic activity of AVIL, identifying its upstream

regulators and downstream signaling pathways. At the same time, we are developing small molecule inhibitors targeting this novel oncogene.

Robin Felder, Ph.D.



Robin Felder, Ph.D.

My laboratory continues its work on salt sensitivity of blood pressure which causes increased morbidity and mortality in over 30% of the adult population in the USA. We have focused out latest studies on a little known syndrome called inverse salt sensitivity of blood pressure (ISS) that affects 15% of Americans. The blood pressure of ISS individuals increases when they eat a low salt diet, often to levels that a doctor would diagnose as hypertensive.

In order to reduce their high salt diet. My laboratory is reporting on this syndrome at the American Heart Association meeting in early October. I have submitted a large grant proposal to the National Heart Lung and Blood Institute involving collaborations with UVA, the University of Maryland, and Harvard.

Thomas Braciale, M.D., Ph.D.



Thomas Braciale, M.D., Ph.D.

My laboratory has had a long-standing interest in understanding the host immune response to influenza virus infection and the factors (both virus derived and host derived) that regulate susceptibility to infection, the severity of influenza infection, and the process of recovery and restoration of normal lung function. Although influenza infection frequently results minimal disease if influenza infection reaches the terminal airways where oxygen exchange occurs,

this type of infection frequently results in severe and sometimes fatal influenza pneumonia. For the last several years we have focused our efforts on understanding the role of alveolar macrophages in regulating the susceptibility of lung terminal airway epithelial cells to infection. We have obtained evidence both in experimental models of influenza infection and in studies “in vitro” with human tissue that alveolar macrophages play a critical role in controlling the susceptibility of terminal airway alveolar epithelial cells to influenza infection. We have found that prior to exposure to influenza virus, alveolar macrophages release a soluble activity/activities which render alveolar epithelial cells resistant to influenza infection. We are currently in the process of defining the nature of this factor or factors released by alveolar macrophages which exhibit this potent antiviral activity. We anticipate that this line of investigation will be to the development of new antiviral agents to prevent the development of severe lower respiratory tract influenza infections.

In Focus: Experimental Pathology cont.

Eli Williams, Ph.D.



Eli Williams, Ph.D.

Type 1 diabetes (T1D) is a complex autoimmune disorder that affects up to 1 in 300 individuals. In many of these cases, diagnosis is made only after the onset of severe symptoms. The UVA Clinical Genomics Laboratory has partnered with researchers from the Center for Public Health Genomics to try to eliminate these unexpected T1D-related emergencies. T1D results from the action of multiple genetic and environmental factors, with the genetic risk comprising approximately half of the total risk for the disease. However, there is no single gene responsible for T1D diabetes, rather there are dozens of gene variants that contribute small amounts to the overall risk. By screening children for these genetic variants, UVA hopes to identify affected children before the onset of symptoms. To accomplish this, I helped to develop high-throughput screening for 89 genetic variants that increase the risk for T1D. This genetic screening, costing only \$7 per sample, identifies children with a high genetic risk for development of T1D versus those with standard risk. Individuals identified as high risk by the genetic screen have a 10X increased risk for T1D and are monitored more closely for the onset of symptoms, including the development of autoantibodies, an early sign of T1D. Nearly 4,000 children have been screened to date, despite a slowing of recruitment due to COVID. While this screening approach does not identify all children at high genetic risk for T1D, this information can help families be prepared for the possibility of T1D in their child. Moreover, the data gained through the screening of pediatric populations in Virginia provides valuable information on the genetics of T1D and improves the utility of future iterations of this unique genetic screening program.

Alejandro Gru, M.D.



Alejandro Gru, M.D.

I am a tenured Associate Professor of Pathology & Dermatology at University of Virginia. I am the director of the fellowship program and section of dermatopathology. I am the codirector of the cutaneous lymphoma program. My genomic studies in HTLV-1 associated adult T-cell leukemia, in collaboration with Dr. Juan Carlos Ramos from University of Miami, involve the first large, broad, comprehensive genomic analysis of the disease in the Western world. They have identified novel gene mutations that appear to be exclusive to this population, and are different from the Japanese cohort. Their work is currently being presented as an oral abstract

at the most prestigious conference American Society of Hematology. Adult T-cell leukemia is the most lethal form of T-cell lymphoma worldwide. I have also worked in collaboration with Dr. Eli Williams (Director of Genomics) in studying an uncommon condition, blastic plasmacytoid dendritic cell neoplasm (BPDCN): they are now reporting a comprehensive genomic study on the disease, that includes the largest cohort of cases in the world. I have the largest consultation referral practice of skin lymphoma in the US. I lead the pathology aspects (central review) of the advanced stage PROCLIP study in mycosis fungoides (the most notable CTCL registry in the era). I am now also leading the pathologic aspects of the T-cell Project (TCP), under Prof Massimo Federico in Italy, the largest registry in systemic T-cell lymphomas. I am part of the board of directors of the United States Cutaneous Lymphoma Consortium and research advisory council of the Cutaneous Lymphoma Foundation. My leading role in the CTCL arena can be also supported as being a coauthor of the international guidelines for clinical trial design and staging updates in cutaneous lymphoma. This work has just been published in "Blood." Other genomic studies, where UVA has been instrumental, include the recent discovery of JAK translocations in aggressive epidermotropic cytotoxic T-cell lymphoma, and the discovery of different subtypes in cutaneous gamma-delta T-cell lymphoma.

Timothy Bullock, Ph.D.



Timothy Bullock, Ph.D.

I joined UVA 20 years ago and am currently a tenured Associate Professor of Pathology. During my time at UVA, my lab has primarily focused on unravelling fundamental aspects of T cell stimulation with the ultimate intent of promoting novel approaches to enhance the effectiveness of cancer vaccines. Two clinical trials are currently ongoing at UVA as a function of some of my lab's discoveries. As junior faculty, I was awarded Young Investigator Awards from the Cancer Research Institute, the Dana Foundation, the Sidney Kimmel Foundation and the Melanoma Research Alliance. More recently, my lab has collaborated with faculty at UVA to promote the development of Focused Ultrasound as a novel intervention designed to augment anti-tumor immunity. I have authored over 60 manuscripts and is a Section Editor of the "Journal of Immunology" and the "Journal of Immunotherapy of Cancer," and Associate Editor for the "Journal of Lymphocyte Biology" and the "Journal of Cellular Immunology." I regularly serves on cancer immunology study sections for the NCI. I serve as a co-Director of the Pathology Department Molecular and Cellular Basis of Disease graduate program, and have mentored 10 graduate students and post-doctoral fellows. In addition, I have provided research opportunities to over 30 UVA undergraduate students. I spend most of my free time chaperoning my kids on activities and sports, though I hope to one day dust-off his golf clubs!

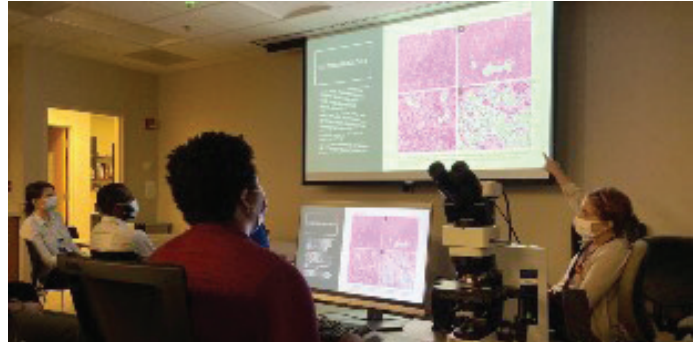
National Presentations

Although many major meetings have been conducted online over the last year, UVA Pathology has continued to have an incredibly strong showing on the national and international stage.

Our Experimental Pathology has shined in a wide range of forums. In one highlight, graduate student Karolina Dziewulska was recognized with the Outstanding Abstract Award at the 2021 meeting of the Association for the Advancement of Blood and Biotherapies for her oral presentation, “Resistance to Drug-Induced Hemolysis and Higher Enzymatic Activity in Young versus Older RBCs in a Novel Humanized Mouse Model of G6PD Deficiency,” a project mentored by Jim Zimring. In another, Zollie White was honored with a Minority Graduate Student Abstract Achievement Award by the American Society of Hematology for his presentation of work with mentor Adam Goldfarb. Ph.D. candidate Ben Morris also presented his work on omics-guided small molecule inhibitor screens at the annual meeting of the American Society for Clinical Oncology, and shared his studies on MYBL2 expression in refractory malignancies at the Cell-NCI Symposium. In one unique example of science on the national stage, Robin Felder delivered the talk, “Medical Robotics as part of a well-rounded STEM education program” to high school superintendents from across the country as part of the School Superintendents Association’s partnership with the STEM organization JASON.

UVA’s Laboratory Medicine Division has also had robust representation in a host of organizations. Laboratory Medicine Division Chief Jim Gorham served as the National Blood Foundation Grants Review Committee Chair and moderated their annual research symposium, while Jim Harrison spoke to the College of American Pathologists on machine learning and artificial intelligence. At the American Association for Clinical Chemistry’s annual meeting, recent hire Nick Larkey presented his original research covering a wide array of topics including macrovancomycin complexes, SARS-CoV-2 serologic assays, and lipoprotein subfractions. Bridging lab medicine, anatomic pathology, and education, Associate Professor Elizabeth Courville delivered the workshop “Teaching Flow Cytometry to New Trainees” at the International Clinical Cytometry Society’s annual meeting. Dr. Courville also served as mentor to fourth-year resident Srishti Gupta who presented a fascinating case at the meeting.

On the AP front, Division Chief Kristen Atkins remained active in the American Society for Cytopathology, serving on the Executive Board and moderating the Diagnostic Cytology Scientific session at this year’s annual meeting. Dermatopathology director Alejandro Gru delivered over 25 talks around the world, discussing cutaneous lymphoproliferative disorders in Argentina, HTLV-1 associated leukemia/lymphoma in Peru, and a host of topics in CME lectures from sunny Hawaii to snowy



Colorado. Neuropathology director Bea Lopes continued to be a leading figure in pituitary pathology, presenting WHO classification updates for the Pituitary Society Workshop, the Keck School of Medicine, the Chilean Society of Endocrinology and Diabetes, and the Society of Neurosurgery. Anne Mills also provided WHO updates on cervical precancerous lesions at the annual meetings of both the European Pathology Congress and at the College of American Pathologists. Our newest AP faculty hires have also been hard at work: Taylor Jenkins co-presented a half-day course on gynecologic malignancies for the Oregon Society for Pathology with Anne Mills, while Shyam Raghavan and Sara Zadeh joined Ed Stelow in speaking to peers from across the Commonwealth about GI and ENT malignancies at the Annual Meeting of the Virginia Society for Pathology. Resident presenters Megan Dibbern and Srishti Gupta also delivered superb case presentations at the state society meeting.

UVA Path’s trainee presence was also notable at the 2021 Annual Meeting of the United States and Canadian Academy of Pathology, where residents and fellows Ashley Craddock, Anna Dusenbery, Sarah Gradecki, Akriti Gupta, Taylor Jenkins, and Marge Moore presented seven abstracts under the mentorship of Helen Cathro, Alejandro Gru, Anne Mills, Shyam Raghavan, and Ed Stelow. Their original research focused on therapeutic biomarkers in breast, head and neck, lung, uterine, and urothelial carcinomas; cytology screening for precancerous anal squamous lesions; and RNA “in situ” hybridization for cutaneous lymphoproliferative disorders. In one meeting highlight, senior resident Sarah Gradecki was also awarded first place poster from the North American Head & Neck Society for her abstract titled, “PRAME Expression in High-Risk HPV-Positive and Negative Squamous Cell Carcinoma of the Head and Neck and Regional Lymph Node Metastases.” Faculty also shined as educators at this meeting: Dr. Bea Lopes chaired the Neuropathology and Ophthalmic Specialty Conference, and Anne Mills presented a short course entitled, “Tests, Targets, and Treatments: Emerging Biomarkers in Gynecologic Carcinomas.”

UVA Path’s presence wasn’t limited to conventional venues: our faculty and trainees were also visible on widely streamed digital forums. For instance, Robin LeGallo gave a talk on transgender pathology on the American Society for Clinical Pathology’s Inside the Lab Podcast, while first-year residents Bettie Yeboah and Ansley Scott each gave inspiring interviews about their journey into pathology for the Diversify in Pathology Podcast.

These are only some examples of the high profile presence and wide-ranging productivity of UVA’s faculty and trainees. Sharing our work with the broader pathology and science communities has been a great way to reignite our collective sparks during this challenging time. We hope to see some of our alumni and friends either virtually or in person at meetings and events in the coming year!



Faculty: Moving In



Taylor Jenkins, M.D. received her B.S. in Molecular Biology from the College of Charleston and her M.D. from the Medical University of South Carolina in Charleston, SC. She completed her Anatomic and Clinical Pathology residency training at the Hospital of the University of Pennsylvania in Philadelphia, PA and then transitioned into her pathology fellowships in Gynecologic and Breast Pathology and Cytopathology at the University of Virginia. Her research interests include immunohistochemical and molecular analysis of gynecologic and breast malignancies with a focus on targeted therapeutic options. Outside of work she enjoys cooking and creating vegan recipes, running, cycling, yoga, reading fiction, and spending time with her husband, Tom, a vitreoretinal surgeon in Richmond, and her cat, Jack.



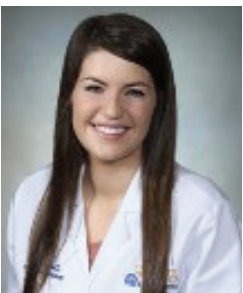
Nicholas Larkey, Ph.D. a native of the Pacific Northwest, received his B.S. in Chemistry and Biology at Pacific Lutheran University and his Ph.D. in Analytical Chemistry at Oregon State University. After completing his Ph.D., Nick took the Oregon Trail in reverse to start a Postdoctoral Fellowship at the University of Kansas Cancer Center. At KU (Rock Chalk), Nick spent time evaluating microfluidic devices for enriching circulating leukemia cells in the peripheral blood of B-ALL patients. After spending enough time in Kansas City to become a Chiefs fan and form strong opinions about BBQ, Nick moved up to Rochester, MN to complete a Clinical Chemistry Fellowship at Mayo Clinic. Nick enjoys cooking, watching cooking shows, and arguing about chemistry with his fiancé Lindsey, who is currently a Chemistry instructor at JMU.



Ifeyinwa E. Obiorah, M.D., Ph.D. received her medical degree from Nnamdi Azikiwe University, college of health sciences, Nigeria and her Ph.D. degree in Tumor Biology from Georgetown University. After the completion of her Ph.D. degree, she did a year of postdoctoral fellowship at the Food and Drug Administration in Silver spring, MD where she worked on the use of cell culture models for HCV infection to study HCV neutralizing antibody function, associated mutations and hepatocellular carcinoma. She returned to Georgetown University in 2015 as a pathology resident in the anatomic/clinical pathology residency program. After her residency, she completed a two-year Hematopathology fellowship at the National Institute of Health, Bethesda. Her research interests include molecular characterization of T cell lymphoma with a special interest in cutaneous lymphomas. Outside of the hospital, she loves spending time with her family and she enjoys music, movies and weird art.

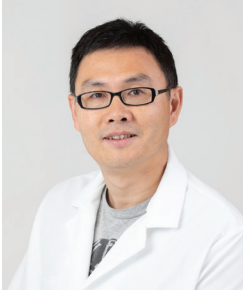


Emily Snavelly, Ph.D., D (ABMM) received her B.A. from Dartmouth College in Biology before attending graduate school in the department of Molecular Genetics and Microbiology at Duke University. Following the completion of her Ph.D. in 2017, she accepted an APHL-CDC Antimicrobial Resistance Fellowship at the New York State Department of Health - Wadsworth Center. During this fellowship Emily was instrumental in implementing whole-genome sequencing (WGS) to support epidemiologic investigations of antimicrobial resistant organisms in the Northeastern United States. Her interest in WGS applications in clinical and public health microbiology led her to pursue a medical microbiology fellowship at the University of Utah / ARUP Laboratories in 2019. Emily was board certified by the American Board of Medical Microbiology in 2021 and is excited to explore the intersection between new sequencing technologies and infectious disease diagnostics at UVA. When not in the laboratory, Emily can be found hiking, climbing, traveling, and exploring the Blue Ridge Mountains with her family and friends.



Sara Zadeh, M.D. received her B.A. in Biology and Biotechnology from the University of Georgia and her M.D. from the Medical College of Georgia. After medical school, she completed pathology residency at The University of Virginia and fellowships in cytopathology and general surgical pathology at Stanford University. Her research interests include head and neck tumors and global health. Outside of the hospital, she has many interests including travelling around the world, trying new foods, spending quality time with friends, learning about interior design, listening to self-improvement podcasts/audiobooks, making cocktails, and taking care of her cats, Desmond and Charlene.

Faculty: Moving Up



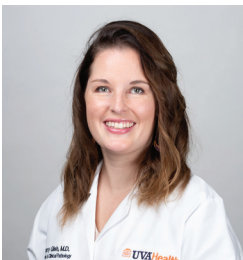
Hui Li, Ph.D. was promoted to tenured Professor of Pathology. He has been on the UVA faculty since 2009. He is a co-leader of Molecular Genetics and Epigenetics Program of the Cancer Center, and a co-director of Molecular and Cellular Basis of Disease Graduate Program. He has authored more than 50 papers, editorials, abstracts, and patents in the past 5 years. Published journals include “Science,” “Cancer Discovery,” “Trends in Cancer,” “PNAS,” “Nature Communications,” “Nucleic Acids Research,” etc. He has mentored over 60 graduate students, postdocs, visiting scholars, and undergraduate students. He serves as lead editor, guest editor, review board and ad hoc reviewer of more than 30 journals, including “PNAS,” “Nature Communications,” “Cancer Research,” “Genome Medicine,” “Cancer Letters,” etc. He is on the peer review committee of American Cancer Society and NIH study section. He has 17 grants and contracts in total, 8 active grants. Sources include “NIGMS,” “NCI,” “NIDDK,” “NHLBI,” “NHLBI,” “Ivy Foundation,” “American Cancer Society.” Beyond research, he enjoys outdoor activities with family and raising animals.

First Year Trainees

First Year Residents



Emily Gardner, M.D. grew up in Chicago and attended Loyola University Chicago for undergraduate studies. She received a master's degree in Pathology and worked as a Pathologists' Assistant in Baltimore prior to medical school. She attended medical school at Wake Forest in Winston-Salem, North Carolina. Her husband, Nate, is a software engineer. They have two rescue cats named Bruce and Remi. In her free time, she enjoys hiking, listening to podcasts, and drawing.



Tappy Gish, M.D. grew up in Laramie, Wyoming and attended the University of Wyoming, majoring in Physiology with a minor in Chemistry and Anthropology. She was accepted into the TRUST program through the University of Washington's WWAMI program, with a concentration on rural and underserved community medicine, completing clerkships throughout the Northwest states. In her free time she enjoys anything and everything outdoors: hiking, kayaking, rock climbing, snowshoeing, all accompanied by her husband, Aaron, and their Australian shepherd, Ranger. She additionally spends a considerable amount of time tending to the queen of their family, a pot-belly pig named Sophie.



Kyle Hodge, M.D. was born in Belfast, Northern Ireland. He received his undergraduate degree from Binghamton University and attended medical school at Albany Medical College. He enjoys playing instruments like the piano and B-flat clarinet in his spare time.

First Year Trainees cont.

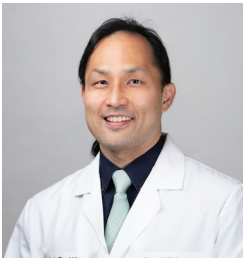


Ansley Scott, M.D. is a Mississippi native and completed her medical education at the University of Arkansas for Medical Sciences. She enjoys spending time with family and friends, reading, and DIY projects.



Bettie Yeboah, M.D. received her M.D. from Drexel University College of Medicine. She loves cats and sci-fi/horror and is currently writing her first novel that combines pathology and magical realism. She is currently interested in hematopathology but has fallen in love with every rotation she has been on.

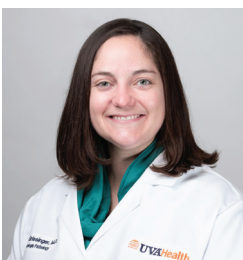
First Year Fellows



Benjamin Cho, M.D. (Neuropathology) is from the suburbs of Detroit, Michigan and attended medical school at Michigan State. After AP/CP residency at UVA (2010-14) and surgical pathology and hematopathology fellowships at Stanford (2014-16), he worked in private practice in Columbus, Ohio for a few years (2016-19) before taking a break from medicine to work for the Elizabeth Warren presidential campaign in Nevada and Colorado. Planning a return to pathology but this time in an academic setting, Ben completed his first year of neuropathology fellowship at Mount Sinai Hospital in New York City and was thrilled that there was an opportunity for him to complete the second year of the fellowship at UVA. Outside of work, Ben enjoys spending time with his family, indulging his sweet tooth, and watching tennis, gymnastics, and figure skating.

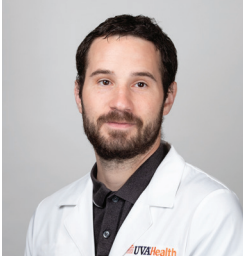


Yasmin Hambaroush, M.D. (Hematopathology) is from Aleppo, Syria. She completed her AP/CP residency training in University of Kentucky. She likes Zumba dancing and horror movies. She is interested in skincare and beauty.



Laurie Griesinger, M.D. (Gynecologic Pathology) grew up in South Bend, Indiana and attended Indiana University for her undergraduate degree. After a two-year stint in ecology field research in Maine, she attended the University of Vermont for medical school, where she completed a post-sophomore fellowship in pathology. She completed her AP/CP residency at the University of Michigan, and is happy to be at UVA for a gynecologic and breast pathology fellowship. Outside of pathology, she is an avid reader, and enjoys hiking with her partner, playing Stardew Valley, and partaking in good food and drink.

First Year Trainees *cont.*



Merrick Kozak, M.D. (Dermatopathology) is from Smithfield, Virginia. He completed his undergraduate studies at the University of Virginia before heading down Interstate 64 to complete medical school at Virginia Commonwealth University. After finishing his intern year in internal medicine, he returned to UVA for dermatology residency. He is a trivia aficionado. In his spare time, he enjoys spending time with his wife and newborn. They enjoy all the trails that Charlottesville and the Piedmont have to offer. However, weekends in the fall are reserved for football.



Justin Halls, M.D., M.P.H. (Blood Bank and Transfusion Medicine) is from the Madison, WI area and attended Notre Dame where he completed his B.A. in a Great Books style Liberal Studies program. He then moved to New Orleans to be a teacher, which, due to Hurricane Katrina, turned into several years of quixotic adventures including working for FEMA, extensive travel involving some mountaineering expeditions, helping with the establishment of Patagonia National Park in Chile, and teaching 9th grade in New Orleans at a school he helped found. Turning to medicine, Justin went on to the University of Virginia to complete a post-bacc premed program and MPH before he attended medical school at Tulane. He completed a CP residency at BIDMC/Harvard and will graduate from a Clinical Informatics fellowship at Mass General Brigham/Harvard at the end of this academic year. Justin and his longtime partner, Jon, have 3 golden retrievers who they love to take on hikes and adventures.



Landon Hobbs, B.S. (Post-Sophomore Fellow) grew up in rural Idaho and Utah and attended Brigham Young University where he completed his B.S. in Neuroscience. He attended medical school at the University of Virginia, and postponed graduation to become a post-sophomore fellow in the Department. His wife, Cassidee, is a full-time mom to their 4-year-old son Charles and is expecting a baby girl in October 2021. All 3.75 of them are excited to stay in Charlottesville for at least this next year! Outside of work, Landon enjoys running, family time, and being outdoors.

First-Year Ph.D. Graduate Students

PHOTO UNAVAILABLE

Lydia Petricca, B.S. was born and raised in Buffalo, NY. She received her B.S. in Biochemistry from the University of Rochester in 2020. Following undergrad, she entered into UVA's BIMS program. She now studies in Dr. Timothy Bullock's lab, and is co-mentored by Dr. Richard Price of the BME Department. Her research interests are aimed at understanding how focused ultrasound mediates an anti-tumor immune response in the context of triple negative breast cancer. In her free time she enjoys watching football (Go Bills!), playing sports and exploring Virginia.



Sarah Lynch, B.S., M.S. is from Fulton, MD and received her B.S. in Biology and Chemistry from Towson University in Baltimore. She later attended University of North Florida in Jacksonville, FL where she received a M.S. in Biology. She came to UVA in July 2020 to join the Biomedical Sciences program and started her doctoral work in Dr. Hui Li's chimeric RNA lab in January 2021. She enjoys cooking and spending time with the Dachshund that she "foster failed" from the Charlottesville-Albemarle SPCA.

Grants and Contracts

New Grants and Contracts

PI: James Gorham, M.D.,

Cerus Corporation

PROTOCOL CLI00125: A Randomized, Double-Blinded, Controlled, Parallel Group, Non-inferiority, Phase III Study to Evaluate the Efficacy and Safety of the INTERCEPT Blood System for Red blood cells in Patients undergoing Complex Cardiac Surgery Procedures (the ReCePI study)
06/08/2020-12/31/2021
Total Budget: Per subject

PI: Maria-Beatriz Lopes, M.D.,

Washington University/NIH

Immune system supports brain function
09/01/2020-05/31/2021
2021 Budget: \$12,264

PI: Shyam Raghavan, M.D.,

University of Washington/Gates Foundation

Minimally invasive tissue sampling in children dying of an acute illness with varying forms of undernutrition; determining causes of death within the Malawian 'CHAIN' cohort. "MITS IN CHAIN"
03/16/2021-09/16/2021
2021 Budget: \$13,915

Other Active Grants and Contracts (Federal Funding)

PI: Thomas Braciale, M.D., Ph.D.,

National Institute of Allergy and Infectious Diseases

Leukotriene modifying agents in the prevention of excess morbidity and mortality from influenza
08/07/2018-07/31/2022
2021 Budget: \$387,286
National Institute of Allergy and Infectious Diseases
Control of Influenza Infection by Lipid Mediators and Macrophages 01/10/2018-12/31/2022
2021 Budget: \$549,761

PI: Timothy Bullock, Ph.D.,

Department of Defense

Enhanced Melanoma Vaccine against Neoantigens and Shared Antigen by CD40 Activation and TLR Agonists
07/15/2019-07/14/2023

National Cancer Institute

Leveraging MR-guided focused ultrasound to potentiate immunotherapy for GBM
09/19/2019-08/31/2022
2021 Budget: \$208,881

PI: Adam Goldfarb, M.D.

National Institute of Diabetes & Digestive & Kidney Diseases

Dissection and Manipulation of the Cellular Response to Iron Restriction
09/09/2019-06/30/2024
2021 Budget: \$477,832

National Heart, Lung and Blood Institute

Targeting Dyrk1a to Promote Donor-independent Platelet Production
02/20/2020-01/31/2024
2021 Budget: \$699,189

PI: Hui Li, Ph.D.

National Cancer Institute

Targeting AVIL in Glioblastoma
03/01/2020-02/28/2025
2021 Budget: \$496,575

National Institute of General Medical Science

Genome-wide Investigation of cis-splicing between Adjacent Genes
09/03/2019-07/31/2023
2021 Budget: \$323,000

National Cancer Institute

Chimeric RNAs and their implication in lymphatic metastasis of bladder cancer
03/01/2020-02/28/2025
2021 Budget: \$205,913

PI: C. John Luckey, M.D., Ph.D.

National Heart, Lung, and Blood Institute

Cytokine Control of Red Blood Cell Alloimmunization
12/15/16-11/30/21 (under NCE) 2021

National Heart, Lung, and Blood Institute

Immunobiology of Transfusion
07/01/2019-06/30/2022
2021 Budget: \$570,111

National Institute of Biomedical Imaging & Bioengineering

Lymph Node System Mode
07/01/2020-06/30/2021
2021 Budget: \$240,822

PI: Mani Mahadevan, M.D.

National Institute of Arthritis & Musculoskeletal & Skin Disease

RNA Toxicity and Muscle Regeneration
02/20/17-12/31/21
2021 Budget: \$385,227

PI: Christopher Moskaluk, M.D., Ph.D.

National Cancer Institute

Biospecimen Procurement & Tissue Microarray Manufacture for the CHTN
04/01/2019-03/31/2024
2021 Budget: \$953,928

PI: James Zimring, M.D., Ph.D.

National Heart, Lung and Blood Institute Immunobiology of Transfusion

09/15/2019-06/30/2022
2021 Budget: \$1,895,512

National Heart, Lung and Blood Institute

Immunobiology of Alloimmunization by Platelet Transfusion
08/15/2019-06/30/2023
2021 Budget: \$550,586

Regents of the University of Colorado (NHLBI-R01)

PIMT1 in Red Blood Cell senescence and aging
08/01/2019-04/30/2024
2021 Budget: \$301,399

The Trustees of Columbia University in the City of New York (NHLBI-R01)

The Impact of Oxidative Stress on Erythrocyte Biology
09/25/2019-08/31/20
2021 Budget: \$469,230

University Of Colorado (NHLBI-R01)

Interactions between the ADORA2b/Sphk1 axis and the AE1-Hb switch in red blood cell aging in vivo and in vitro
03/15/2020-02/29/2024
2021 Budget: \$322,037

University of California at San Francisco (NHLBI-R01)

Mechanisms of antibody-mediated lung Injury after blood transfusion
07/01/2019-12/31/22
2021 Budget: \$164,249

PI: Robin Felder, Ph.D.

National Heart, Lung and Blood Institute

Molecular Mechanisms in Salt Sensitivity of Blood Pressure
06/01/16-05/31/22 (under NCE) 2021
Total Annual Federal Funding: \$9,213,802

Other Active Grants and Contracts (Non-Federal Funding)

Timothy Bullock, Ph.D.

Alejandro Gru, M.D.

Hui Li, Ph.D.

Chris Moskaluk, M.D., Ph.D.

Melinda Poulter, Ph.D.

Joe Wienczek, Ph.D.

Eli Williams, Ph.D.

James Zimring, M.D., Ph.D.

Total Annual Non-Federal Funding:

\$171,181

Publications and Awards cont.

Selected Faculty Publications

Journal Articles

Alveolar Macrophages in Influenza A Infection Guarding the Castle with Sleeping Dragons Somerville L, Cardani A, **Braciale TJ**. *Infect Dis Ther*. 2020 May;1(1):10.31038/ idt.2020114. doi: 10.31038/idt.2020114. Epub 2020 May 15.PMID: 33681871

Profiling of the immune landscape in murine glioblastoma following blood brain/tumor barrier disruption with MR image-guided focused ultrasound Sheybani ND, Witter AR, Garrison WJ, Miller GW, Price RJ, **Bullock TNJ**. *J Neurooncol*. 2021 Nov 3. doi: 10.1007/ s11060-021-03887-4. Online ahead of print. PMID: 34734364

CD40 stimulation as a molecular adjuvant for cancer vaccines and other immunotherapies **Bullock TNJ**. *Cell Mol Immunol*. 2021 Jul 19. doi: 10.1038/ s41423-021-00734-4. Online ahead of print. PMID: 34282297

Therapeutic vaccination targeting CD40 and TLR3 controls melanoma growth through existing intratumoral CD8 T cells without new T cell infiltration **Stevens AD, Bullock TNJ**. *Cancer Immunol Immunother*. 2021 Aug;70(8):2139-2150. doi: 10.1007/s00262-020-02841-z. Epub 2021 Jan 16.PMID: 33452626

Fundamentals of Cancer Immunology and Their Application to Cancer Vaccines **Bullock TNJ**. *Clin Transl Sci*. 2021 Jan;14(1):120-131. doi: 10.1111/cts.12856. Epub 2020 Oct29.PMID: 32770735

Variant Acute Promyelocytic Leukemia Presenting Without Auer Rods Highlights the Need for Correlation with Cytogenetic Data in Leukemia Diagnosis Courville EL, Shantzer L, Vitzthum von Eckstaedt HC, Mellot H, Keng M, Sen J, Morris A, **Williams E, El Chaer F**. *Lab Med*. 2021 Jul 16:Imab051. doi: 10.1093/ labmed/Imab051. Online ahead of print.PMID: 34268555

Normal gastrointestinal tract inflammatory cells and review of select benign hematomalymphoid proliferations. **Ju JY, Stelow EB, Courville EL**. *Semin Diagn Pathol*. 2021 Jul;38(4):6-13. doi: 10.1053/j.semmp.2021.02.001. Epub 2021 Feb 26.PMID: 33726961

Characteristic CD45RA/CD45RO maturation pattern by flow cytometry associated with the CD45 C77G polymorphism **Courville EL, Lawrence MG**. *Cytometry B Clin Cytom*. 2021 Sep;100(5):602-605. doi: 10.1002/cyto.b.21993. Epub 2021 Feb 8.PMID: 33556222

Daratumumab Interference in Flow Cytometry Producing a False Kappa Light Chain Restriction in Plasma Cells **Kleinot W, Aguilera N, Courville EL**. *Lab Med*. 2021 Jul 1;52(4):403-409. doi: 10.1093/labmed/ lmaa107.PMID: 33345283

The Hypertension Related Gene G-Protein Coupled Receptor Kinase 4 Contributes to Breast Cancer Proliferation Yue W, Tran HT, Wang JP, Schiermeyer K, **Gildea JJ, Xu P, Felder RA**. *Breast Cancer (Auckl)*. 2021 May 20;15:11782234211015753. doi: 10.1177/11782234211015753. eCollection 2021.PMID: 34103922

Iron control of erythroid microtubule cytoskeleton as a potential target in treatment of iron-restricted anemia **Goldfarb AN, Freeman KC, Sahu RK, Elagib KE, Holy M, Arneja A, Polanowska-Grabowska R, Gru AA, White Z**. *3rd, Khalil S, Kerins MJ, Ooi A, Leitinger N, Luckey CJ, Delehanty LL.Nat Commun*. 2021 Mar 12;12(1):1645. doi: 10.1038/s41467-021-21938-2.PMID: 33712594

How did we reform our out of control massive transfusion protocol program? Adkins BD, Libby TA, Mayberry MM, Brady TW, Halls JB, Corbett SM, Schoeny J, Shields EP, Chowdhury J, Kinsinger-Stickel AN, **Wehrli G, Jaeger NR, Robertson MP, Butler KM, Lawson SM, Calland JF, Gorham JD**. *Transfusion*. 2021 Nov;61(11):3066-3074. doi: 10.1111/trf.16706. Epub 2021 Oct 18.PMID: 34661301

Primary cutaneous anaplastic large-cell lymphoma with aberrant cytokeratin expression: An unusual mimicker of poorly differentiated carcinomas Lee J, Jiang H, **Gru AA**. *J Cutan Pathol*. 2021 Oct 27. doi: 10.1111/ cup.14157. Online ahead of print.PMID: 34705295

Multiple Erythematous Papules on the Toes: Challenge Ravicz JR, Hernandez-Perez M, **Gru AA**. *Am J Dermatopathol*. 2021 Aug 1;43(8):e93- e94. doi: 10.1097/ DAD.0000000000001805. PMID: 34276033

Multiple Erythematous Papules on the Toes: Answer Ravicz JR, Hernandez-Perez M, **Gru AA**. *Am J Dermatopathol*. 2021 Aug 1;43(8):599-600.doi:10.1097/ DAD.0000000000001806. PMID: 34276030

Secondary skin involvement in classic Hodgkin lymphoma: Results of an international collaborative cutaneous lymphoma working group study of 25 patients **Gru AA, Bacchi CE, Pulitzer M, Bhagat G, Kempf W, Robson A, Plaza JA, Pincus L, Raghavan S, Xu M, Vencato da Silva T, Salavaggione AL, Subtil A, Battistella M**. *J Cutan Pathol*. 2021 Nov;48(11):1367- 1378. doi: 10.1111/cup.14077. Epub 2021 Jul 5.PMID: 34089205

An unusual case of T-cell prolymphocytic leukemia mimicking a cutaneous vasculitis Edmonds N, Guerra R, Noland MB, Schenck O, Krasner B, **Gru AA**. *J Cutan Pathol*. 2021 Oct;48(10):1311-1316. doi: 10.1111/cup.14079. Epub 2021 Jun 27.PMID: 34089197

Response To: PD-1 and PD-L1 Immunohistochemistry as a Diagnostic Tool for Classic Hodgkin Lymphoma in Small- volume Biopsies **Volaric AK, Gru AA**. *Am J Surg Pathol*. 2021 Sep 1;45(9):1296-1297. doi: 10.1097/ PAS.0000000000001743.PMID: 34081039

Primary Cutaneous CD4-Positive Small/ Medium T-Cell Lymphoproliferative Disorder Mimicking Jessner Lymphocytic Infiltrate and Tumid Lupus-A Report of Two Cases Yi LG, **Gru AA**. *Am J Dermatopathol*. 2021 May 17. doi: 10.1097/DAD.0000000000001982. Online ahead of print.PMID: 34001748

Rare EBV-associated B cell neoplasms of the gastrointestinal tract **Volaric AK, Singh K, Gru AA**. *Semin Diagn Pathol*. 2021 Jul;38(4):38-45. doi: 10.1053/j.semmp.2021.04.004. Epub 2021 Apr 29.PMID: 33985830

Linos KD, Jour G, Duran Rincon J, **Wick M, Sangueza M, Gru AA**. *J Cutan Pathol*. 2021 Jul;48(7):847-855. doi: 10.1111/cup.13942. Epub 2021 Jan 7.PMID: 33340147

Primary cutaneous follicle center lymphoma in a 16-year-old girl Edmonds N, Hernández-Pérez M, Holsinger M, **Gru AA**. *J Cutan Pathol*. 2021 May;48(5):663-668. doi: 10.1111/cup.13939. Epub 2021 Jan 13.PMID: 33326136

Publications and Awards cont.

PRAME immunohistochemistry as an adjunct for diagnosis and histological margin assessment in lentigo maligna

Gradecki SE, Valdes-Rodriguez R, **Wick MR**, **Gru AA**.

Histopathology. 2021 Jun;78(7):1000-1008. doi: 10.1111/his.14312. Epub 2021 Apr 2. PMID: 33280156

Spindle-cell (Sarcomatoid) Variant of Cutaneous Anaplastic Large-cell Lymphoma (C-ALCL): An Unusual Mimicker of Cutaneous Malignant Mesenchymal Tumors-A Series of 11 Cases

Gru AA, Bhagat G, Subtil A, **Raghavan SS**, Pulitzer M, Chung C, Sanguenza M, Plaza JA. Am J Surg Pathol. 2021 Jun 1;45(6):796-802. doi: 10.1097/PAS.0000000000001623. PMID: 33234878

Landscape of Chimeric RNAs in Non-Cancerous Cells

Chen C, Haddox S, Tang Y, Qin F, **Li H**. Genes (Basel). 2021 Mar 24;12(4):466. doi: 10.3390/genes12040466. PMID: 33805149

Comparative study of bioinformatic tools for the identification of chimeric RNAs from RNA Sequencing

Singh S, **Li H**. RNA Biol. 2021 Jun 18:1-14. doi: 10.1080/15476286.2021.1940047. Online ahead of print. PMID: 34142643

Chimeric RNAs in cancer Shi X, Singh S, Lin E, **Li H**.

Adv Clin Chem. 2021;100:1-35. doi: 10.1016/bs.acc.2020.04.001. Epub 2020 May 27. PMID: 33453863

The discovery of AVIL as a bona fide oncogene in glioblastoma Xie Z, **Li H**.

Mol Cell Oncol. 2020 Sep 25;7(6):1804309. doi: 10.1080/23723556.2020.1804309. eCollection 2020. PMID: 33241106

The lysophospholipid-binding molecule CD1D is not required for the alloimmunization response to fresh or stored RBCs in mice despite RBC storage driving alterations in lysophospholipids Medved J, Knott BM, Tarrah SN, Li AN, Shah N, Moscovich TC, Boscia AR, Salazar JE, Santhana-krishnan M, Hendrickson JE, Fu X, **Zimring JC**, **Luckey CJ**.

Transfusion. 2021 Jul;61(7):2169-2178. doi: 10.1111/trf.16554. Epub 2021 Jun 28. PMID: 34181769

Modeling muscle regeneration in RNA toxicity mice

Yadava RS, Mandal M, Giese JM, Rigo F, Bennett CF, Mahadevan MS.

Hum Mol Genet. 2021 Jun 9;30(12):1111-1130. doi: 10.1093/hmg/ddab108. PMID: 33864373

CON: Testing for ESBL production is unnecessary for ceftriaxone-resistant Enterobacterales **Mathers AJ**, Lewis JS

2nd. JAC Antimicrob Resist. 2021 May 7;3(2):dlab020. doi: 10.1093/jacamr/dlab020. eCollection 2021 Jun. PMID: 34223109

Development of Wastewater Pooled Surveillance of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) from Congregate Living Settings

Colosi LM, Barry KE, Kotay SM, Porter MD, **Poulter MD**, Ratliff C, Simmons W, Steinberg LI, Wilson DD, Morse R, Zmick P, **Mathers AJ**. Appl Environ Microbiol. 2021 Jun 11;87(13):e0043321. doi: 10.1128/AEM.00433-21. Epub 2021 Jun 11. PMID: 33858836

Navigating treatment approaches for presumed ESBL-producing infections Tamma PD, **Mathers AJ**.

JAC Antimicrob Resist. 2021 Feb 24;3(1):dlaa111. doi: 10.1093/jacamr/dlaa111. eCollection 2021 Mar. PMID: 33659895

Consecutive antibiotic shortages highlight discrepancies between microbiology and prescribing practices for intra-abdominal infections Park SC, Gillis-Crouch GR, Cox HL, Donohue L, Morse R, Vegesana K, **Mathers AJ**.

Antimicrob Agents Chemother. 2021 Feb 16;65(5):e01980-20. doi: 10.1128/AAC.01980-20. Online ahead of print. PMID: 33593836

Implementation of a Rapid Phenotypic Susceptibility Platform for Gram-Negative Bloodstream Infections With Paired Antimicrobial Stewardship Intervention: Is the Juice Worth the Squeeze? Robinson ED, Stilwell AM, Attai AE, Donohue LE, Shah MD, Hill BK, Elliott ZS, Poulter M, Brewster F, Cox HL, **Mathers AJ**.

Clin Infect Dis. 2021 Sep 7;73(5):783-792. doi: 10.1093/cid/ciab126. PMID: 33580233

Risk Factors Associated with Carbapenemase-Producing Enterobacterales (CPE) Positivity in the Hospital Wastewater Environment Park SC, Parikh H, Vegesana K, Stoesser N, Barry KE, Kotay SM, Dudley S, Peto TEA, Crook DW, Walker AS, **Mathers AJ**.

Appl Environ Microbiol. 2020 Nov 24;86(24):e01715-20. doi: 10.1128/AEM.01715-20. Print 2020 Nov 24. PMID: 32917755

MLH1/PMS2-deficient Endometrial Carcinomas in a Universally Screened Population: MLH1 Hypermethylation and Germline Mutation Status Kurpiel B, Thomas MS, Mubeen M, Ring KL, Modesitt SC, **Moskaluk CA**, **Mills AM**.

Int J Gynecol Pathol. 2021 Feb 11. doi: 10.1097/PGR0000000000000767. Online ahead of print. PMID: 33577226

Targeting immune checkpoints in gynecologic cancer: updates & perspectives for pathologists **Mills AM**, **Bullock TN**, Ring KL.

Mod Pathol. 2021 Sep 7. doi: 10.1038/s41379-021-00882-y. Online ahead of print. PMID: 34493822

The Immune Checkpoint Inhibitor LAG-3 and Its Ligand GAL-3 in Vulvar Squamous Neoplasia Cocks MM, **Mills AM**.

Int J Gynecol Pathol. 2021 Mar 29. doi: 10.1097/PGR0000000000000782. Online ahead of print. PMID: 33782343

MHC Class I Loss in Triple-negative Breast Cancer: A Potential Barrier to PD-1/PD-L1 Checkpoint Inhibitors

Kurpiel B, Thomas MS, Mubeen M, Ring KL, Modesitt SC, **Moskaluk CA**, **Mills AM**.

Int J Gynecol Pathol. 2021 Feb 11. doi: 10.1097/PGR0000000000000767. Online ahead of print. PMID: 33577226

PD-L1 and Mismatch Repair Status in Uterine Carcinosarcomas

Jenkins TM, Cantrell LA, **Stoler MH**, **Mills AM**. Int J Gynecol Pathol. 2021 Nov 1;40(6):563-574. doi: 10.1097/

PGR0000000000000752. PMID: 33323859

PD-L1 Interpretation in Cervical Carcinomas: Proceedings of the ISGyP Companion Society Session at the 2020 USCAP Annual Meeting **Mills AM**.

Int J Gynecol Pathol. 2021 Jan;40(1):1-4. doi: 10.1097/

PGR0000000000000701. PMID: 33290349

MHC class I loss in endometrial carcinoma: a potential resistance mechanism to immune checkpoint inhibition

Friedman LA, **Bullock TN**, Sloan EA, Ring KL, **Mills AM**.

Mod Pathol. 2021 Mar;34(3):627-636. doi: 10.1038/s41379-020-00682-w. Epub 2020 Oct 3. PMID: 33011747

Putative precancerous lesions of vulvar squamous cell carcinoma

Jenkins TM, **Mills AM**.

Semin Diagn Pathol. 2021 Jan;38(1):27-36. doi: 10.1053/j.semmp.2020.09.006. Epub 2020 Sep 6. PMID: 32948383

Benign and malignant hematologic manifestations in patients with VEXAS syndrome due to somatic mutations in UBA1 **Obiorah IE**, Patel BA, Groarke EM, Wang W, Trick M, Ombrello AK, Ferrada MA, Wu Z, Gutierrez-Rodriguez F, Lotter J, Wilson L, Hoffmann P, Cardona DO, Patel N, Dulau-Florea A, Kastner DL, Grayson PC, Beck DB, Young NS, Calvo KR.

Blood Adv. 2021 Aug 24;5(16):3203-3215. doi: 10.1182/bloodadvances.2021004976.

Publications and Awards cont.

PMID: 34427584

Clonal cutaneous and neurosyphilis: A pitfall in pseudolymphoma diagnosis
Yi LG, Rusu CA, Cropley TG, Marchi E, **Gru AA**, Greer KE, **Raghavan SS**.
J Cutan Pathol. 2021 Oct 16. doi: 10.1111/cup.14153. Online ahead of print.PMID: 34655438

Next-generation sequencing confirms T-cell clonality in a subset of pediatric pityriasis lichenoides

Raghavan SS, Wang JY, **Gru AA**, Marqueling AL, Teng JMC, Brown RA, Novoa RA, Kim Y, Zehnder J, Zhang BM, Rieger KE.
J Cutan

Pathol. 2021 Oct 6. doi: 10.1111/cup.14143. Online ahead of print.PMID: 34614220

Primary Cutaneous Monomorphic Post-transplant Lymphoproliferative Disorder Mimicking Squamous Cell Carcinoma In Situ **Craddock AP**, **Gru AA**, Mannschreck D, Wilson BB, **Raghavan SS**.

Am J Dermatopathol. 2021 Apr 21. doi: 10.1097/DAD.0000000000001950. Online ahead of print.PMID: 33899771

Histopathology of primary cutaneous adenoid cystic carcinoma of the scrotum presenting with predominantly solid growth

Gradecki SE, **Gru AA**, Rieger KE, **Raghavan SS**.
J Cutan Pathol. 2020 Dec 14. doi: 10.1111/cup.13928. Online ahead of print.PMID: 33314272

Eruptive Spitz nevus, a striking example of benign metastasis

Raghavan SS, Kapler ES, Dinges MM, Bastian BC, Yeh I.
Sci Rep. 2020 Oct 1;10(1):16216. doi: 10.1038/s41598-020-73264-0.PMID: 33004920

The cytologic and immunohistochemical findings of pancreatic mixed acinar-endocrine carcinoma

Whitehair R, **Stelow EB**.
Diagn Cytopathol. 2021 Feb;49(2):287-294. doi: 10.1002/dc.24641. Epub 2020 Oct 31.PMID: 33128511

Galectin-3 Expression in High-Risk HPV- Positive and Negative Head & Neck Squamous Cell Carcinomas and Regional Lymph Node Metastases **Coppock JD**, **Mills AM**, **Stelow EB**.

Head Neck Pathol. 2021 Mar;15(1):163-168. doi: 10.1007/s12105-020-01195-3. Epub 2020 Jun 20.PMID: 32564273

Corrigendum to: Global Cytopathology- Hematopathology Practice Trends

Zadeh SL, Balassanian R, Cheung MC, Falchi

L, Hasserjian R, Lin O, Long SR, Ly A, Menke JR, Mou E, Natkunam Y, Ruiz-Cordero R, **Volatic AK**, Wang L, Wen KW, Gratzinger D. Am J Clin Pathol. 2021 Oct 1;aqab184. doi: 10.1093/ajcp/raqab184. Online ahead of print.PMID: 34595513

Global Cytopathology-Hematopathology Practice Trends

Zadeh SL, Balassanian R, Cheung MC, Falchi L, Hasserjian R, Lin O, Long SR, Menke JR, Mou E, Natkunam Y, Ruiz-Cordero R, **Volatic AK**, Wang L, Wen KW, Gratzinger D.

Am J Clin Pathol. 2021 Sep 11;aqab111. doi: 10.1093/ajcp/raqab111. Online ahead of print. PMID: 34508545

Mouse background genetics in biomedical research: The devil's in the details

Hay AM, Howie HL, **Gorham JD**, D'Alessandro A, Spitalnik SL, Hudson KE, **Zimring JC**.
Transfusion. 2021 Oct;61(10):3017-3025. doi: 10.1111/trf.16628. Epub 2021 Sep 3.PMID: 34480352

Hematologic and systemic metabolic alterations due to Mediterranean class II G6PD deficiency in mice

D'Alessandro A, Howie HL, Hay AM, Dziewulska KH, Brown BC, Wither MJ, Karafin M, Stone EF, Spitalnik SL, Hod EA, Francis RO, Fu X, Thomas T, **Zimring JC**.

JCI Insight. 2021 Jul 22;6(14):e147056. doi: 10.1172/jci.insight.147056.PMID: 34138756

In utero exposure to alloantigens primes alloimmunization to platelet transfusion in mice
Poston JN, Jash A, Hannan LM, Hay AM, Usaneerungrueng C, Howie HL, Kapp LM, **Zimring JC**.

Transfusion. 2021 Mar;61(3):687-691. doi: 10.1111/trf.16224. Epub 2020 Dec 18.PMID: 33336414

The impact of donor sex and age on stored platelet metabolism and post-transfusion recovery

D'Alessandro A, Stefanoni D, Slichter SJ, Fu X, **Zimring JC**.
Blood Transfus. 2021 May;19(3):216-223. doi: 10.2450/2020.0145-20. Epub 2020 Oct 14.PMID: 33085601

Protein-L-isoaspartate O-methyltransferase is required for in vivo control of oxidative damage in red blood cells

D'Alessandro A, Hay A, Dzieciatkowska M, Brown BC, Morrison EJ, Hansen KC, **Zimring JC**.
Haematologica. 2021 Oct 1;106(10):2726-2739. doi: 10.3324/haematol.2020.266676.PMID: 33054131

Turning over a new leaf on turning over RBCs
Zimring JC. Blood. 2020 Oct 1;136(14):1569-1570. doi: 10.1182/blood.2020008463.PMID: 33002125

Awards



Robin Felder, Ph.D. has been named one of 175 prolific academic innovators from across the world as a Fellow of the National Academy of Inventors for his numerous innovations in laboratory automation.

The 2020 Fellow class represents 115 research universities and governmental and non-profit research institutes worldwide. They collectively hold over 4,700 issued U.S. patents. Among the 2020 Fellows are recipients of the National Academies of Sciences, Engineering, and Medicine, American Academy of Arts & Sciences, and Nobel Prize, as well as other honors and distinctions. Their collective body of research covers a range of scientific disciplines including biomedical engineering, computer engineering, materials science, and physics.

With the election of the 2020 class, there are now 1,403 NAI Fellows worldwide, representing more than 250 prestigious universities and governmental and non-profit research institutes. To date, NAI Fellows hold more than 42,700 issued U.S. patents, which have generated over 13,000 licensed technologies and companies, and created more than 36 million jobs. In addition, over \$2.2 trillion in revenue has been generated based on NAI Fellow discoveries.

Publications and Awards *cont.*



Robin LeGallo, M.D. was awarded a 2021 Jevtovic-Todorovic MD/ PhD Teaching Award in appreciation for extraordinary efforts in training MSTP students.

She was also awarded the Mulholland Teaching award in 2021 for the EIGHTH year in a row. This award is given by medical school class for pre-clerkship classes.

Robin received the Robert Bean teaching award in 2021 for the FOURTH time! This

award is given to one faculty per year for excellence in undergraduate medical education.

She also received the Robley Douglinson teaching award in 2021 which is awarded by graduating medical school class to one faculty member for outstanding teaching efforts.

Janet Cross, Ph.D. was awarded a David Harrison Distinguished Teaching Professorship in recognition of her exceptional leadership in graduate education.

Mendy Poulter, M.D. has been awarded the 2021 Dean's Clinical Excellence Award for her work in the Clinical Microbiology Laboratory.

Amy Mathers, M.D. has been awarded the 2021 Edlich-Henderson Innovator of the Year by The University of Virginia Licensing & Ventures Group "for her heroic efforts to rapidly create in-house testing at UVA during the onset of COVID-19, and for developing waste water testing solutions that allowed the University to welcome students back to Grounds for the 2020-2021 school year."



UVA Pathology In The News

Anemia Discovery Points to More Effective Treatment Approaches | UVA Today (virginia.edu)

By Josh Barney | April 26, 2021

UVA Today

<https://uvaconnect.com/scientists-id-potential-treatment-approaches-for-muscle-loss-in-myotonic-dystrophy/> June 3, 2021

UVA Connect

CNN's Dr. Sanjay Gupta Turns to UVA as Example of Wastewater Surveillance Testing | UVA Today (virginia.edu)

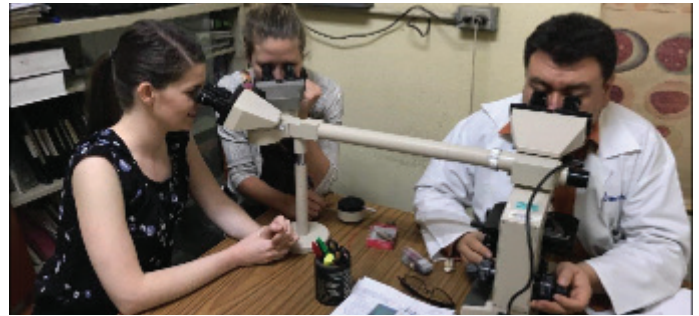
Caroline Newman | November 9, 2021 UVA Today



Philanthropy

Global Outreach

We are pleased to announce several global outreach initiatives in pathology. Please consider a generous donation to assist us in providing these pathology outreach opportunities to our faculty and trainees. Professor of Pathology Henry Frierson, M.D. and pathology residents are spearheading pathology clinical outreach and cervical screening campaigns in Guatemala.



Cytogenetics and Molecular Genetics Fellowship

A major missing piece to our training programs has been specialized training in molecular diagnostics. Eli Williams, Ph.D., has taken on the task of creating this two-year fellowship program and the department has decided to self-fund this program without institutional support. We could use your help in supporting this fellowship to enhance UVA's role in shaping the burgeoning fields of molecular diagnostics and clinical genomics.

Sponsor a Pathology Summer Fellowship

The eight-week Summer Enrichment Program in Pathology provides second-year medical students with hands-on experience in disease diagnosis. Each intern rotates through all AP and laboratory medicine services. Please consider supporting our profession by contributing a donation to support a medical student in this program. The cost of hosting each student is \$2,500. With your support, we hope to provide two student stipends in 2022.

Honor a Faculty Mentor

Thank your favorite faculty mentor by making a gift to the UVA Department of Pathology in their honor.



Donations can be made online by clicking on the "Make a Gift" button on the UVA Pathology website at med.virginia.edu/pathology or by check or credit card using the enclosed self addressed return envelope.



UVA Health

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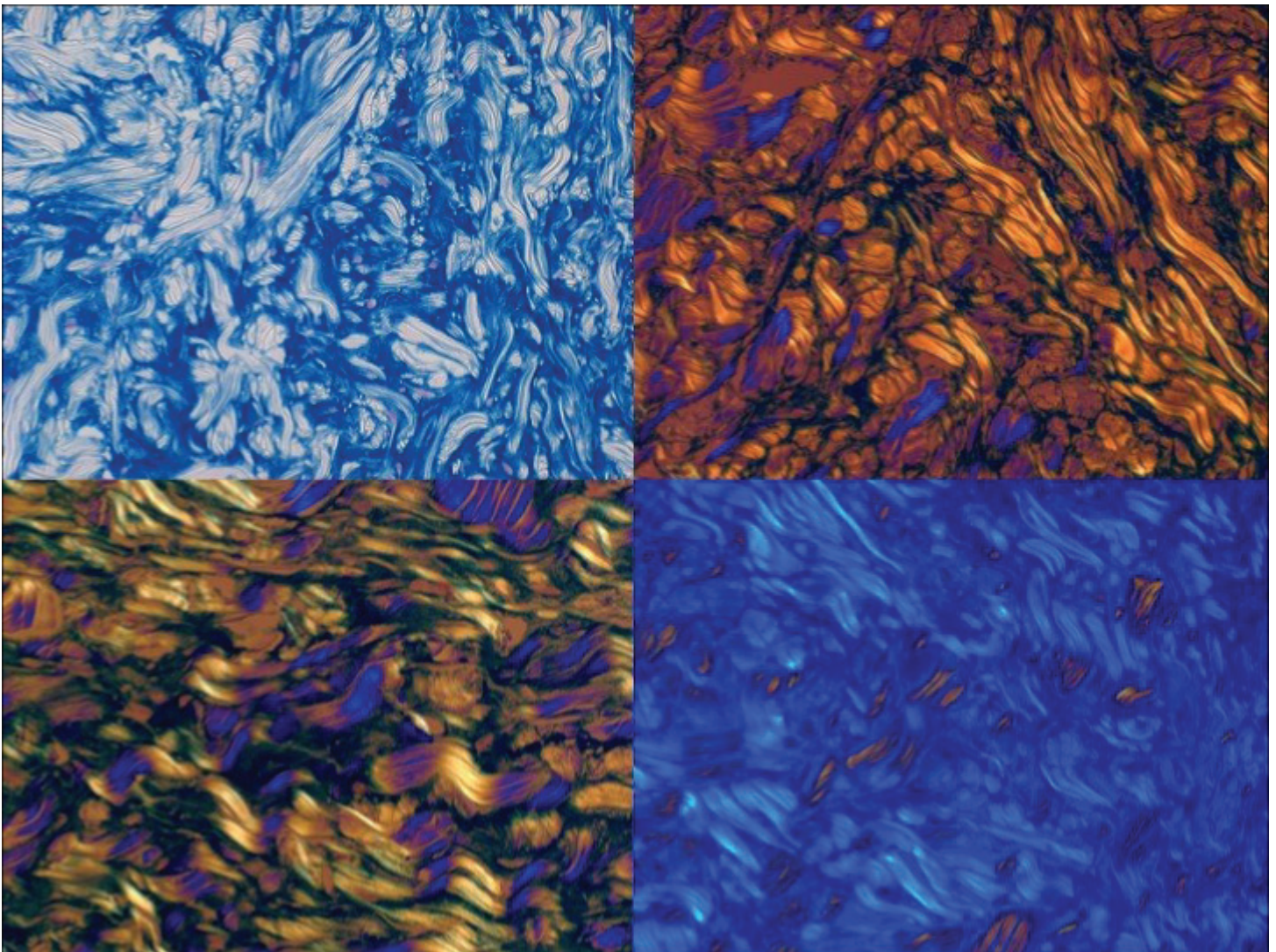
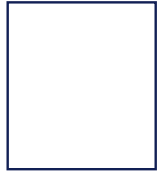
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For more information, please visit:
medicine.virginia.edu/pathology

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Winning image, titled "Building Blocks," by Margaret Cocks, M.D., Ph.D., one of our Dermatopathology fellows for 2018-2019.