UVA Path Report

News from the UVA Department of Pathology

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A Message from the Chairman



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

The faculty members at an academic medical center are a busy lot. They are expected to carry out their clinical and research duties using the latest medical and scientific knowledge and ideally are involved in the creation of these best practices by their research and scholarly activity. But the fact that the UVA Department of Pathology resides in the School of Medicine indicates the central purpose of our

academic life: to transmit the best of the current knowledge of our fields to the next generation of physicians and researchers, and to train them to push the boundaries of human knowledge and medical care to areas that we have not even imagined. Often, however, it seems that medical expertise and research prowess are the most celebrated of the missions of the academic medical center, but in this issue of our annual newsletter we hope to highlight and celebrate the inspirational teachers in the UVA Pathology Department and some of their educational efforts. The great thing about working in a school of medicine is that everything we do involves our trainees, and that includes our teaching efforts. Highlighted in this issue are the efforts and experiences of some of the learners in various training programs in our Department. Our efforts begin with outreach to undergraduate students as is highlighted by the teaching vignette of one of our residents, Dr. Debra Berry. Our efforts to entice medical students to join the practice of pathology is highlighted by the description of our most recent postsophomore fellow and a follow-up on some of our recent summer interns. Our educational programs are not confined to UVA alone; we also provide some highlights of our recently instituted rotation for our residents in Guatemala, providing

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exposure to issues in global health and how medicine is practiced with constrained resources in developing countries. Next, we describe our Ph.D. training program, which provides a unique research training opportunity at UVA. Our program stresses translational research, and our Ph.D. students are the only ones at UVA with required rotations on clinical services. Our weekly Pathology seminar series is a true reflection of the wide-ranging purview of our Department, with lectures in anatomic pathology, clinical pathology and basic research, with attendance by learners from all of our programs. I like to think that maybe one of our trainees listening to a talk from an expert in a different field from their chosen one gets an intellectual spark that over time leads to a new discovery or a new innovation. While it is difficult sometimes to maintain cohesion in such a diverse cadre of interests that is an academic pathology department, I do indeed think it is a fertile field for new ideas to take root and flower. Please turn the page and sample a bouquet of educational vignettes plucked from our garden.

Christopher Moskaluk, M.D., Ph.D.

In Focus: Medical Education

The Next Generation Curriculum

by Robin LeGallo, M.D.

UVA is in its 8th year of the NxGen curriculum, which strives to combine the practice and science of medicine across the four years of medical school. The pre-clerkship phase is delivered in an active learning, integrated systems approach and pathology continues to provide leadership and excellence in teaching and is a foundation of the curriculum's success. Robin LeGallo and Jim Gorham are system leaders of the early foundational courses. Eli Williams recently took over the genomics thread from Wendy Golden and this is one of the most rapidly growing areas of education. Pathology continues to have a strong presence in all organ systems with involvement of over a dozen faculty members. Resident run gross and microscopic teaching labs are a highlight of our curriculum.

While not without its challenges, the benefits of integrated teaching have become apparent. Students are exposed to the practice of pathology from the first months of medical school. They observe the role of the pathologist in patient care through interdisciplinary teaching. It is common for students to ask more about pathology as a profession. There is a robust student run pathology interest group that offers opportunities for students.



Pathology Interest Group

by Robin LeGallo, M.D.

This is the fifth year of the Pathology Interest Group, which is funded through the Intersociety Council for Pathology Information and is involved in outreach and educational opportunities to UVA medical students. Over 50 students participate in the activities it offers, which includes a lunchtime panel on the career of pathology, resident led microscopic sessions to complement the classroom curriculum and opportunities to observe autopsies. Newer sessions include pathology jeopardy and clinical pathology sessions with a focus on interpretation of laboratory values.

Molecular and Cellular Basis of Disease

by Janet Cross, Ph.D.



From left to right: Chip (Charles) Landen, Jennifer Munson (mentor), Ali Harris (Ph.D. Candidtate defending), Janet Cross, Patrick Dillon, Dan Gioeli

The graduate program in the Molecular and Cellular Basis of Disease (MCBD) confers the Ph.D. degree in Experimental Pathology. The program was established in 2004 with a stated purpose of providing a graduate training experience with a strong focus on translational research. The MCBD program draws on the unique environment provided by the combined clinical and research missions of the UVA Department of Pathology to support a unique curriculum that weaves a disease-centric thread through the entire predoctoral training experience.

Students matriculate into the MCBD program near the end

of their first year at UVA, after completing core coursework and research rotations as members of the umbrella program in Biomedical Sciences (BIMS). Once a student has elected to train through MCBD, we devise an individualized training plan based on his/her research interests. The didactic coursework required of our trainees is designed such that the lectures and discussions focus on disease topics, each led by a team composed of a clinician and basic scientist. The students learn about each disease from these two perspectives, gaining an appreciation for how the disease is diagnosed and treated and the challenges of caring for the patients as well as an understanding of the state-of-the-art in the scientific study of the disease. The cornerstone of our curriculum is the Rotations in Diagnostic and Interventional Medicine, during which each student completes four week-long rotations throughout the Anatomic and Laboratory Medicine divisions. Rotation selections are made with the research interests of the individual student in mind, though all students are expected to spend at least one week in Surgical Pathology. If desired, the students have the option to spend one week with clinical partners in gynecological oncology, radiation oncology and/or breast oncology. In cases where the student's research is not cancer focused, they are offered the option to independently arrange a specialized interventional medicine experience that is connected to their own research. While on each rotation, students are immersed in the daily activities of the service. While educational in their own right, these rotation experiences also allow students to establish relationships with our clinical faculty who then serve as resources for later discussions. Students are encouraged to include these faculty members on their advisory committee.

Since its inception, MCBD has graduated 28 students with the Ph.D. in Experimental Pathology. Our alumni have secured successful postgraduate training opportunities in competitive academic postdocs or, in the case of our M.D./ Ph.D. trainees, residencies and fellowships leading to faculty positions. Two of our graduates have been so inspired by their experience in the program that they have chosen to pursue clinically-oriented fellowships, one in clinical chemistry and the other in clinical microbiology. Others have launched careers in industry, science communication, and teaching. While long-term outcomes will require more time, we contend that our have graduates benefited from unique training opportunities that set them apart from their peers.

Resident Educators

Regardless of whether we enjoy teaching, pathologists are often required to be good educators. When a clinician calls in need of an explanation for the diagnosis of epithelioid hemangioendothelioma or work-up of platelet refractoriness, we must be excellent teachers to ensure excellent patient care. Learning how to teach effectively is a critical professional ability. From day one of residency at UVA, teaching is emphasized as a skill to be learned and practiced. For the past two years, PGY-1 residents spent 8 hours of their boot camp learning and practicing principles of good teaching. The first three points they are taught to assess are: know your audience, really know your audience, and make sure you understand who is in your audience. This is followed by three big questions: What is the purpose of your teaching? What do your learners need to know and be able to do? How much can a reasonable person retain? Boot camp culminates in a PGY-1-run education experience for 60 summer research undergraduate students on human papillomavirus and cervical cancer screening and prevention.

Fortunately, UVA continually recruits residents and fellows interested in teaching. Some have taken this teaching beyond the medical school and hospital and are working in the community. Below are a few residents who have developed a passion for teaching and have found philanthropic ways of working in the community during their residency and fellowships.



Dr. Christina Pierre and volunteers from 2018 Pap Party in Trinidad

Dr. Christina Pierre is a native of Trinidad and Tobego and moved to Charlottesville for her Clinical Chemistry fellowship. To talk to her makes you feel hopeful for our profession as she thinks big and moves mountains. In the Caribbean, Trinidad and Tobago (T&T) is one of the few countries that has not seen a decline in cervical cancer mortality and has the second highest mortality to incidence ratio after Haiti. This is surprising, given T&T's classification as a high-income country and the existence of a public health system where Pap smears and HPV vaccinations are readily available. Christina realized that the availability of no - or low-cost cervical cancer prevention services offered tangible opportunities to reduce cervical cancer mortality in her country. Christina started an incorporated non-profit initiative called My Sister's Keeper, an organization aimed at spreading awareness about cervical cancer and encouraging women in T&T to take a proactive stance towards cervical cancer prevention. On January 13th, 2018, My Sister's Keeper sponsored a Pap Party. One hundred and eighty six cervical samples were collected and patients with abnormal results were recommended for counselling and follow-up treatment as necessary. In collaboration with the T&T Ministry of Health's Expanded Program on Immunization, 100 first doses of the HPV vaccination were administered and follow-up doses scheduled. Christina has partnered with two of our residents, Ashley Volaric and Sara Zadeh, as well as the UVA Cytology Division and for 2019 aims to: execute a 10-week awareness campaign that will culminate with the 2019 Pap Party, offer 500 free cervical cancer screening tests (Pap only or co-test), offer free HPV vaccinations, and collect data on cervical cancer for research and publication.

Dr. Debi Berry (PGY-4) won the resident teaching award this last year for her multitude of cross grounds community teaching. and aspect that One was particularly meaningful to her was working with the UVA Dale Hale Williams Prehealth Honor Society, which aims to increase the number of culturally capable and sensitive Black and other ethnic minority



physicians. Dr. Berry participated in several of the evening workshops. "Teaching the undergraduate students this past year was a phenomenal experience for me. Crafting a presentation for premedical students revealed gaps in my own knowledge, provided an outlet for me to wax enthusiastically about my field of interest, and challenged me to revisit my own undergraduate anxieties. The students were genuinely inquisitive, with a fascination untouched by the avalanche of expectations and deadlines burying medical students." Dr. Berry noted that in concert with the modules exploring topics outside of pathology, the earnestness of the undergraduates served as a reminder of how exciting the medical profession is and, "how relieved I am to be out of college!"

Drs. Ashley Volaric (PGY-3) and Sara Zadeh (PGY-4) are



Drs. Ashley Volaric and Sara Zadeh collaborating with Dr. Rodas. pathologist in Guatemala

keenly interested in global medicine. The Guatemala Pathology Initiative was born as a result of a strong desire to improve healthcare abroad. This four-week rotation provides residents with a unique opportunity to learn and practice pathology in an under-funded and low-resource regional public hospital serving multiple surrounding cities. By participating, residents will refine their diagnostic acumen by previewing and signing out cases without access to ancillary tests such as immunohistochemistry. In the absence of these histologic "life-lines", morphologic assessment becomes paramount and crucial for accurate interpretation of surgical pathology specimens. A wide

variety of tissue types is processed at this lab including gynecologic resections but also include gastrointestinal resections, total nephrectomies, hematolymphoid neoplasms, cytology specimens, and many others. The pathologist that residents work with is eager to discuss cases and foster a strong learning environment. There is even the potential to learn to gross specimens that the resident has not grossed before at UVA (as Sara unexpectedly experienced on her most recent trip!).

Looking forward, the aim is to establish a telepathology program whereby consult cases from Guatemala are submitted, discussed, and signed out with residents and faculty at UVA. Other long-term goals include optimizing the histology laboratory through improving tissue processing and validating a basic immunohistochemical panel, and establishing a cervical cancer screening campaign in nearby Totonicapán. Ashley and Sara comment that their experience in establishing this rotation taught them a vast amount from diagnostics to laboratory development and management that will be an asset to them in their future practices. As a bonus, it is personally fulfilling to collaborate with a pathologist in Guatemala who truly cares about his laboratory and welcomes any help with open arms.

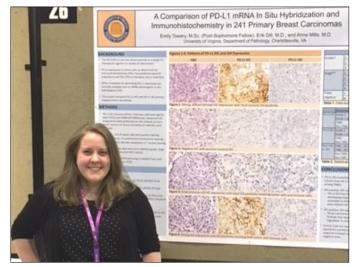
Summer Innes & Post Sophomore Fellowship Programs

by Kristen Atkins, M.D.

When I was in medical school one of the most impactful years was my post-sophomore student fellowship. I am still in contact with the then junior faculty and senior residents in my program and have so much gratitude for the foundational training. It has always been a desire to pass along that same experience to medical students seeking a different opportunity. UVA also sponsors a pathology year, the Mike Gaffey Student Fellowship, named after a beloved former UVA faculty. The year is reserved for students who show an interest in pathology and are looking for an immersive opportunity.

POST SOPHOMORE FELLOW

This last year our post-sophomore fellow was Emily Towery, a medical student from the University of Tennessee. Emily quickly assimilated into our department and became an integral member of the resident team. She read voraciously, and challenged herself to truly understand the



Emily Towery presents at USCAP 2018

depth of a topic rather than being content with the diagnosis. Often she would come to a faculty office with a slide in hand and a list of residual questions after her reading. Her notes were well crated and thoughtful. One of our hematopathologists was shocked when he realized she was a second-year medical student and stated her reports were on par to those of the residents.

Emily **presented at interdisciplinary tumor boards** and presented at our resident unknown conference. What impressed me the most is that she asked for coaching and review of her talk prior to her presentations and afterwards. As a result, her teaching improved markedly over the year. She seized opportunities when they arose, such as volunteering to help with **medical student teaching** (cardiovascular pathology, pulmonary pathology and introduction to neoplasia) and interdepartmental requests for topic-specific in- service talks. She and six other residents created and **taught a 2-hour interactive teaching session for 60 undergraduate students** on HPV and cervical cancer.

Emily completed a research project with Dr. Anne Mills during her year. She compared breast carcinoma PD-L1 results on immunohistochemistry versus chromogenic RNA in situ hybridization. This project was presented at the 2018 United States and Canadian Academy of Pathology Meeting in Vancouver, Canada.

Emily is beloved by our residents and faculty and with strong letters of support was a 2018 recipient of an ASCP medical student award. Emily recently returned to

Charlottesville and says she is going to pursue pathology for residency.

SUMMER INNES FELLOWS

The logistics of running a post-sophomore fellowship program are not always easy and understandably some students are wary to add an extra year to their medical training. When Dr. Don Innes retired, the department started an 8 week summer enrichment opportunity in his honor. Now in its third year, this eight week curriculum for two rising second-year medical students has become popular with the medical students. This program is now run by Drs. Robin LeGallo and Joe Wiencek and introduces students to foundational training in AP and CP. Our hope is that this experience will introduce pathology earlier to students interested in exploring pathology/lab medicine as a career. Our first two students Margaret Moore and Lisa Friedman are now fourth-years applying to pathology residencies, so we are off to a great start!



From left to right: Drs. Erik Dill, Jenny Ju, Sarah Gradecki, Anne Mills, Sara Zadeh and post-sophomore fellow Emily Towery

UVA Celebrates a Distinguished Pathologist

It was a great pleasure to watch Dr. Stacey "Chuck" Mills, UVA's Director of Anatomic Pathology, receive the Distinguished Pathologist Award at the 2018 United States and Canadian Academy of Pathologists meeting in Vancouver, Canada. This award is bestowed annually to a pathologist who has made major contributions to the field of pathology over the years. Prior recipients include Drs. Richard Kempson, Stephen Sternberg, Sharon Weiss, Juan Rosai, and many other greats in the discipline.

While my satisfaction in seeing "Stacey E. Mills" added to this list of luminaries was no doubt amplified because he is my father, looking across the audience that evening it was clear my pride-by-association was shared by so many who have interfaced with UVA Pathology. The tremendous impact of his clinical excellence, scholarship, and mentorship further



Dr. Chuck Mills accepting the Distinguished Pathologist Award at the 2018 United States and Canadian Academy of Pathologists meeting.

resonated through the incredibly touching recollections I collected to commemorate the award, just a sampling of which I have space to share here.

As his own most beloved pathology mentor Richard Kempson summarized: "Chuck is the director of one of the most distinguished surgical pathology programs in the country, and no one is more deserving of this award." National colleagues commented on his service as Editor for *The American Jouranl of Surgical Pathology*. Sharon Weiss shared, "He is a superlative editor endowed with a sense of fair play, equanimity, and grace... not to mention diplomatic skills." Henry Appleman jovially remarked, "When he tells me to review a manuscript, I jump to attention and plow

UVA Celebrates a Distinguished Pathologist cont.

through whatever punishment (the manuscript) he has concocted for me. Why do I put up with this malevolent behavior? Simply because beneath that stern Chuck Mills approach I realize that there beats the heart of a gentle, easy-going, thoughtful and compassionate man." Chris Fletcher noted, "Although I'm certain that Chuck experiences episodes of irritation and displeasure in this role, his public '*AJSP* face' is unfailingly even-tempered and even-handed... He has grown *AJSP* and its reputation with enormous success."

Former trainees produced some of the most poignant responses, as well as innumerable references to the importance of appropriate hyphen and apostrophe usage. Guy Nichols commented, "When one first sits nervously as a shiny-faced first year resident at the passenger side of Dr. Mills' double headed microscope, one guickly discovers with joy that he is the rare combination of a brilliant, accomplished man and a very real person, enjoying many same mundane but charming amusements with the rest of us. Intermixed with efficient brilliance moving through the meat of surgical pathology workload and appropriately expounding upon occasional fascinomas in the slide stack, Dr. Mills will interject with almost perfect mimicry relevant quotes from Caddyshack, Die Hard, or Gary Larson's Far Side. For those fortunate to maintain longer association with Dr. Mills and as they mature beyond residency, one learns to appreciate his capacity for kindness and compassion as a colleague and a friend." Bill Geary shared, "It was good fortune to train in anatomic pathology at the University of Virginia. It was great fortune to do so during Chuck's time. It's true that learning from this true polymath yielded moments of intimidating self-doubt. But that was always something that passed gently under the gracious and generous nature of his example. Nothing was withheld from his charges. And he was always quick to encourage the acolyte pathologist that their own success was attainable. It has been the singular honor of my professional life to have been guided by this inestimable physician. And greater still is to have the unalloyed gift of enjoying his friendship."

Many also commented on his deep and varied expertise beyond pathology. UVA's own Mark Stoler commented, "When I think of my friend and partner Chuck Mills, I have to say that the phrase that comes to mind is 'Renaissance Man.' Here is an individual of broad interest and expertise not only in Surgical Pathology but in Life! With any number of outside interests—scuba diving, model airplanes, etc., etc. —if interested, he will be an expert and leader in short order. Excellence is just in his nature and a quality that makes him



Chuck Mills, M.D., receiving the USCAP Board's 2018 Distinguished Pathologist Award.

such a fine role model for all who know him." Our Chair, Chris Moskaluk, seconded this. "None of the myriad interests of this gifted pathologist, cave diver, astronomer, and model plane builder have ever stopped. His intellectual range is extraordinary, as is his influence in the field of surgical pathology." My mother, Linda Mills, shared: "Being his wife has led me to places I never thought I'd explore, like the darkened reaches of Florida's limestone underwater caves, treks into Mayan jungles for a stride down into sunken cenotes, and dining tables of pathologists and their sometimes macabre conversations. All of these three traits have made strolling through life together just a lot of fun!"

My father's embrace for life beyond the microscope is also well-reflected in the comments of my sister, Elizabeth Mills. "He was always so humble and present at the end of the workday it was not until well into my adult life that I realized how amazing he is at his profession." I can echo that fully: I was so fortunate to grow up with a physician father who not only shared with me the wonders of frozen section pathology on unsuspecting insects, but who always made time for family dinners and family adventures. It has been a true joy to work alongside him these recent years, and to carve out a professional home in this fine department he has helped build alongside so many other marvelous colleagues.

To those of you that shared your thoughts with me for the compilation: Thank you! My father accepted it with <u>tremendous</u> gratitude! Truly. A great deal of dust suddenly settled upon the room when it was received. Given the secrecy of my mission in putting together this collection I was unable to broadcast my invitation too broadly, but further additions are welcome! amm7r@virginia.edu

Anne Mills, MD

Faculty: Moving Up

Faculty Promotions



Kristen Atkins, M.D. was promoted to Professor of Pathology. Her main areas of interest are in women's oncology and cytopathology in which she has published over 70 peer-reviewed articles and coedited a breast pathology textbook. She is involved nationally in the American Society of Cytopathology and USCAP and has received numerous teaching awards including the GME Master Educator Award, the Excellence in Education Award from the American Society of Cytopathology, The Mullholland teaching award for UVA medical students, the University of Vermont Academic Achievement Alumni Award, and the ASC Presidential Award. Dr. Atkins directs Pathology's residency program and is the faculty representative for the Housestaff Council for Diversity and Inclusion. She is interested in feedback and effective communication. When she is not teaching or diagnosing she is performing in the Charlottesville Playback Theater group, playing collaborative board games with her husband and two teenage children and trying to obtain mindfulness to her life perspective.



Lindsay Bazydlo, Ph.D. was promoted to Associate Professor of Pathology. She started her career as faculty at the University of Florida in 2011 and then joined the UVa Department of Pathology in 2014. She is currently Director of Coagulation Lab, Director of Toxicology Lab, Co-Scientific Director of Hematology Lab and Associate Director of Clinical Chemistry. She is also co-Director of the Clinical Chemistry Fellowship and plays an active role in training our Pathology Residents and Clinical Chemistry Fellows. Her main interests include mass spectrometry techniques and endocrinology measurements, and is active in the field through writing papers and speaking at national conferences. Her hobbies outside of UVa involve spending time with her husband and three young children, playing tennis and being active in fitness, where she is an accredited coach through the American Council on Exercise (ACE) and coaches at OrangeTheory Fitness in Charlottesville.



Alejandro Gru, M.D. was promoted to Associate Professor of Pathology and Dermatology. He's been at UVA since 2015, prior to which he was on the faculty at the Ohio State University. He's currently the section and fellowship program director of dermatopathology. He's co-authored more than 120 peer-reviewed publications, and is the lead editor of two textbooks, *Hematopathology of the Skin* and *Pediatric Dermatopathology and Dermatology*. Dr. Gru's main area of expertise is in the field of skin lymphomas, pediatric dermatopathology, and melanocytic tumors. He's on the editorial board of the American Journal of Surgical Pathology, BMC Cancer, Journal of Cutaneous Pathology, and Seminars in Diagnostic Pathology. He's the pathology lead for the international PROCLIPI study and USCLC cancer registry and on the advisory board for the Cutaneous Lymphoma Foundation and part of the board of directors for the United States Cutaneous Lymphoma Consortium.



Patcharin Pramoonjago, Ph.D. was promoted to Associate Professor on the Research Faculty, Research Support track. Pat has achieved excellence in her role of Technical Director of the UVA Biorepository and Tissue Research Facility, which she has made into the premier research core that supports clinical and translational research at our institution. Pat has accomplished this by personally working up the techniques of immunohistochemistry, RNA in situ hybridization, reverse phase protein arrays and circulating tumor cell analysis, in addition to other techniques. The result has been an explosion in the number of service units provided by this core, as well as the number of clinical trials supported by the expanded service volume, as well as the number of scientific publications supported by this core. In almost every category of services this core provides, there has been over a 100% increase from the 1st year she joined the core to the current time. Not only has the service volume grown tremendously, customer satisfaction with the core has also grown under Pat's leadership. She has a career total of 34 peer-reviewed publications.

Faculty: Moving Up cont.



Gay Wehrli, M.D., M.B.A. was promoted to Associate Professor of Pathology. Her main areas of interest are in blood banking and transfusion medicine and in health information technology. She is the Associate Medical Director, Blood Banking and Transfusion Medicine (BBTM) Services and the Program Director, BBTM Fellowship and is the Associate Chief Medical Information Officer (ACMIO) for the UVA Health System. She also earned a MBA and Health Sector Management certificate from the Duke University, Fuqua School of Business and became a Certified Physician Executive. She has published peer-reviewed articles and textbook chapters addressing a breadth of BBTM. Dr. Wehrli has received numerous awards including the first annual Clinical Pathology Teacher of the Year and the AABB (formerly known as the American Association of Blood Banks) Professional Engagement Program's Shining Star Award. Dr. Wehrli is also very active with the American Society for Apheresis (ASFA); she chairs the Attending Physician Subcommittee. Beyond UVA, she is a retired elite level competitive runner, who now enjoys putting miles under her feet without a stopwatch.

Faculty: Moving On



Retiring Faculty

Wendy Golden Ph.D. has retired this year after a long and successful career as an educator and medical laboratorian in the fields of human genetics and cytogenetics.

Dr. Golden received her Bachelor's degree in Biology from Virginia Tech, and her masters and doctorate degrees in Human Genetics from the Medical College of Virginia. She performed a post-doctorate fellowship in Medical Genetics and Cytogenetics at the Children's Hospital of Pittsburgh.

She began her academic career at Case Western Reserve University as an Assistant Professor as well as providing clinical service in the Cytogenetics Laboratory at that institution, eventually becoming Director of the laboratory. In 1989 she was recruited to UVA to join the Dept. of Pediatrics as an Assistant Professor and to direct the Cytogenetics laboratory here. She rose through the academic ranks and became a Professor of Pediatrics and Pathology in 2002, at which time she switched her primary Departmental affiliation to Pathology.

Her research interests mirrored her clinical interests, and she is author or co-author on 50 publications, primarily involving the description of chromosomal abnormalities associated with human disease syndromes, the mapping of human disease genes, and the translation of research laboratory techniques to the diagnosis of genetic diseases. During her tenure at UVA she was responsible for continually improving the diagnostic cytogenetics and genetic analyses provided at our institution, including the adoption of genomic technologies in the latter years of her career. She was active in national organizations concerned with genetic diagnoses, most prominently as a principal organizer of the American Cytogenetics national conference for many years.

From 1999 until this year, Dr. Golden was the Course Director for Medical Genetics in the UVA School of Medicine, responsible for both the content and organization of that course as well as providing the majority of lectures in that subject. She was chiefly responsible for guiding the transition of this course from the traditional didactic-based teaching methods of the traditional curriculum to the modern active learning approaches used in todays "NextGen" medical school curriculum. She has been recognized as an exceptional educator by both medical students and peers, receiving multiple teaching awards including the student-nominated Mulholland Award for Teaching Excellence (3 times), the Basic Science teaching Award (3 times), The Robert Bennett Bean Teaching Award and the Dean's Award for Excellence in Teaching. Not surprisingly, she was elected to the Academy of Distinguished Educators at UVA.

First-Year Trainees

First-Year Residents



Megan Dibbern, M.D. is from Rapid City, South Dakota (despite spending the first nine years of her life in Texas). She attended Cornell College in Mount Vernon, Iowa, where she received a BA in biochemistry/molecular biology and Spanish in 2008. Prior to attending medical school, she worked as a research assistant at the University of Iowa, during which time she met her partner Cong at a social salsa dancing event. She received her MD in 2013 from the University of Iowa Carver College of Medicine, where she also completed a post-sophomore fellowship in pathology. Both she and Cong are thrilled to be living in Charlottesville and to join the UVA Pathology family. Outside of the hospital, they enjoy gardening, trying new foods/restaurants, cooking, hiking, watching hilarious YouTube videos, brainstorming new home improvement projects, and hanging out with their two cats, Pip and Jack-Jack.



Akriti Gupta, M.D. graduated from her medical school (K S Hegde Medical Academy, India) in 2010. She underwent training in pathology in India. She has a special interest in genitourinary pathology. She worked as part of the clinical research team in the Department of Urology at Mt. Sinai Hospital, New York for over a year. She aspires to be an academic pathologist/researcher. Apart from Pathology, she enjoys cooking and trying different cuisines, she loves shopping, travelling, and gardening.



Srishti Gupta, M.B.B.S. is from *dildaar* New Delhi in India. She received her medical degree from Dr. Bhimrao Ambedkar University and subsequently went on to complete her residency in Pathology from Delhi University. After marriage, she moved to San Jose, California where she worked at Stanford as a Research Assistant in Hematopathology. Since moving to Charlottesville, Srishti has found new avenues to continue her love for exploring unique culinary experiences, hiking in nature, and swimming. She has lately taken up Herb gardening (including hydroponics!) and takes pleasure in watching life grow out of the very basic elements of nature. After her residency at UVA, she plans to pursue a fellowship in Hematopathology and Molecular Pathology eventually leading to a career in academic medicine.



Clinton Westover, M.D. received his undergraduate degree from Brigham Young University in 2012. Prior to starting medical school at Eastern Virginia Medical School, he worked as an emergency medical technician, applied behavior analysis therapist, and a veterinary technician. He is happily married with two kids. In his free time he enjoys playing the guitar, reading, home improvement, biking, and weight lifting. He is interested in pursuing a career in private practice as a dermatopathologist.

First-Year Trainees cont.



Lena Young, D.O. is a Colorado native from Denver, Colorado. She attended Colorado State University in Fort Collins, CO earning degrees in Biology, Biomedical Science, and Spanish as a Biology Honors Scholar as part of the University Honors Program. As an undergrad, she worked at the University of Colorado Anschutz Medical campus doing lab research in the immunology of psoriasis and cutaneous inflammation. She stayed on at Colorado State to pursue her Masters of Science in Biomedical Sciences with a focus in Neurobiology, and did research in the immunology of chronic interstitial lung disease and pulmonary fibrosis. She attended medical school at Rocky Vista University College of Osteopathic Medicine in Parker, Colorado where she discovered how much she liked learning about mechanisms of disease and pathology. She was accepted into the post-sophomore pathology fellowship at the University of New Mexico in Albuquerque NM, and really enjoyed her rotations in cytology, hematopathology, and forensic medicine as well as the green chile, hot air balloons, and road cycling. She is interested in neuropathology, anatomic pathology, and enjoys teaching. In her free time, Lena enjoys cycling, hiking, dance, loves dogs and is looking to join a community symphony to play viola again.

First-Year Fellows



Jess Baker, D.O. received his undergraduate degree from Milligan College, his medical degree from Lincoln Memorial University, and completed his residency training at Wake Forest Baptist Medical Center before coming to UVA to complete a hematopathology fellowship. His interests outside of medicine include spending time with his son, playing music, Spanish language and culture, working out, playing and watching basketball, and trying new things.



Margaret Cocks, M.D., Ph.D. was born in Toronto, Canada. She studied the history of medicine at Yale and then earned her Ph.D. in the History and Philosophy of Science from Cambridge University in the UK. She attended the University of Toronto for medical school. She completed AP/CP training at the Johns Hopkins Hospital.



Grant Harrison, M.D. is from Athens, AL. He received his medical degree from the University of Alabama at Birmingham. He completed AP/CP residency at Duke University Hospital, and is happy to join UVA as the new cytopathology fellow. Next year he is moving to Rochester, MN for a surgical pathology fellowship at Mayo Clinic. Outside of pathology, he enjoys spending time with his wife, Whitney, and two children.

First-Year Trainees cont.



Lidong He, Ph.D. received his B.S. degree in chemistry from China Agricultural University, M.S. from University of Utah, and Ph.D. from Florida State University. His research is focused on mass spectrometry applications in clinical diagnosis by analyzing metabolites and protein biomarkers. He is currently a clinical chemistry fellow with special interests in toxicology and clinical informatics. In leisure time, he enjoys playing tennis.



Jonathan Konopinski, M.D. is from Granger, Indiana, approximately 50 paces from Michigan. He graduated with dual degrees in viola performance and cellular & molecular biology from the University of Michigan. He attended medical school at Baylor College of Medicine in Houston, TX, where he met his partner, Mario. Prior to joining the fabulous department of Pathology at the University of Virginia, he completed his residency in anatomic and clinical pathology at George Washington University in Washington, D.C. Jonathan enjoys cooking, baking, classical music, modern art, hiking, CrossFit, and small doses of trashy television.



Christina Pierre, Ph.D. was born and raised in the twin-island republic of Trinidad & Tobago. She completed her B.Sc. at the University of Waterloo in Waterloo, Ontario Canada in Biomedical Sciences (Biochemistry minor) and her Ph.D. in Molecular & Cell Biology at McMaster University in Hamilton, Ontario, Canada. She is currently a clinical chemistry fellow and her academic interests include women's health and test utilization in low-resource settings. In her free time she enjoys going to the beach, cooking, dancing, and hiking.



Elisheva Shanes, M.D. grew up in Charleston, SC and graduated from the Medical University of South Carolina in 2014. She completed her AP/CP residency in Chicago at NorthShore University HealthSystem. She is excited to pursue fellowship training in gynecologic pathology at UVA and to take advantage of all of the academic opportunities here. Her husband, Josh, is a historian and college professor, and together they have a true Brady Bunch (ages 20, 18, 16, 12, 10, and 10!). While she is spending her fellowship year in Charlottesville enjoying the Blue Ridge Mountains, her husband and younger children are back home in Charleston enjoying the salt marshes and swimming pools. In her free time she likes to run, hike, cook, and read (mostly nonfiction and science fiction).

First-Year Trainees cont.



Angela Wu, M.D. was born in Minneapolis, Minnesota. She received her M.D. from the University of Minnesota Medical School in 2013, completed AP/CP pathology residency at the University of Iowa in 2017, and completed a surgical pathology fellowship in 2018. Outside of the hospital, she enjoys crochet, videogames, hiking, and anything to do with animals of any kind. She will complete her neuropathology residency in 2020.

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Entering Grad Students

Benjamin Morris is a second year Ph.D. student in the Mayo Lab. In 2017, Ben graduated from the University of Virginia where he majored in Nanomedicine Engineering (B.S.), Chemistry (B.A.), and minored in Biomedical Engineering. His project focuses on how transcription factors NFKB and MYBL2 contribute to lung adenocarcinoma (LUAD) progression and ultimate metastasis. In his free time, Ben enjoys both playing and watching sports, including basketball, football, soccer, and hockey.



Katherine Moosic is from Hummelstown, Pennsylvania. She graduated from Johns Hopkins University in 2016 with a B.S. in biomedical engineering and a minor in museums and society. During undergrad, she spent her summers as a research intern at the Pennsylvania State University Medical Center rotating through various cancer research labs at the university. These experiences solidified her desire to attend graduate school to study cancer, and she now works in the lab of Dr. Thomas P. Loughran investigating the effects of lipid cytokine signaling on LGL leukemia. Outside of the lab, Katie enjoys playing softball, sketching and painting, adventuring at the various Charlottesville restaurants and hiking trails, or simply curling up with a good book.



Anupam Prakash is a graduate student in Dr. Luckey's Lab in the Department of Pathology. He is working on the cytokine control of RBC alloimmunization. Outside the lab, he enjoys cooking, hiking, watching movies, and online gaming.

Alumni News

Jacob Grange, M.D. is currently working at Vista Pathology in Medford, Oregon.

Michael Hays, M.D. is currently working as Assistant Chief Medical Examiner at the Tidewater Office of the Chief Medical Examiner in Norfolk, VA. He also serves as community faculty for Eastern Virginia Medical School.

Sarah Kelting, M.D. completed a hematopathology fellowship at the University of New Mexico in Albuquerque, NM. She is now a cytopathology fellow at the University of Kansas in Kansas City, KS.

Danielle Kurant, M.D. just finished the MGH Clinical Informatics Fellowship last month, and has now started the Harvard Medical School Molecular Genetic Pathology Fellowship.

Sydney Strickland, Ph.D. is currently an Associate Technical Director at Lab Corp in Burlington, NC. She is training to take over a Technical Director position within the company over a regional core laboratory or a special chemistry reference laboratory.

Anne Stowman, M.D. is currently working at the University of Vermont Medical Center doing academic dermatopathology.

Michael Waisberg, M.D. completed a fellowship in cytopathology at The University of Vermont and accepted a job at Quest Diagnostics in Las Vegas, NV.

Brian Willis, M.D. completed his fellowship in Dermatopathology at Emory University and is now work at Pathology Consultants of Central Virginia in Lynchburg, VA



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 Dr. Henry Frierson and Pathology residents Drs. Ashley Volaric and Sara Zadeh are spearheading pathology clinical outreach and cervical screening campaigns in Guatemala. Also related to cervical cancer, Pathology Clinical Chemistry Fellow Dr. Christina Pierre is preparing a research study on the knowledge, perceptions, and attitudes of women in Trinidad and Tobago (where she was born and raised) towards cervical screening and HPV vaccination. In further international research, Pathology Clinical Chemistry Fellow Dr. Kwabena "Koby" Sarpong is creating a research study on determining the variation of reference intervals among clinical laboratories in his home country of Ghana.

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 selffund this program without institutional support. We could use your help in supporting this fellowhip 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 PA 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 2018.

Honor a faculty Mentor

Thank your favorite faculty mentor by making a gift to the Department of Pathology in his or her 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.

Grants and Contracts

New Grants and Contracts

PI: Thomas Braciale, M.D., Ph.D. National Institute of Allergy and Infectious Diseases Grant

Control of Influenza Infection by Lipid Mediators and Macrophages 01/10/2018-12/31/2022 Total Budget: \$2,747,953

PI: Timothy Bullock, Ph.D.

Recepta Biopharmaceutical In vivo evaluation of the anti-tumor activity of Rb9 01/15/2018-01/15/2019 Total Budget: \$44,736

Award of GAP Funding- Dean's Office

FUS energy regimes for melanoma immunotherapy 01/04/2018-01/03/2019 Total Budget: \$70,000

PI: Dede Haverstick, Ph.D.

Sysmex America, Inc Fully Automated Urine Chemistry Analyzer Design Validation Protocol 10/31/2017-10/30/2020 Total Budget: \$35,313

PI: Hui Li, Ph.D.

St. Baldrick's Foundation Gene Fusion in Rhabdomyosarcoma 07/01/2017-06/30/2018 Total Budget: \$115,000

Ivy BioMed Innovation Research Award

Targeting AVIL in Glioblastoma 02/01/2018-01/31/2019 Total Budget: \$80,000

PI: John Luckey, M.D., Ph.D. National Heart, Lung, and Blood Institute Immunobiology of Transfusion 09/01/2017-06/30/2022 Total Budget: \$1,984,875

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

Bill and Melinda Gates Foundation Enteric Dysfunction Biomarker Development and Coordination II 10/01/2017-09/30/2018 Total Budget: \$262,791

Other Active Grants and Contracts (Federal Funding)

PI: Thomas Braciale, M.D., Ph.D. National Institute of Allergy and Infectious Diseases Grant CTL Response to Influenza Virus

CTL Response to Influenza Virus 09/01/91-11/30/18 (NCE) 2018 Budget: \$226,088 PI: Timothy Bullock, Ph.D. National Cancer Institute Grant Immunotherapeutic Nanoparticle Delivery to

Melanoma with MR-guided FUS 06/01/15-5/31/20 2018 Budget: \$95,000

PI: Robin Felder, Ph.D.

National Heart, Lung and Blood Institute Grant

Molecular Mechanisms in Salt Sensitivity of Blood Pressure 06/01/16-05/31/21 2018 Budget: \$2,132,816

National Heart, Lung and Blood Institute Grant

Renal Dopamine-1 Receptor Defect in Hypertension 01/01/2017-12/31/2022 2018 Budget: \$160,209

PI: Adam Goldfarb, M.D.

National Heart, Lung, and Blood Institute Grant Controlling an Ontogenic Masterswitch to

Maximize Thrombopoiesis 09/10/15-05/31/19 2018 Budget: \$532,884

National Institute of Diabetes & Digestive & Kidney Diseases Grant

Validation of Aconitase-Isocitrate Pathway as a Target for Anemia Treatment 04/01/16-03/31/19 2018 Budget: \$237,000

National Institute of Diabetes & Digestive & Kidney Diseases Grant

Dissection and Manipulation of the Cellular Response to Iron Restriction 02/01/08-12/31/18 (NCE) 2018 Budget: \$130,074

Pl: James Gorham, M.D., Ph.D.

Emory University Contract Adverse Effects of RBC Transfusions: A Unifying Hypothesis 05/04/15-07/31/19 2018 Budget: \$38,561

Bloodworks Northwest Contract

Serious Hazards of Transfusion & Cellular Therapies: Mechanisms & Intervention 07/01/15-04/30/19 2018 Budget: \$37,433

Institute for Transfusion Medicine A Transfusion Safety Officer

01/01/17-12/31/19 2018 Budget: \$125,000

PI: Hui Li, Ph.D. National Cancer Institute Grant CIS-Splicing of Adjacent Genes in Prostate Cancer 09/22/14-08/30/19 2018 Budget: \$327,850

PI: John Luckey, M.D., Ph.D. National Heart, Lung, and Blood Institute Cytokine Control of Red Blood Cell Alloimmunization 12/15/16-11/30/20 2018 Budget: \$519,149

PI: Mani Mahadevan, M.D. National Institute of Arthritis & Musculoskeletal & Skin Disease Grant RNA Toxicity and Muscle Regeneration 02/20/17-12/31/21 2018 Budget: \$396,527

PI: Chris Moskaluk, M.D., Ph.D. National Cancer Institute Grant Biospecimen Procurement & Tissue Microarray Manufacture for the CHTN 04/24/14-03/31/19 2018 Budget: \$471,724

Department of Defense Grant DOD Biospeciman Network- LCBRN 09/20/2010-09/19/2018 (NCE) 2018 Budget: \$169,237

PI: Kenneth Tung, M.D. National Institute of Allergy & Infectious Diseases Grant Zona Pellucida: Immunopathologic Study 09/01/93-10/31/18 2018 Budget: \$88,632

PI: Scott Vande Pol, M.D., Ph.D. National Cancer Institute Grant Papillomavirus E6 Structural Consortium 07/01/15-06/30/20 2018 Budget: \$443,504

Total Annual Federal Funding: \$6,131,688

Other Active Grants and

Contracts (Non-Federal Funding)

Principal Investigators:

Timothy Bullock, Ph.D. Helen Cathro, M.B.,Ch.B. Alejandro Gru, M.D. Hui Li, Ph.D. Dede Haverstick, Ph.D. Anne Mills, M.D. Chris Moskaluk, M.D., Ph.D. Melinda Poulter, Ph.D.

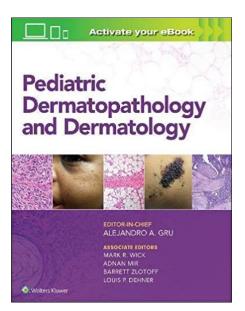
Total Annual Non-Federal Funding: \$516,209

Publications and Awards

Selected Faculty Publications

Books

Alejandro A. Gru's new book was released on November 1. 2018.



Journal Articles

Aguilera N, Gru AA., Reexamining posttransplant lymphoproliferative disorders: Newly recognized and enigmatic types. Semin Diagn Pathol. 2018 Jul;35(4):236-246. doi: 10.1053/j.semdp.2018.02.001. Epub 2018 Mar 3.

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Elagib KE, Lu CH, Mosoyan G, Khalil S, Zasadzińska E, Foltz DR, Balogh P, Gru AA, Fuchs DA, Rimsza LM, Verhoeyen E, Sansó M, Fisher RP, Iancu-Rubin C, **Goldfarb AN**. Neonatal expression of RNA-binding protein IGF2BP3 regulates the human fetal-adult megakaryocyte transition. J Clin Invest. 2017 Jun 1;127(6):2365-2377. doi: 10.1172/ JCI88936. Epub 2017 May 8.

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Robin D. LeGallo, M.D. received the Mulloholland Excellence in Teaching award and the Tobert Bennett Bean Faculty Teaching award.

Robin D. LeGallo, M.D. was also elected as Chair-elect of the Undergraduates Medical Educator Section (UMEDS) Council of The Association of Pathology Chairs.

Hui Li, Ph.D. received the Academy of Distinguished Educators award and the Ivy Foundation Biomedical Innovation Award.

M. Beatriz S. Lopes, M.D., Ph.D. received the Matthew T. Moore Lecture at the American Association of Neuropathologists, 93rd Annual Meeting.

Anne M. Mills. M.D. received the 2017 Beast Clinical Research Abstract award from the International Society of Breast Pathology.

Anne M. Mills, M.D. was also awarded the UVA Cancer Control & Population Health Pilot Project: Targerable Immune Regulatory Molecule Expression in High-Grade Seous Ovarian Cancer in African American Women.

Stacey Mills, M.D. received the USCAP Board's 2018 Distinguished Pathologist Award.

Emily Towery and Brett Kurpiel won CAP Foundation Medical Student Travel Awards for the CAP national meeting.

Gay Wehrli, M.D. received the Professional Engagement Program Shining Star by the AABB.

Joesph Wiencek, Ph.D. received the Young Investigator Award for his work in Mass Spectrometry: Applications to the Clinicl Laboratories.

Joesph Wiencek, Ph.D. received a Commitment to Excellence in Teaching Certificate, University of Virginia School of Medicine.

Joesph Wiencek, Ph.D. was selected for the 2018-2019 Junior Faculty Development Program, University of Virginia School of Medicine.



Dr. Joesph Wiencek receiving his award

National **Presentations**

Bruns DE. Ph.D. How Accurate Do Glucose Meters Need To Be? Biomarkers in Diabetes. IFCC Satellite Meeting, Cape Town, South Africa. October 26, 2017.

Bruns DE, Ph.D. Emerging Biomarkers: Will Any of these Be Used in Patient Care in 2027? Biomarkers in Diabetes. IFCC Satellite Meeting, Cape Town, South Africa. October 27, 2017.

Bruns DE, Ph.D. 25 Years of Laboratory Medicine: What Has Changed, What Is Changing? Keynote Address, 25th International Conference on Laboratory Medicine. Padua, Italy, October 30, 2018.

James Gorham M.D., Ph.D. was the presenting author on an abstract selected for an oral presentation at the AABB Annual meeting in October 2018.

Kenneth S. Tung, M.D. was the Keynote Address for XXV North American Testis Workshop.

Wiencek J. Persistently Increased Alloisoleucine in a Patient without Maple Syrup Urine Disease. MSACL Annual Meeting, Palm Springs CA, January 24 2018.

Wiencek J. Analytical Challenges in the Work up of Primary Aldosteronism. AACC Annual Meeting, Chicago IL, August 1 2018.

Wiencek J. Embracing Pathology's Stepchild: A Practical Guide to Clinical Chemistry Education. AACC Annual Meeting, Chicago IL, August 1 2018.

Wiencek J. Pearls of Laboratory Medicine: Phenylalanine hydroxylase deficiency: Phenylketonuria and Hyperphenylalaninemia. AACC Online webinar.

Final Notes In Memory of



DIETER HANS MAX GRÖSCHEL

May 13, 1931 - March 12, 2018

Dieter Hans Max Gröschel was born in Würzburg, Germany, in 1931. After studies in Würzburg and Erlangen he graduated in Medicine from the University of Cologne in 1957. He did internships at the University of Cologne (1957-58), the U.S. Army Hospital Landstuhl, Germany (1958), and Lutheran Hospital Cologne (1958-59). His postgraduate work was at the University of Cologne in Neurosurgery (1959-60) and in Microbiology and Hygiene (1960-63).

He emigrated to the United States in 1963 and worked at the Wistar Institute in Philadelphia, PA, then joined the faculty of Microbiology of Temple University School of Medicine as assistant and associate professor in 1965. From 1968 to 1971 he served as Director of Microbiology and Infectious Diseases of Springfield Hospital Medical Center in Springfield, MA, with an appointment as clinical associate of the University of Connecticut School of Medicine in Hartford. In 1971 he accepted an appointment as associate professor of pathology at the M.D. Anderson Hospital and Tumor Institute in Houston, TX, with appointments in the UT Medical School and UT Graduate School. He was promoted to professor in 1978. From 1979 to his retirement as professor emeritus in 1996 he worked at the University of Virginia in the Departments of Pathology and Medicine.



SHEILA BURKE COLE

Sheila Burke Cole, 62, of Gordonsville, went to be with her Heavenly Father on Friday, September 28, 2018. She is survived by her devoted husband of 31 years, Roy S. Cole III; her children, Jennifer S. Basile (Ryan), Amanda C. Woods (Ernest), Jessica K. Campos (Rob), and Edward Hudson Cole; many loving grandchildren; two sisters; two brothers; and two very special dogs, Piper and Gabby. Sheila was raised in Charlottesville and attended Lane High School and graduated from Charlottesville High School. She retired from the University of Virginia School of Medicine, Department of Pathology as a dedicated employee after over 35 years of service.

2019 Calendar of Events

April 26, 2019 UVA Department of Pathology 15th Annual Research Day Pinn Hall Conference Center Charlottesville, Virginia

March 16-21, 2019

United States and Canadian Academy of Pathology (USCAP) 108th Annual Meeting Gaylord National Resort & Convention Center National Harbor, Maryland



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