WWW.URMC.ROCHESTER.EDU

PATHWAYS TO EXCELLENCE

URMC DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE

VOLUME 3 I ISSUE 1 I APRIL 2017

BECOMING VISIBLE: PATHOLOGY'S UNIQUE CHALLENGE IN EDUCATION

Medical students from the UR School of Medicine and Dentistry attended a pathology interest group activity on cardiac specimens on March 6.

Today's medical students face a world of possibility when it comes to picking an area of medicine to pursue. Those who choose pathology are consistently in the minority compared to more patient-facing fields like surgery or neurology.

In speaking with residents and faculty in our own department,

> "We need to incorporate pathology into the big picture."
> - Shana Straub, M.D., Chief Pathology Resident

the majority say they chose pathology and lab medicine because of an experience or instructor who opened their eyes to its impact on patient care.

Exposure, however, remains a challenge in the early stages of medical education.

"We need to incorporate pathology into the big picture," said chief resident, Shana Straub. "I think people just don't appreciate the role pathology plays in patient care because we're so behind the scenes. Patients don't know what we do. I didn't know what pathology was until I got to medical school, so I don't blame them for not knowing."

Straub is part of the minority when it comes to students who opt into the lesser known field.

The Association of American Medical Colleges reports that out of the top 44 specialties, 1.3 percent of first-year ACGME residents and fellows specialized in anatomic/clinical pathology in 2015. This is 587 trainees out of over 42,000.

Still, many in the field agree that exposure to pathology in medical school could be much more robust.

Straub was always fascinated by autopsy. It wasn't until she went to a lecture on forensic pathology that she saw the direct link between autopsy and pathology and was instantly hooked. While important, Straub says that the more she learned about being a doctor the less interested she became in the social aspects of medicine. Pathology offered an alternative.

"I was much more interested in the actual disease process and looking at how the disease affects the body from a more academic standpoint."

Looking Inward

Some say the biopsychosocial model of medical education, which is highly regarded for its emphasis on treating patients as a whole, may inadvertently steer students away from fields that explore diseases at the cellular and molecular level.

"That sort of leaves behind the highly microscopic, focused aspect of medicine which is breaking the patient down into different smaller and smaller parts at the biological level and thinking about their tissues and cells," said Andrew Evans, M.D., Ph.D. who is a hematopathologist and director of the hematopathology fellowship at URMC. "That's what we as pathologists do every day…think about their individual units and cells and molecules." *(continued on page 3)*

CHAIR'S COLUMN

Dr. Bruce Smoller

Greetings from a surprisingly warm Rochester! The exciting times continue for the department as we take part in the evolution of a medical center! We are participating in a monthly Laboratory Task Force meeting that includes all of the UR Medicine affiliated hospitals and is designed to develop an enterprise-wide structure for laboratory services. We hope to standardize quality across the enterprise and develop a working relationship that will allow for centralization of services, where appropriate, resulting in efficiencies and uniform patient care across all of the affiliated hospitals. Within the confines of Strong Memorial Hospital, we have recently made several very successful recruitments. Dr. Eve Crane will be joining the hematopathology service via University of Texas, Southwestern and Johns Hopkins University prior to that. She is a highly accomplished researcher and will be joining our faculty in the late spring. Also, Dr. Shobha Parajuli will be joining the team this summer. She is a cytopathologist who also specializes in genitourinary pathology and is coming to us from Duke University. Another very important recruitment is Ms. Kelley Suskie, a new Program Administrator and Vice Chair for Administration. Kelley worked with me during my 9 year tenure at the University of Arkansas and is a nationally renowned Program Administrator, currently serving as the Immediate Past President of the Pathology Department Administrators organization. Her many years of experience overseeing laboratory operations will be a great asset to the department.

On the administrative front, we are sad to say goodbye to Mr. Nathan Loria who has accepted a position as the Program Administrator in our Department of Neurology. We greatly appreciate all that he has done for our department over many years, but certainly wish him all the best in his exciting new position!

Kelley Suskie

Dr. Shobha Parajuli

Dr. Eve Crane

Drs. Richard Burack and Victoria Zhang are adapting to their new Vice Chair roles and are providing incredible insights as we transition into an academic, yet enterprise-based medical department. We are working hard to augment the academic productivity for and with our faculty while building relationships across western New York. All of this is occurring simultaneously with the planning for re-location of many of our laboratories to the Bailey Road site. Construction is set to begin in the spring!

The department is gearing up for its first class of Medical Technology trainees for its newly developed training program. Ms. Vicki Roberts, who has overseen the formation of this program, is now working to attain NAACLS accreditation for the program so that our graduates will be nationally certified. This program is likely to provide a pipeline for future employees within our own laboratories, those in our affiliated hospitals and throughout the region. We are excited about this new program.

All of our residency and fellowship training programs recently received full ACGME accreditation status for the maximum terms. We are working on developing additional programs to complement our current wonderful group of offerings.

ANOTHER SUCCESSFUL USCAP CONFERENCE

We were proud to be well represented at the annual meeting of the United States and Canadian Academy of Pathology (USCAP) held March 4-10 in San Antonio, Texas. A total of 27 collaborators from URMC Pathology produced a total of 33 abstracts presented during poster sessions at the event, which draws distinguished pathologists and researchers from all over the world. The weeklong event also included a cocktail reception for program alumni and friends on March 6 (*pictured at left*).

(Continued from pg.1) Learning pathology means learning how western medicine categorizes diseases. Those diseases range from those that can be seen under the microscope to disorders like Alzheimer's, which leaves detectable plaques in the brain, or lupus, that leaves specific markers in the kidneys and blood vessels as it spreads throughout the body. Pathologists are trained to recognize patterns and disease expressions. As a result, they have many of the answers that oncologists and other M.D.'s struggle to find. Put simply, it's pretty cool to be the person responsible for someone's diagnosis.

"That's what I like about coming to work every day," said Evans. "That's what we sit around and do; come up with answers for patients in the hospital."

A Bit of Everything

There is a pathology interest group at the UR School of Medicine and Dentistry that meets monthly for a lunchtime lecture. Each session, given by a faculty member or resident, often includes a short presentation followed by a tour or hands-on activity.

The group is led by third-year Heather Maioli, who majored in forensic anthropology in college and did a summer internship at the Monroe County Office of the Medical Examiner.

"Pathology really keeps you on your toes because you need to be well read in every area of medicine," she said. "I think that's very unique and appealing. Not having to choose just one thing about medicine that I like was more of a draw than being behind the scenes."

At UR, first-year medical students take histology. This can be difficult and tends to scare some away from pursuing it further. It isn't until second year that the majority of pathology exposure happens, with instructors including Jennifer Findeis-Hosey, M.D. and Mahlon Johnson, M.D., Ph.D.

Curriculum does include pathology electives in both anatomic and clinical pathology, as well as a year-out student fellowship that's typically taken between second and third year. Outside of these structured courses, it can be hard to catch the average medical student's attention as they push through their coursework. Classroom teaching is just the beginning. It's going to take extra effort, Findeis-Hosey says, to create more opportunities for students to get their hands dirty – often literally.

"I'm never concerned about students being interested in pathology if they have the same sort of experience that I had," she said. "That's always what I'm trying to recreate for them." Truly, what other profession allows you to touch gross specimens and hold two hearts in your hands? These experiences could help steer the direction of a student's career, but it begins with getting to students much earlier than residency.

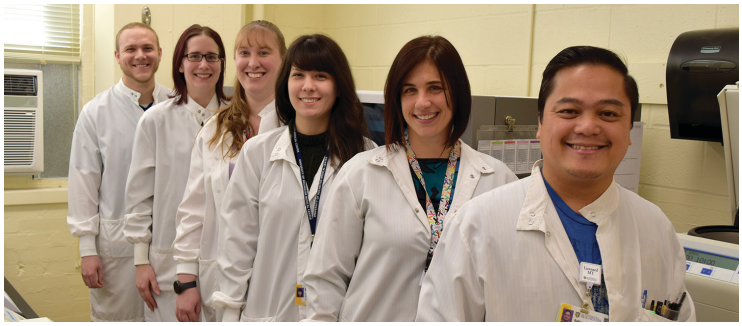
"Very few people say they woke up one day at the age of 5 and said I want to be a pathologist," said Findeis-Hosey. "If you think about how you got hooked into pathology, chances are you could hook somebody else just by recreating that situation for them."

NEW FDA DONOR TESTING LAB HELPS STREAMLINE ORGAN TRANSPLANTS

For people who have opted to become organ donors, the moment when this wish becomes a reality often comes after an unexpected trauma or illness. In those moments, every step must move quickly to make a transplant successful.

The Serology Laboratory at Strong Memorial Hospital performs a wide range of tests. Some of their most specialized testing is performed in conjunction with Finger Lakes Donor Recovery Network (FLDRN) to screen potential organ donors for a variety of infectious diseases, as required by national policy. Until recently, some testing had to be sent 5-6 hours away to an offsite lab in Philadelphia, PA.

This changed in February 2017, when Serology's donor testing lab at Strong expanded their services and began performing Nucleic Acid Testing (NAT) for HIV, Hepatitis B and Hepatitis C. Now, all of the required donor screening tests can be performed under one roof. The testing is performed after a potential donor has been identified, medically evaluated and consent/authorization for donation has been obtained.



The serological donor testing lab team includes from left) Ryan Sorensen, Lauren Brooks, Lindsay Ryan, Nicole Desisto, Alycia Haueise, and Baltazar Yeban Calunod Jr.

For recipients on the waiting list, every minute counts. *(cont. on pg. 4)*

Having access to new testing capabilities helps the coordinators at the FLDRN who work around the clock to coordinate transplants. "It also assists our transplant program by being able to turn these tests around more quickly so the donation process and organ recovery can take place sooner," said Dan Wheeler, supervisor of Serology, Immunology and Molecular Virology at URMC. "The longer the process drags on, the more opportunities there are for complications."

For example, a donor's heart and lungs must be transplanted into a recipient within four hours of the time they are recovered from a donor. A donor's liver must be transplanted within 12 hours and their kidneys must be transplanted within 24 hours. The donor testing lab, led by supervisor Lindsay Ryan, is staffed by five transplant technologists who are on-call 24/7/365 when new cases come in. The sooner the serology results are reported, the sooner the transplant can begin.

Rob Kochik, executive director of the FLDRN says that until now, New York State has never had a laboratory that performs NAT testing on a 24-hour stat basis. He and Marilyn Menegus Ph.D., Associate Director of Microbiology at URMC, have been working collaboratively to establish the lab at Strong.

"This saves us five or six hours of waiting, in particular, when we're trying to move as quickly as possible to coordinate a donation," said Kochik. "Literally, this will help us save more lives. We could not be more excited and appreciative of the hard work that the lab is doing to put this in place."

In addition to partnering with FLDRN, Strong plans to perform testing for other organ procurement organizations in Buffalo and Albany.

ADMINISTRATIVE STRUCTURE REFLECTS CHANGE

Pathology has a decades-long tradition of being divided into anatomic and clinical divisions. That, however, is rapidly changing.

Historically, pathologists just did autopsies and did not operate laboratories. Beginning in the 1950s, pathologists took on all the intraoperative microscopy to guide surgery.

"Prior to that it was done by surgeons," said Richard Burack, M.D., Ph.D."Surgeons recognized that they actually needed people who were trained full time to look at stuff."

Burack was appointed to the newly created position of vice chair for clinical operations at Strong Memorial Hospital in November 2016 when the administrative chair positions for AP and CP were eliminated.

Over the years, training programs have shifted from a focus on morbid pathology to the care of live patients. From there, clinical laboratories that used to be staffed by departments of Medicine morphed into separate divisions: laboratory medicine. These were fused with pathology to produce the departmental model still used in almost all U.S. medical centers.

Today, there is more overlap between AP and CP. This is especially true in fields such as hematopathology and molecular pathology. More esoteric testing like gene sequencing sees more interaction between the two units than ever before.

"We share diagnostic problems, which are patient problems," said Burack. "The divisions are muddier now than ever before and it's a historic construct that they exist separately."

As the field has shifted, the administrative structure of our department has a growing enterprise component that looks beyond SMH to affiliate hospitals and our future site at Bailey Road.

Tamera Paczos, M.D. leads the regional pathology division established in early 2016 to provide "boots on the ground" at affiliate hospitals, giving them administrative support and connecting them to subspecialists. This year, Victoria Zhang, Ph.D. was named vice chair for clinical enterprise strategies to help guide expansion and develop and standardize quality of care across the UR Medicine Laboratory enterprise.

Together, it's a dividing of the chores that will support the many clinical lab operations scheduled to relocate to Bailey Road. Burack says it makes sense that the administrative functions be divided based on what's onsite and what's offsite as we move forward.

"We don't need parallel infrastructures and need to be able to move resources and specimens between the two units," he said. "Patient care is better when the two units are truly one."

ROBERTS WINS BOARD EXCELLENCE AWARD

Vicki Roberts, M.S., MT (ASCP) has received the Individual Administrator Medical Center Board Excellence Award for 2016. She was one of seven individuals and four teams recognized at a special ceremony in January. Vicki took the lead in developing a curriculum for training medical technologists, securing this pipeline for future technologists in the region."Vicki's extensive efforts and dedication provides URMC with an essential pool of certified, highly trained medical technologists for UR Medicine laboratories as well as other affiliate labs in the region," said Dr. Bruce Smoller.

COMMITTEE CUTS WASTE, ESTABLISHES CHECKS AND BALANCES

Since it was implemented in 2011, the Laboratory Diagnostics Committee (LDC) has served as a gatekeeper for send-out tests to efficiently steer patient testing based on medical necessity.

The LDC is now led by Paul Levy, M.D., Medicine Chair, who, along with other high level administrators at Strong Memorial Hospital, assembled a team of experts from across the medical center to develop a process to critically evaluate the diagnostic menu and eventually develop a laboratory test formulary. LDC members now participate in the review process to evaluate every non-routine order that falls within their area of expertise.

Some say the process has not only eliminated unnecessary spending but required physicians to better justify their reasons for ordering complex testing when another alternative may be more clinically appropriate.

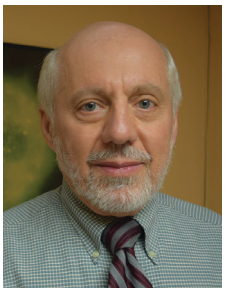
Jim Corsetti, M.D., Ph.D., co-director for Ridgeland Road and Automated Laboratories, joined the LDC when it was first established to serve as a liaison to the Reference Laboratory and recently rejoined the committee. From a lab perspective, he sees the LDC process as a sort of safety net for rogue ordering habits.

"Ultimately we want to do what's best for patient care," said Corsetti. "We want to make sure the tests ordered for patients, especially these more esoteric tests, are clinically indicated and that there is some rationality with regard to the cost associated with these tests."

For this review process, all send-out tests offered in the UR Medicine Labs test menu are grouped into three categories, or tiers. Tier 1 includes the most common routine tests, like Vitamin D (25-Hydroxy). These do not require special expertise to order. Tier 2 and 3 tests require approval from a designated expert. These include costly genetic tests that may lack clear evidence of utility at the time of the request.

Victoria Zhang, Ph.D., LDC member and director of the Clinical Mass Spectrometry and Toxicology Lab, uses the following example to illustrate the value of the LDC: A provider orders a complex test that costs $6,000 without knowing the cost. If the test is run and the procedure isn't covered by insurance, the patient may end up paying full price or the hospital absorbs the cost. More importantly, this test may have limited or unproven clinical utilities and require nuanced interpretation.

By restricting ordering privileges to trained specialists in the LDC, the committee works to make the ordering process more deliberate and effective. Much like Pharmacy uses an advisory board to decide whether a 10-cent pill can achieve the same outcome as a $25 pill, the LDC allows clinical laboratory experts and subspecialty physicians to make clinical decisions that are evidence based.



Jim Corsetti, M.D., Ph.D.

Victoria Zhang, Ph.D.

"The goal is not to limit the access of certain tests to the providers." said Zhang. "The goal is to ensure that medical necessity, test performance and provider interpretations are in alignment. The LDC oversight structure also provides a mechanism that facilitates primary care provider access to expert consultative advice from specialists with a second opinion. Our expert is like a free consultant, and that's an advantage"

Though not the primary motivation, the LDC is estimated to have saved the hospital upwards of $1 million in unnecessary ordering since it began, with $500,000 saved in the first 18 months after implementation.

FOCUS ON FACULTY (CONT.)

"I like everything about GI," he said. "I have ideas for liver, stomach, even doing a project on dysplasia in the anus that I'm working on with our faculty members, residents and fellows."

What inspires him to keep exploring? Most of the easy questions in medicine have already been answered, so, "You have to work with people to get the answers to important questions that are still out there."

In June 2016, Raul published a textbook he co-authored on. He also serves as the co-director of the URMC GI pathology fellowship in addition to teaching residents and graduate students. On top of these duties, he serves as an editorial board member for PathologyOutlines.com.

Raul has garnered a large, niche following on social media where he shares interesting GI cases on Facebook and Twitter. This not only promotes URMC and our department, but pathology as a whole.

"I always say that pathology has a PR problem, but I don't have the answer to solving it," he said. "It's going to take a concerted effort on behalf of everyone in the field."

Outside of work, Raul enjoys going to concerts and exploring new restaurants with his wife Lindsey. They live in Brighton.

Department of Pathology and Laboratory Medicine
University of Rochester Medical Center
601 Elmwood Avenue, Box 626
Rochester, NY 14642

FOCUS ON FACULTY: DR. RAUL GONZALEZ

Dr. Raul Gonzalez is very much a global thinker when it comes to sharing ideas with others in the field. In fact, many of his research collaborations are with colleagues outside of Rochester.

He will be spending the month of May working on several GI projects at Vanderbilt University, where he was previously a pathology fellow and instructor.

Working long distance on these projects is made easier by technology that allows you to email slide images back and forth and discuss your findings online.

"It works," said Raul. "And it's nice to be able to collaborate with people because you get new ideas brought into the mix, and new ways of looking at things."

He joined the University in 2014 as an assistant professor. He completed residency at Emory University, where he also earned his bachelor's degree. His M.D. is from Medical College of Georgia, his home state.

A self-proclaimed "behind the scenes sort of guy" (he was the copy editor for his college newspaper) Raul was first drawn to pathology because of its pace and melding of science and art through diagnostic interpretation of colors, shapes, and patterns. He has a special interest in subtypes of colon cancer and has devoted much of his research to this and small bowel neuroendocrine tumors. Additionally, his current and upcoming work examines mesenteric tumor deposits in small intestinal neuroendocrine tumors.

Raul's motivation to make new breakthroughs has led him to help his peers pursue the same. This year, he sat on the USCAP abstract review committee. His name was on 7 abstracts and he already has a running list of topics for next year. When your subspecialty includes up to 10 different organs in the body, it's hard to keep the list short. *(continued on page 5)*

THANK YOU FOR YOUR SUPPORT!

We have been fortunate to receive philanthropic support from many individuals, allowing us to maintain and accelerate vital clinical, educational, and research initiatives. If you are interested in making a tax-deductible gift today, or as part of your estate plans, please visit www.pathology.rochester.edu and look for the "Make a Gift" button, or contact Jon Sussman, Associate Director of Advancement at 585-276-4976 or jon.sussman@rochester.edu. Thank you!