

PATHWAYS

DEPARTMENT OF PATHOLOGY & LABORATORY MEDICINE

Larner College of Medicine | The University of Vermont Health Network



INSIDE: EXPANDING ADVANCED GENETIC TESTING IN THE GENOMIC MEDICINE LAB

Leadership Changes | 2017 Faculty and Staff Retirees | Publications and Grants | Clinical News

Letter from the Chair

As I write this piece for our third issue of *PATHways*, I am amazed and excited by the passion everyone in our department brings to their work taking care of our patients, teaching the next generations, and developing new understanding of disease processes. This year, we opened our Genomic Medicine Laboratory, recruited five new faculty members and numerous technical staff, continued to integrate our department across the UVM Health Network, transitioned leadership of two vice chair and other director positions, supported the return of our deployed National Guard members to their families through rapid phlebotomy support, participated in the March for Science in Burlington, and many other notable activities. Our researchers continue to have strong extramural funding and remarkable scientific findings, our educators are leading in the transition of our medical education to total active learning and providing education over a broad spectrum from K-12 to Continuing Medical Education, and our clinical teams are providing the highest quality of care in the face of growing volumes. This year, we also mourned the loss of Dr. John Craighead who was chair of our department for 16 years, from 1974 to 1990. His legacy lives on in this strong academic department.

Cover: (L to R) David Seward, M.D., Ph.D.; Ken Hampel, Ph.D., MB (ASCP); Nikoletta Sidiropoulos, M.D.; Patricia Martinez, Debra Leonard, M.D., Ph.D.; Margaret Cameron, MLS (ASCP); Courtney Scott, MLS (ASCP); Jordan Armstrong, MLS (ASCP). Photo by Hing Kur



Debra G.B. Leonard, M.D., Ph.D.
Chair and Professor of Pathology & Laboratory Medicine

I hope you enjoy this 2017 issue of *PATHways*, highlighting the remarkable work of our department!

Debra G.B. Leonard, M.D., Ph.D.
Chair and Professor of Pathology
and Laboratory Medicine

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SUBMISSIONS TO THE NEWSLETTER, AS WELL AS
ADDRESS CORRECTIONS, MAY BE SENT TO
kaela.coble@uvmhealth.org or
The Department of Pathology & Laboratory Medicine
University of Vermont Medical Center
111 Colchester Ave.
Burlington, VT 05401
(802) 847-6959

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University of Vermont
HEALTH NETWORK



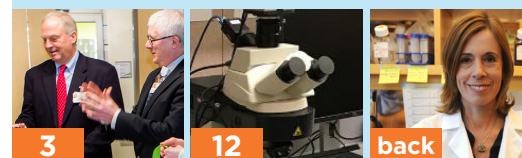
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At-a-glance

PATHOLOGY & LABORATORY MEDICINE

Number of Faculty: **54**

Tenure Pathway: **7**

Clinical Scholar Pathway: **32**

Research Scholar Pathway: **8**

Clinical Practice Physicians: **3**

Faculty Scientist: **1**

Active Professor Emeriti: **3**

Number of Staff across all
Network hospitals: **655**

Number of Residents: **17**

Number of Clinical Fellows: **4**

Number of Student Fellows: **2**

Graduate Students: **8**

Post-doctoral Fellows: **4**

Total Grants Awarded in 2016-2017:
\$7,222,743



The Department of Pathology and Laboratory Medicine 2017 faculty, residents and clinical fellows



Celebrating the new Genomic Medicine Laboratory

The University of Vermont Medical Center opened the Genomic Medicine Laboratory on January 27, 2017, to expand our use of advanced genetic testing to identify disease risks, and guide the diagnosis and treatment for individual patients.

The 5,000-square-foot facility will allow the development of testing for cancers, pharmacogenetics and inherited disorders, with the eventual goal of using every patient's genomic variations for making decisions about their health and health care. Very few academic medical centers in the United States are planning this type of comprehensive Genomic Medicine Program.

Patients at the UVM Medical Center with certain types of cancer currently benefit from this testing. In the coming years, patients with neurological and neuromuscular disorders, cardiovascular disease and other illnesses will benefit from this testing as well.

L to R: Debra Leonard, M.D., Ph.D., John Brumsted, M.D., Claude Deschamps, M.D., and Nikoletta Sidiropoulos, M.D., celebrate the opening of the new Genomic Medicine Laboratory at UVM Medical Center.

In addition to targeting specific diseases, pathologists plan to review an individual patient's genomes (all of their DNA genetic information) to identify variants for more than 1,000 conditions. Being able to see all of an individual's genetic information can uncover whether they already have a genetically-driven disorder, if they are prone to any disorders, and whether they may pass the risk to their children and grandchildren.

This "whole genome" screening provides valuable information to aid in prevention, diagnosis and treatment. In coming years, all patients of the UVM Health Network will have access to this testing.

"What was once thought of as lung cancer is now known to be many types of cancer that react differently to different targeted treatments," said **Debra Leonard, M.D., Ph.D.**, chair of the Department of Pathology and Laboratory Medicine at the UVM Health Network and the Larner College of Medicine. "With the effective use of precision treatments made possible by genome

testing, some of our patients have had their tumors decrease in size."

"Personalized therapy and prevention informed by genomics will become a significant part of medical care in the coming years, and we are determined that our patients will fully benefit from the promise of genomic medicine," said Genomic Medicine Program Medical Director **Nikoletta Sidiropoulos, M.D.**

The UVM Health Network is planning to make genomic medicine a centerpiece for prevention and treatment for our patients. By understanding the concerns, perceptions, and questions patients and providers have about this relatively new area of medicine, the program plans to implement this new testing informed by patient and provider needs. This is a great advance for the UVM Health Network and the patients and families we serve. [PW](#)

New and Notable



2016-17 DEPARTMENT AWARDS

Pamela Gibson, M.D., was awarded the American Medical Women's Association Gender Equity Award for Foundations (the first two years of medical student education).

Mustafa Mohammad, M.D., won the first place abstract award at the American Society of Dermatopathology annual meeting.

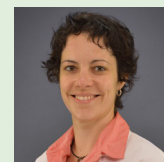
Alexandra Kalof, M.D., and Blood Bank medical technologist **Brenda Simmel** both received

Resident Teaching Awards in recognition of outstanding teaching of our pathology residents.

Alison Krywanczyk, M.D., received the Society of '67 Scholars Travel Award to attend the Association of Pathology Chairs annual meeting in July 2017.

Rebecca Wilcox, M.D., received the Foundations Course Director Award for her leadership of the Nutrition, Metabolism and Gastrointestinal Systems (NMGI) course in Foundations.

NEW FACULTY



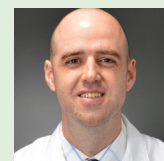
Bronwyn Bryant, M.D.
Surgical Pathology with focus in Gynecologic Pathology



Anne Stowman, M.D.
Dermatopathology



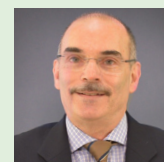
Phuong Vietje, M.D.
Breast Pathology and Community Practice Pathology



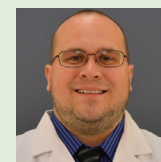
David Seward, M.D., Ph.D.
Genomic Medicine



Kirsten Threlkeld, M.D.
Cytopathology and Autopsy Service



Robert Wildin, M.D.
Genomic Medicine



Clayton Wilburn, M.D.
Director of Clinical Chemistry

New and Notable

LEADERSHIP CHANGES AND PROMOTIONS



Yvonne Janssen-Heininger, Ph.D., Vice Chair for Research

In this role, Dr. Janssen-Heininger will lead our Advancing Knowledge Council and serve as a member of the department's Executive Council. Nationally and internationally recognized as a leading scientist in redox biology related to lung disease, she brings tremendous scientific, teaching, and mentoring experience to this role. *(Learn more about Dr. Janssen-Heininger in our Meet the Researcher-Leader feature on the back cover.)*



Deborah Cook, M.D., Vice Chair for Education

Dr. Cook brings extensive education experience to her new leadership role. She is a member of the Larner College of Medicine Curriculum Committee, director of the Connections medical student course, and dermatopathology fellowship director. She also organizes and speaks at national workshops, and participates in house staff teaching. As vice chair for education, she leads our Pathology Education Council and education efforts, and serves on the department's Executive Council.



Sharon Mount, M.D., Director of the Autopsy Service

Dr. Mount is one of our senior faculty members with years of outstanding contributions in teaching, clinical service, and scholarship. To her new role she brings a passion for increasing our autopsy rate to inform the care we provide for our patients, providing excellent service to the medical team and families of the deceased, and teaching all levels of learners.



Katherine Devitt, M.D., Director of the Flow Cytometry section of the Clinical Laboratories

An attending pathologist in our department since 2014, Dr. Devitt completed her hematopathology fellowship training at the University of Massachusetts Memorial Hospital and has been active in the sign-out of flow cytometry, hematopathology and cytogenetics cases since joining our faculty.



Christina Wojewoda, M.D., Director of Microbiology, promoted to Associate Professor, Clinical Scholar Pathway

Dr. Wojewoda joined our department in 2012, after completing her clinical microbiology fellowship at the Cleveland Clinic in Ohio. She was honored in 2015 with the American Society of Clinical Pathologists' "40 Under 40" award for her outstanding contributions to pathology at an early stage of her career. She is active with the College of American Pathologists, serving on their Continuous Compliance Committee and traveling the world to inspect microbiology laboratories for CAP accreditation.

RETIREMENTS AND FAREWELLS



Greg Sharp, M.D., Ph.D., retired in June of 2017 after 38 years of service to the University of Vermont. Dr. Sharp held the post of director of clinical chemistry for 23 years. He also served as chair

of the department's Credentials Committee, as a member of the Resident Education Committee, and, from 2005 to 2006, as interim director of the Laboratory Medicine division. Dr. Sharp led the clinical laboratory's quality assurance initiatives for many years, serving as chair of our Quality Assurance Committee and as a member of the

Medical Staff Quality Assurance and Improvement Committee. We thank Dr. Sharp for his diligent clinical work, his innovative teaching, his good humor, and his commitment to UVM.



After serving our patients, students and colleagues since 2013, **Suzanne Tucker, M.D.,** has accepted a position at Rady Children's Hospital in San Diego, Calif. She served as director of the Autopsy Service

and as our pediatric pathology expert, as well as a neuropathologist and surgical pathologist. We want to thank Suzanne for her dedication to teaching and mentoring of our residents and medical students, as well as her leadership of our medical student Pathology Interest Group (fondly known as P.I.G.).



Both **Karen Brown, Supervisor, Anatomic Pathology Support,** and **Jude Carpenter, Supervisor, Autopsy and Histology,** retired from their positions in March of 2017.



Together, they have provided 77 years of service to the Medical Center Hospital of Vermont, Fletcher Allen Health Care, and now the University of Vermont Medical Center. They have both made major contributions to the success of

Anatomic Pathology and have mentored countless staff over the years. The new supervisor of anatomic pathology support is Val Cortright, and the new supervisor for autopsy and histology is Michelle Schwartz. [FW](#)

Division Highlights

Veterans Receive Free Hepatitis C Screening

In May of 2017, the Department of Pathology and Laboratory Medicine collaborated with the American Legion to screen nearly 300 area veterans for hepatitis C at a free clinic at Camp Johnson in Colchester. UVM Medical Center donated the laboratory supplies. Employees from the medical center, Champlain Valley

Physicians Hospital in Plattsburgh, N.Y., and the Community Health Improvement and Employee Wellness teams volunteered their time for the project. Veterans who screened positive received confidential counseling and information on next steps for treatment.

New Test for Patients with Cancer

Our department recently began to perform the programmed death ligand 1 (PD-L1) immunohistochemistry (IHC) test for patients with cancer. **Abiy Ambaye, M.D.,** and **Pamela Gibson, M.D.,** interpret the test to predict response to new immune checkpoint inhibitor therapy in lung and other cancers, which has recently been approved by the U.S. Food and Drug Administration. This new testing improves patient care by providing more information to our hematology/oncology colleagues to guide treatment decisions.

Continued on page 6



Continued from page 5

MESA Research to Inform National Precision Medicine Initiative

UVM's Laboratory for Clinical Biochemistry Research (LCBR) serves as a major partner for a study that has been selected as the pilot cohort for a new national research program aimed at honing precision medicine efforts for individuals with heart, lung, blood and sleep disorders. The Multi-Ethnic Study of Atherosclerosis (MESA) focuses on the characteristics of subclinical cardiovascular disease and the risk factors that predict progression to clinically overt cardiovascular disease. Under the direction of **Russell Tracy, Ph.D.**, the LCBR faculty and staff developed and maintained a repository for approximately one million MESA samples, as well as ran a range of lab tests and analyses. Using MESA as the pilot cohort for the National Heart, Lung and Blood Institute's TOPMed (Trans-Omics for Precision Medicine) research program speaks to the outstanding work of our LCBR faculty and staff, and is a major step towards precision medicine for these diseases.

When Every Minute Counts

On February 23, 2017, twelve of our phlebotomists met returning Air National Guard members at the Burlington Air National Guard base to draw their



blood on-site, in an amazing 30 minutes for 240 people. This required disease screening must be complete before guard members are reunited with family. Our phlebotomy team achieved the fastest post-deployment processing the guard members had ever experienced. On February 25 and March 2, three phlebotomists helped process additional groups of guard members. Kudos to our team and their dedication to service! [PW](#)

“
Watching the small
children hold signs up
for their loved ones
and listening to the
yelling and cheering
as the plane touched
ground was an adrenaline
rush and an experience
that I will never forget!
I am honored to be
among such an amazing
and dedicated team.”

AMBER FOOTE
LEAD PHLEBOTOMIST

Department Notes

Remembering John Edward Craighead, M.D.

AUGUST 14, 1930 – JANUARY 10, 2017

A remembrance from Debra Leonard, M.D., Ph.D.

Although I never had the honor of meeting Dr. John “Jack” Craighead, I feel as though I have gotten to know him through the few exchanges I had with him by email and phone, and especially through the remembrances shared with me by his former colleagues and students.

Dr. Craighead had a remarkable career in academic medicine as a pathologist, researcher, teacher and leader. He completed his undergraduate and medical training at the University of Utah and his pathology training at the Peter Bent Brigham Hospital and Harvard Medical School, where he joined the faculty. In 1968, he joined the University of Vermont College of Medicine as an associate professor, was promoted to professor, and soon became chair of the Department of Pathology where he served for 16 years, and built the academic excellence of our department that continues today.

Environmentally caused disease such as mesothelioma was the focus of Dr. Craighead's research, and he trained innumerable graduate students, residents and fellows. Over his career, Dr. Craighead published 169 peer-reviewed research articles, edited four textbooks, wrote 41 book chapters, served on four journal editorial boards, held multiple roles for institutional, state and national organizations and committees, and received numerous honors and awards.

Dr. Craighead retired in 1996 and with his wife, Christina, traveled the world, hiked volcanoes and mountains, explored his passion of botanical gardens, and enjoyed the performing arts. Dr. Craighead died at their Florida home on January 10, 2017, surrounded by his loving family. I was honored to represent the department and the Larner College of Medicine at Dr. Craighead's



From left, John Craighead, M.D., Ted Bovill, M.D., and Russell Tracy, Ph.D., in 2009, when the electron microscopy suite was dedicated to Dr. Craighead.

memorial service in Tyringham, Mass. His ashes were laid to rest in the Union Church Cemetery of the town where Christina grew up and that Dr. Craighead came to love.

Dr. and Mrs. Craighead have provided strong financial support to the department over the years. Most recently, they gave generously to the department's Pathology Student Fellowship endowment fund that provides support for medical students to explore pathology for an additional fellowship year. The Craighead family has requested that memorial gifts be given to this endowment fund in Dr. Craighead's name.

In the words of one of his pathology colleagues: The ‘Smiling Jack’ I knew was tough; he did not tolerate fools, pretenders or sloppy effort. He was an insatiably curious explorer, a fierce defender of quality science. He was totally committed to cultivating the next generation of investigators.” Dr. Craighead leaves behind an amazing legacy of academic excellence in our department that reaches far beyond UVM through all the people he touched during his career. [PW](#)

Memorial gifts in Jack Craighead's name may be made to the University of Vermont Foundation to support the Pathology Student Fellowship Endowment c/o Meredyth Armitage, Sr. Director of Major Gifts, Larner College of Medicine, 89 Beaumont Avenue, Burlington, VT 05405.

Clinical News

No Small Task: Pathology and Laboratory Medicine Becomes First Integrated Network Department

In March of 2016, the Department of Pathology and Laboratory Medicine became the first network-wide department after approval from The University of Vermont Health Network Leadership Council. This new department brings together over 750 members across all network hospitals.

With the formation of this new network-wide department, the High Value Patient Care Council (HVPCC) was restructured to include key physicians and staff from all network hospitals. The council, charged with integrating all clinical operations, is co-chaired by UVM Health Network Director of Operations **Tania Hong**, and Vice Chair for Quality and Clinical Affairs for Pathology and Laboratory Medicine at UVM Health Network **Mark Fung, M.D.** The council includes all laboratory administrative directors and lead pathologists at all of the network hospitals, as well as UVM Health Network Business Director for Pathology and Laboratory Medicine **Michael Towle**.

The objectives of the council include IT integration, defining where tests should be performed in the network, leveraging network purchasing power through standardizing testing instruments, developing common quality measures, standardizing reference laboratory services, and exploring an LLC for reference lab work that would allow

the department to optimize billing structures for different types of clients.

“The lab at Champlain Valley Physicians Hospital (CVPH) has already experienced significant cost reductions through group purchasing and has benefited from shared resources,” says CVPH Laboratory Administrative Director **Ron Brown**.

“I feel that being a part of the High Value Patient Care Council enables me to represent Alice Hyde Medical Center and play an active role as we work together as a team to integrate the laboratories within the health network,” says **Todd Harrington, CT**, laboratory administrative director from Alice Hyde Medical Center in Malone, NY.

“The culture of a network department is really starting to take hold,” says **Tania Hong**. “We rely on each other in decision making about the services we provide and how we operate, keeping in mind that no matter where we are in the network, our services must be of the same high quality.”

“As the network department moves forward, we are beginning to work toward population health in collaboration with other network services,” says **Debra Leonard, M.D., Ph.D.**, chair of the UVM Health Network Department of Pathology and Laboratory Medicine. [PW](#)

New Pathology Grant Awards 2016-2017

TOTAL FY '17 GRANTS = \$7.7 MILLION

PRINCIPAL INVESTIGATOR	PROJECT TITLE	SPONSOR NAME
Iwona Buskiewicz, Ph.D.	Oxidized RNA in SLE	National Institutes of Health
David E. Heppner, Ph.D.	Investigations of Redox-Dependent Processes of the Airway Epithelium	National Heart, Lung, and Blood Institute/ National Institutes of Health/Department of Health and Human Services
Yvonne Janssen-Heininger, Ph.D.	S-Glutathionylation Chemistry in Fibrotic Lung Remodeling	National Heart, Lung, and Blood Institute/ National Institutes of Health/Department of Health and Human Services
Nancy S. Jenny, Ph.D.	Jackson Heart Biorepository	National Heart, Lung, and Blood Institute/ National Institutes of Health/Department of Health and Human Services
Nancy S. Jenny, Ph.D.	Transitions to Family Caregiving and the Impact on Health Indicators	Institute on Aging/National Institute on Aging/National Institutes of Health/ Department of Health and Human Services
Russell P. Tracy, Ph.D.	Immune Function and the Risk of CVD among HIV Infected and Uninfected Veterans	National Institutes of Health/National Heart, Lung, and Blood Institute
Russell P. Tracy, Ph.D.	Comprehensive Evaluation of Aging-Related Clinical Outcomes and Geroproteins (CARGO)	National Institutes on Health/National Institute on Aging
Russell P. Tracy, Ph.D.	Microglial, Inflammatory, and Omics Markers of Cerebral Small Vessel Disease in the CHARGE Consortium	National Institutes of Health/National Institute on Neurological Disorders and Stroke
Russell P. Tracy, Ph.D.	Tissue Sodium, Inflammation, and Blood Pressure in MESA	National Institutes of Health/National Heart, Lung, and Blood Institute
Russell P. Tracy, Ph.D.	Non-Esterified Fatty Acids and Cardiometabolic Disease in Older Adults	Institute on Aging/National Institute on Aging/National Institutes of Health/ Department of Health and Human Services
Adrianus van der Velden, Ph.D.	GSTP-1 Induced S-glutathionylation in Lung Cancer	National Cancer Institute

HIGH VALUE PATIENT CARE COUNCIL

1 Ron Brown

2 Britni Bryant

3 Len Dishman

4 Brian Drinkwater

5 Mark Fung

6 Eric Gorman

7 Maureen Harmon

8 Todd Harrington

9 Tania Hong

10 Lynne Koloski

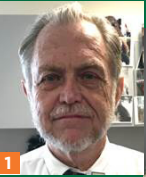
11 Cathy Palmer


12 Jeanne LaPerle


13 Lou Macario


14 Michael Towle

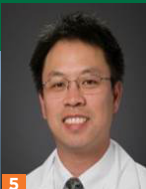
15 Julie Vest









































Education News

Recent Ph.D. Graduates

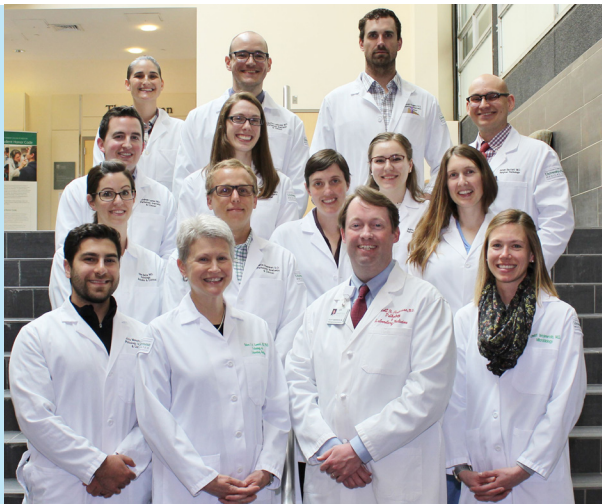
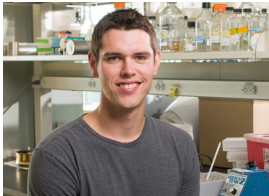


Peter Durda, Ph.D., a graduate student of **Russell Tracy, Ph.D.**, in the UVM Clinical and Translational Science Graduate Program, recently passed his dissertation defense and is now Dr. Peter Durda! Dr. Durda has been a technician in Dr. Tracy's laboratory since 2001, and completed his Ph.D. training while serving as a UVM staff employee.

Andrew Little, Ph.D., defended his thesis and received his Ph.D. in the Cellular, Molecular, and Biomedical Sciences in August of 2017. He completed his dissertation with **Albert van der Vliet, Ph.D.**, and has been performing research in Albert's lab since May 2013.



Joyce Thompson, Ph.D., earned her Ph.D. in May of 2017 from the Cellular, Molecular and Biomedical Sciences Graduate Program. She completed her research in the laboratory of **Arti Shukla, Ph.D.**, investigating the role of the inflammasome in mesothelioma pathogenesis. She is now is a post- doctoral associate at the University of Michigan Cancer Center in Ann Arbor, Mich.



Pathology residents, fellows and student fellows for 2016-17
Bottom row, L to R: Mustafa Mohammad, PGY3; Debra Leonard, Chair; Scott Anderson, Program Director; Christi Wojewoda, Associate Program Director. Second row, L to R: Agnes Balla, PGY3; Justin Rueckert, PGY1; Lauren Pearson, Chief Resident; Adina Bodolan, PGY1; Angela Theiss, PGY1; Third row, L to R: Andrew LaMar, PGY2; Elaine Amoresano, PGY2. Top row, L to R: Christina Litsakos, Student Fellow; Clayton LaValley, PGY1; Thomas Rogers, PGY3; Jamen Bartlett, Surgical Pathology Fellow. Missing: PGY3's Britni Bryant, Alison Krywanczyk. PGY2's Prajesh Adhikari, Ryan Coates

Welcome

to our new residents and fellows

PGY1 RESIDENTS

Ting Chen, M.D., Eastern Virginia Medical School
Jeffrey Covington, M.D., Ph.D., Louisiana State University School of Medicine in New Orleans
Noman Javed, M.D., Saba University School of Medicine
Casey Rankins, D.O., University of New England College of Osteopathic Medicine

CLINICAL FELLOWS

Jamen Bartlett, M.D., Dermatopathology
Sahar Nozad, M.D., Hematopathology
Olga Voronel, M.D., Surgical pathology
Michael Waisberg, M.D., Ph.D., Cytopathology

RESIDENTS
CORNER

Congratulations and Farewell

to our 2017 residency and fellowship graduates!

RESIDENTS

Javier DeLuca-Johnson, M.D., is a staff pathologist and Lieutenant at Naval Medical Center in Portsmouth, Va.
Jill Miller, M.D., is a hematopathology fellow at Oregon Health & Science University in Portland, Ore.
Lauren Pearson, D.O., M.P.H., is co-medical director of the University of Utah Hospital Laboratories and has a faculty appointment in the division of clinical chemistry at ARUP Laboratories in Salt Lake City, Utah.

FELLOWS

Ian Anderson, M.D., completed a cytopathology fellowship (2017) and is currently a general pathologist at St. John Hospital & Medical Center in Detroit, Mich.
Jamen Bartlett, M.D., completed a surgical pathology fellowship (2017) and is currently a dermatopathology fellow at the University of Vermont Medical Center.
Michelle Grant, D.O., completed a hematopathology fellowship (2017) and a transfusion medicine fellowship (2016) and is currently an associate pathologist at Geisinger Health System in Danville, Penn.
Elizabeth Lester, M.D., completed a dermatopathology fellowship (2017) and is currently a clinical dermatologist and dermatopathologist at Advanced Dermatology Center in Rapid City, S.D.

UVM PATHOLOGY STUDENT FELLOWSHIP

The highly successful pathology student fellowship program is entering its 61st year! Recently, three medical students completed the year-long program: **Taylor Goller, M.S.**, **Christina Litsakos, M.S.**, and **Rebekah Wieland, M.S.** We welcome two new student fellows: **Elizabeth Carson** and **Elizabeth Doughty, Ph.D.**

Department Plays Lead Role in UVM Summer Academy

Faculty and residents from the Department of Pathology and Laboratory Medicine were instrumental to the success of the University of Vermont Summer Academy, which brought together 100 high school students interested in exploring healthcare and medicine as fields of study. **Sharon Mount, M.D.**, served as director and organizer of the event, which drew students from Vermont and across the United States. Department faculty, residents, and a student fellow spoke at a variety of panels, delivered keynote talks, and took part in various labs and tours. The four-week program involved two weeks of on-campus classes and two weeks of online learning. With unparalleled faculty support, these students not only earned



Sharon Mount, M.D., leads a session during the UVM Summer Academy.

three college credits, but are more prepared for success in future college-level academics, having experienced flipped classrooms, team-based learning, and online learning.

Research News



Grant Funds New Whole Slide Imager

Thanks to a shared instrumentation grant from the Larner College of Medicine, and matching funds from the Department of Pathology and Laboratory Medicine and the UVM Cancer Center, the Microscopy Imaging Center acquired in December of 2016 a Leica/Aperio versa 8 whole slide imager. This highly versatile instrument is an automated scanning microscope and image generation scanning system. Currently, the scanner is used for research applications; however, several projects are planned to investigate diagnostic applications.

Publication Highlights

Do chromosome changes in blood cells implicate formaldehyde as a leukemogen? **Albertini RJ** Kaden DA *Crit Rev Toxicol* 2017 Feb;47(2):145-184; PMID:27685449

Effect of a chemical chaperone, tauroursodeoxycholic acid, on HDM-induced allergic airway disease. Siddesha JM Nakada EM Mihavics BR Hoffman SM Rattu GK Chamberlain N Cahoon JM Lahue KG Daphtary N Aliyeva M Chapman DG Desai DH Poynter ME **Anathy V** *Am J Physiol Lung Cell Mol Physiol* 2016 01 Jun;310(11):L1243-59; PMID:27154200

Myeloid neoplasms with t(5;12) and ETV6-ACSL6 gene fusion, potential mimickers of myeloid neoplasm with PDGFRB rearrangement: case report with imatinib therapy and review of the literature. De Luca-Johnson J Ninfea JI Pearson L Conant J **Bryant R** Zakai NA **Tang ME** *Case Rep Med* 2016;2016:8324791; PMID:27746819

Reactive oxygen species induce virus-independent MAVS oligomerization in systemic lupus erythematosus. **Buskiewicz IA** Montgomery T Yasewicz EC Huber SA

Murphy MP Hartley RC Kelly R Crow MK Perl A Budd RC **Koenig A** *Sci Signal* 2016 29 Nov;9(456):ra115; PMID:27899525

AMPK activity regulates trafficking of mitochondria to the leading edge during cell migration and matrix invasion. **Cunniff B** McKenzie AJ **Heintz NH** Howe AK *Mol Biol Cell* 2016 01 Sep;27(17):2662-74; PMID:27385336

Endothelial progenitor cells in chronic obstructive pulmonary disease and emphysema. **Doyle MF Tracy RP** Parikh MA Hoffman EA Shimbo D Austin JH Smith BM Hueper K Vogel-Claussen J Lima J Gomes A Watson K Kawut S Barr RG *PLoS One* 2017;12(3):e0173446; PMID:28291826

Viral myocarditis and dilated cardiomyopathy: etiology and pathogenesis. **Huber SA** *Curr Pharm Des* 2016;22(4):408-26; PMID:26696257

DUOX1 mediates persistent epithelial EGFR activation, mucous cell metaplasia, and airway remodeling during allergic asthma. Habibovic A Hristova M Heppner DE Danyal K Ather JL **Janssen-Heininger YM** Irvin CG Poynter ME Lundblad LK Dixon AE Geiszt M **van der Vliet A** *JCI Insight* 2016 03 Nov;1(18):e88811; PMID:27812543

Biomarkers of key biological pathways in CVD. **Jenny NS** Olson NC Allison MA Rifkin DE Daniels LB de Boer IH Wassel CL **Tracy RP** *Glob Heart* 2016 Sep;11(3):327-336.e3; PMID:27741979

Fetal tissue procurement for karyotype analysis: clinician or pathologist—which is better? Conant **JL Tang ME Waters BL** *J Assoc Genet Technol* 2016;42(1):15-8; PMID:27183009

Attenuation of lung fibrosis in mice with a clinically relevant inhibitor of glutathione-S-transferase @. McMillan DH **van der Velden JL** Lahue KG Qian X Schneider RW Iberg MS Nolin JD Abdalla S Casey DT Tew KD Townsend DM Henderson CJ Wolf CR **Butnor KJ Taatjes DJ** Budd RC Irvin CG **van der Vliet A** Flemer S **Anathy V Janssen-Heininger YM** *JCI Insight* 2016 02 Jun;1(8); PMID:27358914

DUOX1 silencing in lung cancer promotes EMT, cancer stem cell characteristics and invasive properties. Little AC Sham D Hristova M Danyal K Heppner DE Bauer RA Sipsey LM Habibovic A **van der Vliet A** *Oncogenesis* 2016 03 Oct;5(10):e261; PMID:27694834

A randomized study comparing digital imaging to traditional glass slide microscopy for breast biopsy and cancer diagnosis. Elmore JG Longton GM Pepe MS Carney PA Nelson HD Allison KH Geller BM Onega T Tosteson AN Mercan E Shapiro LG Brunyé TT Morgan TR **Weaver DL** *J Pathol Inform* 2017;8:12; PMID:28382226

Natural history of patients presenting with autoimmune hepatitis and coincident nonalcoholic fatty liver disease. **De Luca-Johnson J** Wangenstein KJ Hanson J Krawitt E **Wilcox R** *Dig Dis Sci* 2016 Sep;61(9):2710-20; PMID:27262844

Significance of positive and inhibitory regulators in the TGF- β signaling pathway in colorectal cancers. Coates RF Gardiner JA Gao Y Cortright VM Mitchell JM Ashikaga T Skelly J **Yang M** *Hum Pathol* 2017 07 Jun; PMID:28601657

Who Knew?

Heather Pariseau (pictured below), customer service representative and a senior nursing student at Norwich University, traveled to the Barangay of Kawit, Cebu, Philippines for her second health mission trip. Heather was the community health leader and advisor, where she and several other Norwich students taught Filipinos about maternal and fetal medicine. Norwich University built a birthing center for this rural community that has limited access to healthcare. In 2018, Heather will volunteer in an HIV/AIDS clinic in Tanzania. Says Heather: “Over the past two years, I’ve not only developed a loving bond with the Barangay of Kawit, but have established a sacred ground that I can call ‘home.’ These past two missions were much more than an experience. They were a spiritual pathway into discovering my life purpose.”

“THESE PAST TWO MISSIONS WERE MUCH MORE
THAN AN EXPERIENCE.” - HEATHER PARISEAU



Meet the Researcher-Leader

YVONNE JANSSEN-HEININGER, PH.D.



In her research, Professor of Pathology and Laboratory Medicine and Vice Chair for Research **Yvonne Janssen-Heininger, Ph.D.**, focuses on chronic lung diseases, in particular the role that oxidants play in the progression of lung disease, with a goal to develop targeted redox-based therapeutics. This year, the National Heart Lung and Blood Institute honored her contributions to science by naming her an inaugural recipient of the Outstanding Investigator R35 Award. Her work, which includes over 120 published papers, has led to a patent to develop inhaled glutaredoxin as a treatment for pulmonary fibrosis, which she is continuing to explore through an SBIR grant with Celdara Medical. She has also served as a standing member on multiple NIH study sections, and has trained over 20 Ph.D. students and post-doctoral fellows. “We truly have a great team of investigators, fellows and students,” says Janssen-Heininger. “Because of our close-knit interdisciplinary group, we are able to translate findings quickly to the bedside. It is a humbling experience to try to understand and change the course of human disease. It is what drives me. I am honored to be able to do what I do, every day.”

