As the Department of Medicine grows in size and stature, we continue to take on new opportunities in patient care as well as evolve our research and education enterprises to make the best use of our talents and resources. I am proud to say that this challenge - to stay ahead of the curve while always keeping the tenets of our mission at front of mind - is one that our faculty embraces.

Our resident education program recently went through a major restructuring thanks to the leadership of Dr. Mark Pasanen, our residency program director, and the efforts of our three chief residents, who not only created the program from scratch but continue to play an important role in supporting faculty. This new system, which allows for half a day per week of uninterrupted time for education, gives us the space to pursue problem-based learning and a longitudinal curriculum with residents in new and exciting ways. Read a story about the Academic Half Day in this issue of The Chart.

We’ve also recently changed how we deliver oncology care to our inpatient population to better meet the needs of this diverse subset of patients. The new medical oncology service - staffed by three hospitalists with a special interest in oncology - will provide care for patients with cancer who also need treatment for co-occurring or chronic conditions, in close collaboration with our outstanding oncology team.

We continue to be proud of the work of the three research centers led by Department of Medicine faculty: The Vermont Lung Center, the Vermont Center for Immunobiology and Infectious Disease, and the UVM Vaccine Testing Center. Each has its own storied history of important discoveries that rely on collaboration across disciplines. The continued funding success of these centers speaks highly of the ability of their leaders to remain constant to their vision, yet flexible enough to adapt to the ever-changing research landscape. I hope you enjoy this newest issue of The Chart!

**New and Notable**

**Medical Oncology Service Launched**

A new inpatient medical oncology service taps into the expertise of a team of specialists uniquely poised to address complex medical issues while collaborating with oncologists for cancer care. The service includes three hospitalists with an interest in oncology, including Maria Burnett, M.D., Naomi Hodde, M.D., and David Rand, D.O., as well as a first-year and second- or third-year resident. Mark Pasanen, M.D., chief of the Division of Hospital Medicine, says the new service is in response to the increasing number of “complex medical patients” whose cancer is just part of their clinical presentation. These patients may also be suffering from chronic conditions like diabetes, or bring with them challenging social situations that require services beyond their cancer treatment. The collaboration between the Division of Hematology/Oncology and the Division of Hospital Medicine provides these patients the “best of both worlds,” as the divisions will work closely together to provide holistic care in a family-centered framework.

**New Faculty**

Hibba Rehman, M.D., a third-year hematology/oncology fellow at UVM Medical Center, has accepted a faculty position in the Division of Hematology/Oncology and will start in the summer of 2017. She will focus her research and clinical practice in sarcoma and gynecological and breast cancers and will offer clinical trials to her patient population.

Two new faculty will be joining the Division of Infectious Disease in July of 2017. They will be primarily at the main campus, but will also support CVPH Medical Center, the UVM Health Network hospital in Plattsburgh, NY. Jean Dejace, M.D., joins the division from Maine Medical Center. He is looking forward to making Vermont his home and enjoying all it has to offer. Andrew Hale, M.D., comes from Beth Israel Deaconess Medical Center where he completed his residency and fellowship. He has family in Vermont and received his undergraduate degree from Middlebury College.
Holmes Appointed Interim Chief of Hematology/Oncology

Chris Holmes M.D., Ph.D., associate professor in the Division of Hematology/Oncology, has been appointed the interim chief of the Division of Hematology/Oncology effective February 27, 2017. Currently the director of the Vermont Regional Hemophilia Treatment Center and the associate director of Clinical and Translational Research at the UVM Cancer Center, she is a highly regarded teacher and clinician with a research program focused on platelet function and the prevention of venous thrombosis in patients with cancer that has been continuously funded since 2004. To date she has published 37 peer-reviewed articles/chapters and has been invited to present her work at multiple national meetings. The Department of Medicine will be launching a national search for a chief of Hematology/Oncology in the near future.

Budd Serves as Editor for Rheumatology Textbook

Ralph Budd, M.D., professor in the Division of Immunobiology, is one of five internationally-known editors for the tenth edition of Kelley & Firestein's Textbook of Rheumatology, published in August of 2016. Considered the “definitive resource in rheumatology for an in-depth understanding of scientific advances as they apply to clinical practice,” the textbook provides a “global, authoritative perspective on the manifestations, diagnosis and treatment of rheumatic diseases.” The book is published by Elsevier.

New Award to Support Early Career Investigators

Larner College of Medicine alum Martin Bloomfield, M.D., ’60 has provided two grants to the Cardiovascular Research Institute of Vermont. A $1 million bequest will create an endowment to support early career researchers as they work to build a research program. The Bloomfield CVRI Early Career Award in Cardiovascular Research goes to a researcher at the assistant professor level and within the first five years of faculty appointment. Bloomfield has generously decided to provide the current funding of his future bequest, thus allowing the CVRI to bestow this $45,000 award on a junior investigator in 2017. A $250,000 gift supports two existing visiting professorships, the Sabel Visiting Professorship and the Alpert Visiting Professorship.

King to Lead Federation of State Medical Boards

Patricia King, M.D., Ph.D., associate professor in the Division of General Internal Medicine/Genetics, has been elected chair-elect of the Federation of State Medical Boards (FSMB). A national non-profit, FSMB serves as the voice for state medical boards, supporting them through education, assessment, research and advocacy.

Active Learning a New Focus for Resident Education

In January of 2017, the Department of Medicine marked a major shift in the delivery of resident education. Based in part on feedback from residents themselves, department leaders have carved dedicated time for education out of the residents’ weekly schedule, and encouraged faculty to embrace active learning techniques and a longitudinal curriculum. Residents often found it difficult to wrap up their clinical responsibilities in time to attend, and were sometimes faced with the possibility of being called away. Protected time for academic sessions means fewer distractions and competing demands to manage.

In making the change, the department was in part responding to specific feedback from residents reported through the annual Accreditation Council for Graduate Medical Education survey. Results of the 2016 survey showed some improvements could be made in terms of the balance between education and service. With the department meeting or exceeding the national average for several other education-related categories, Pasanen says when he saw similar results for these particular questions for several years running, he knew it was time to make a change.

The department’s three chief residents - Jackie O’Toole, D.O., Tara Scribner-Metcalf, M.D., and Samuel Stoyak, M.D. - embraced the challenge of creating an Academic Half Day program.

Residents gather for a session that includes small group discussion as part of the Academic Half Day.

The Academic Half Day shifts from a noon-time lecture, resident talk or journal club to a weekly, three-hour session devoted specifically to education. The department’s more than 50 residents are split into two groups to allow uninterrupted clinical coverage throughout the week, with first-year residents attending on Wednesdays and second- and third-year residents attending on Thursdays.

The previous structure made it difficult to go into the lectures or discussions “with a nice, clear head ready to focus on education,” says Mark Pasanen, M.D., residency program director and chief of the Division of Hospital Medicine.
"Dr. Pasanen gave us great freedom in developing it and for that reason it’s been an opportunity for each of us to use our strengths and explore our interests," says Scribner-Metcalf.

Five-week blocks allow for a monthly immersion in a particular subspecialty. Because residents reliably attend every week, there are opportunities for a longitudinal curriculum building on sessions over time. And the three-hour time frame creates space for case-based and problem-based learning, small group discussion, flipped classroom exercises and other active learning techniques. Residents regularly visit the UVM Clinical Simulation Lab for sessions with Standardized Patients and task trainers. The Academic Half Day also allows for a more comprehensive focus on topics like quality improvement and wellness.

Many faculty have been excited about the new system from the beginning, says Pasanen, and the chief residents have been a key resource for them as they develop creative, interactive sessions. The substantial philanthropy to the College of Medicine from the late Robert Larner, M.D.’42, which focuses on medical education, and the College’s commitment to transform its curriculum to one based on active learning, has generated momentum for the department’s efforts, says Pasanen. Leadership has also consistently sent the message that creating this dedicated time for resident education is key to fulfilling their mission to provide the most comprehensive training possible.

The department continues to evaluate the program as it moves forward, says Scribner-Metcalf, but early feedback seems promising. She’s continually looking for ways to help faculty engage her peers in learning.

“We now play competitive Jeopardy for review sessions and have incorporated wellness activities,” she says. “It’s an invigorating challenge to include these activities in a way that works for the diverse group.”

Three Department of Medicine faculty lead important multidisciplinary centers at the University of Vermont that are internationally known for their work in research, education, and patient care. Many more department faculty lend their expertise as members of these centers, helping to create new knowledge and train the next generation of physicians and scientists.

### Vaccine Testing Center

**Director:** Beth Kirkpatrick, M.D., Professor in the Division of Infectious Disease

The UVM Vaccine Testing Center is dedicated to the development of new vaccines and to improving our understanding of how humans respond immunologically to infections and vaccines. The VTC team performs phase I and II vaccine trials in the U.S. and internationally, focusing on the development of vaccines of importance to global health. Our human immunology laboratories examine immune correlates of protection and the mechanisms underpinning vaccine underperformance in the developing world. Vaccines of interest include rotavirus, cholera, dengue, Zika, and polio.

**Recent Highlights**

- The VTC has been instrumental in developing the NIH’s live attenuated tetravalent dengue vaccine, which we are now testing in Bangladesh.

A new study examining an improved Adenovirus vaccine starts in the spring, led by Caroline Lyon, M.D., M.P.H.

- The VTC continues to work with the NIH and Johns Hopkins toward the development of a Zika vaccine, led Kristen Pierce, M.D.

- Sean Diehl, Ph.D., has received grant funding from the CDC to understand human immune responses to Zika virus.
Vermont Center for Immunobiology and Infectious Disease
Director: Ralph Budd, M.D., Professor in the Division of Immunobiology

As a multidisciplinary group of scientists and clinicians, the Vermont Center for Immunobiology and Infectious Disease focuses on collaborative research in microbial pathogenesis and the immune response to infections. The center was created in 2006 with a five-year $11.4 million Phase I Center for Biological Research Excellence (COBRE) grant from the National Institutes of Health and National Institute of General Medical Sciences. In 2011, the center entered a second five-year Phase II period.

Recent Highlights
- New research from Nicholas Farina, Ph.D., has identified a previously unknown mechanism involved in the immune response that could provide an alternative therapy target for lupus. Her team’s results were recently published in the journal Science Signaling.
- Dimitry Krementsov, Ph.D., was recently awarded a $339,883 grant from National Institute of Neurological Disorders and Stroke/NIH/DHHS for “Interactions Between Host Genetics and the Gut Microbiome in CNS Autoimmunity.”

Vermont Lung Center
Director: Charles Irvin, Ph.D., Professor in the Division of Pulmonary Disease and Critical Care Medicine

Founded in 1972, the Vermont Lung Center focuses on clinical care, research and education related to lung health and disease. The center’s high-profile, world-class research program spans multiple departments at UVM. It has been the recipient of a National Institutes of Health-funded Centers of Biomedical Research Excellence (COBRE) grant since 2000. The center’s interdisciplinary training program is supported by a National Heart, Lung, and Blood Institute T32 Grant.

Recent Highlights
- Anne Dixon, M.D., and colleagues have been awarded two ROI grants for $6.2 million dollars from the NIH to study the pathophysiology and molecular mechanisms that underlie the disease of the obese asthmatic patient. Highly interdisciplinary, the studies involve Department of Medicine colleagues Jason Bates, Ph.D., Matthew Poynter, Ph.D., and David Kaminsky, M.D., as well as colleagues in radiology and surgery.
- Yvonne Jansen-Heininger, Ph.D., a VLC member and professor in the Department of Pathology and Laboratory Medicine, was recently named the inaugural recipient of the highly prestigious Outstanding Investigator Award (OIA) from the National Heart, Lung and Blood Institute (NHLBI).

Faculty Honored at Invention 2 Venture Conference
Two Department of Medicine faculty members were recognized for patents they received in the past year at the 12th annual Invention 2 Venture Conference. Peter Spector, M.D., professor in the Division of Cardiovascular Medicine, garnered a patent plaque for “Methods and systems for optimizing lesion placement to minimize and treat cardiac fibrillation.” Markus Meyer, M.D., associate professor in the Division of Cardiovascular Medicine, was recognized for two patents: “Cardiac pacemaker and uses thereof,” and “Non-invasive methods for determining cardiac output.” The conference, hosted by UVM Office of Technology Commercialization, honors patent awardees from across the university. Experts, academic researchers, entrepreneurs and business leaders from across Vermont and New England facilitate roundtable discussions on how to develop, finance and protect ideas.

Faculty Featured at UVM Cancer Center Mini-Research Symposium
Several Department of Medicine faculty members hosted presentations on their research during the UVM Cancer Center Mini-Symposium: Interactive Cancer Research Showcase on April 7. The event, sponsored by the Lake Champlain Cancer Research Organization, drew researchers from across the university for a half day of talks and a poster session. Michael Toth, Ph.D., associate professor in the Division of Cardiovascular Medicine, was recognized for patents he has received in the past year. His research focuses on the effects of cancer and its treatment on cardiovascular health. Through his work, he has developed two patents: “Cardiac pacemaker and uses thereof,” and “Non-invasive methods for determining cardiac output.” The conference, hosted by UVM Office of Technology Commercialization, honors patent awardees from across the university. Experts, academic researchers, entrepreneurs and business leaders from across Vermont and New England facilitate roundtable discussions on how to develop, finance and protect ideas.
Grant Highlights

Steven Lidorfsky, M.D., Ph.D., professor in the Division of Gastroenterology, received a pilot project award from the Lake Champlain Cancer Research Organization/UVM Cancer Center for a research proposal, titled “Magnetic resonance-based determination of hepatic steatosis for optimization of outcomes following surgical resection of liver metastases,” along with co-investigators Steven Ades, M.D., assistant professor in the Division of Hematology/Oncology, David Keating, M.D., Carlos Marroquin, M.D., and Rebecca Wilcox, M.D.

Publications


Meet the New Chief Residents for 2017-2018

Internal Medicine Chief Residents

Lee-Anna Burgess, M.D. Lee-Anna grew up in Vancouver, British Columbia, and attended the University of British Columbia for her undergraduate studies. She studied medicine at the University of Queensland in Australia. Lee-Anna intends to pursue a career in academic hospitalist medicine. Work-related interests include medical student education and quality improvement.

Brendan Everett, M.D. After growing up in Paramus, New Jersey, Brendan completed his undergraduate education at the University of New Hampshire, and medical school at Rutgers Robert Wood Johnson. As a chief, Brendan looks forward to helping residents cultivate their research interests as he prepares to pursue a fellowship position in gastroenterology.

Dermatology Chief Residents

Emily Farrell, M.D. While at the University of Buffalo Medical School, Emily decided to pursue a dermatology residency. “It involves everything I enjoy about medicine,” she says, “including patient care, complicated medical problems, oncology, and procedures.”

Alyssa Fischer, M.D. Alyssa attended medical school at Albert Einstein Yeshiva University, where during her third-year rotations she “quickly realized that the patients who interested me the most were the ones with a dermatologic condition or a dermatologic manifestation of their systemic illness. This was further confirmed with a year-long research fellowship studying dermatological toxicities of anti-cancer treatments.” She is planning a career in general dermatology.

Ivy Norris, M.D. A Kentucky native, Ivy received her medical degree from the University of Louisville. “I am looking forward to the opportunity to focus my expertise in cutaneous oncology and dermatologic surgery, which allows application of artistic skill, dexterous finesse and medical problem-solving in a unique and highly dynamic sphere of medical/surgical dermatologic treatment and patient care.”
Larner College of Medicine Class of 2017 “Matches to the Future”

The Larner College of Medicine Class of 2017 celebrated Match Day on March 17, 2017, with a celebration in the Hoehl Gallery that featured the theme of “Match to the Future.” Laurie LeClair, M.D., professor in the Division of Pulmonary Disease and Critical Care Medicine and director of the Cardiovascular, Renal and Respiratory Systems course, was chosen by students to deliver special remarks at the beginning of the ceremony. This July, when the Department of Medicine welcomes its new class of residents, it will include Jameson Loyal from the Larner College of Medicine Class of 2017. He completes his preliminary medicine year here before heading to SUNY Health Science Center-Brooklyn for a residency in dermatology.

Lee-Anna Burgess, M.D., had her abstract accepted to the Society of Hospital Medicine annual meeting in May of 2017. Her abstract is titled “The Impact of a Graduate Medical Education (ACGME).” It also encompasses the general competencies established by the Accreditation Council for Graduate Medical Education for the Internal Medicine residency and all subspecialty fellowships from the Accreditation Council on Graduate Medical Education.

In January of 2017, the Department of Medicine received full accreditation for the Internal Medicine residency.

The Department of Medicine is pleased to report a 100 percent pass rate on the American Board of Internal Medicine certification exam by 2016 residency graduates. ABIM Board Certification demonstrates that physicians “have met rigorous standards through intensive study, self-assessment and evaluation.” Certification also encompasses the general competencies established by the Accreditation Council for Graduate Medical Education (ACGME).

**Program Notes**

Hilbba Tul Rehman, M.D., a fellow in the Division of Hematology/Oncology, has received a grant from the Fibrolamellar Foundation and is working with a team to study the fusion protein causing this rare type of liver cancer and determine potential targeted therapies. She is mentored by Allen Repp, M.D., associate professor in the Division of Hospital Medicine.

Third-year resident Sara Roberts, M.D., had her abstract accepted to the Society of General Internal Medicine annual meeting in April of 2017. Her abstract is titled “The Impact of a Face-to-Face Internal Medicine Educational Curriculum on EMR-Based Patient Portal Usage.” She is mentored by Halle Sobel, M.D., associate professor in the Division of General Internal Medicine/Geriatrics.

**House Staff News**

Third-year resident Lee-Anna Burgess, M.D., had her abstract accepted to the Society of Hospital Medicine annual meeting in May of 2017. Her abstract is titled “Resident Perspectives on Laboratory Over-Utilization: Differences Between Residency Program Sites.” She is mentored by Allen Repp, M.D., associate professor in the Division of Hospital Medicine.

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**Menon chosen for National Research Competition**

Prema Menon, M.D., Ph.D., assistant professor in the Division of Pulmonary Disease and Critical Care Medicine, was one of three early career investigators from across the country selected to present her tool for communication in the ICU at the Building Education to Advance Research (BEAR) Cage Competition during the American Thoracic Society International Conference. On May 21, 2017, she will present “Communicating with Mechanically Ventilated Patients” to a panel including members of industry and academia, with a goal to help speed development of innovative translational research ideas.

**Carney to Present at International Medical Educators Meeting**

Jan Carney, M.D., M.P.H., professor in the Division of Pulmonary Disease and Critical Care Medicine and associate dean for public health, will be presenting a session on the Public Health Projects course she directs during the International Association of Medical Science Educators annual meeting, to be held at the University of Vermont in June of 2017. The session, titled “Building and Sustaining Community-Academic Partnerships: Teaching Students and Improving Health,” discusses how the community/academic partnership model employed by the course has generated positive change for the populations served as well as sustained community engagement between the College and a large network of non-profit agencies.

**Recognition and Awards**

Gihan Allen, M.D., professor in the Division of Dermatology and Critical Care Medicine, recently received the UVM Medical Center Vision Award. This quarterly award “recognizes employees and physicians who have significantly contributed to attainment of our goals through their actions, attitude and results.” He received this award for his outstanding leadership in critical care for the medical center and our region.

Todd Holmes, M.D., associate professor in the Division of Dermatology, recently accepted the position of chair of the International Dermatologic Surgery Fellowship Recognition Work Group.

Chad Mitchell, M.D., assistant professor in the Division of Hospital Medicine, attained Board Certification from the American Board of Obesity Medicine.
**In the Media**

**Philip Ades, M.D.**

professor in the Division of Cardiovascular Medicine, provided his cardiac rehab expertise for a recent Consumer Reports Health article titled, “What’s Missing from Your Heart Attack Recovery Plan.” Part of the problem, as Ades explains, is the lack of geographically available options. “There are too few in many big cities, and in rural areas you could be a three-hour drive from the nearest cardiac rehabilitation center,” he says. “Physical activity improves fitness, and if fitness is improved it’s easier to do daily activities.”

On March 9, 2017, Kim Dittus, M.D., Ph.D., assistant professor in the Division of Hematology/Oncology, was featured in a story on WCAX-TV regarding a new study regarding the benefits of soy for breast cancer patients.

A commentary on the benefits of global health electives for medical students, coauthored by UVM/Western Connecticut Health Network Global Health Program Director Majid Sadigh, M.D., clinical associate professor of medicine, and Mitra Sadigh, was featured as a “Viewpoint” in the Association of American Medical College’s AAMC News on March 7, 2017.

**Who Knew?**

The UVM Medical Center Arctic Suns were among the top 20 fundraising teams this year for the Penguin Plunge for Special Olympics. The event, which features a chilly dive into Lake Champlain at the Burlington Waterfront, this year drew a record-breaking 1,269 plungers on 108 teams, raising $538,487 to support Special Olympics Vermont. This is the ninth year the Arctic Suns have plunged for the cause. The team included department faculty members Gilman Allen, M.D., Sean Diehl, Ph.D., and Daniel Weiss, M.D., Ph.D.

Cardiovascular disease is not “one size fits all.” That’s one of the messages Neil Zakai, M.D., M.Sc., imparted in an interview with *Thrombosis and Haemostasis* about his recent study titled “D-dimer and the Risk of Stroke and Coronary Heart Disease: The Reasons for Geographic and Racial Differences in Stroke (REGARDS).” The associate professor in the Division of Hematology/Oncology found that although D-dimer was a biomarker for coronary heart disease and stroke across more than 30,000 study participants, the association was stronger for coronary heart disease as compared to stroke, especially in African-Americans. “These data suggest that the causes of cardiovascular disease may differ by disease type and by race,” said Zakai in the interview. “In the future, we need to develop ways to tailor our approach to vascular disease prevention.”