

ART + SCIENCE

Medical Student Education Report 2017



ROBERT LARNER, M.D. COLLEGE OF MEDICINE AT THE UNIVERSITY OF VERMONT

On September 23, 2016, we embarked on a new era of medical education here at the University of Vermont when we named our medical school in honor of Dr. Robert Larner, a member of our Class of 1942. Dr. Larner's lifetime of philanthropic support is helping us to transition the Vermont Integrated Curriculum to 100 percent active learning by 2019. With this effort, the Larner College of Medicine is assuming a leadership role in transitioning medical education, spurred on by research into the science of learning. The evidence is conclusive: When students engage with each other and their teachers through structured activities, knowledge, skill and retention improves. Students also understand what they're learning more deeply, and in ways that are more meaningful to their medical practice. When I see an active learning session in full swing led by one of our capable faculty members, the energy, enthusiasm, and learning taking place in the room assures me that we are doing what's right for students, and ultimately for the patients they will serve.



Although we mourned Dr. Larner's death in April, his legacy as a fierce champion of our efforts lives on. He always challenged the Larner College of Medicine to provide a medical education "second to none," and his words continue to drive us forward. In August of 2017, we cut the ribbon to celebrate the opening of the Larner Learning Commons, a new home for our Teaching Academy and information technology team. This \$2.1 million enhancement brings our curriculum experts, faculty development team and educational technologists into direct and daily contact with Dana Medical Library staff, who are engaged as partners in active learning. We are fortunate to have so many creative and innovative professionals here at the College ready to take on the challenge of transforming our curriculum – and now we have the space for them to put their ideas into action.

Planning for these important changes to our curriculum hasn't happened in a vacuum: We have involved faculty, staff, and students every step of the way. Over 75 stakeholders (faculty, staff and students) participated in a strategic planning process that resulted in a roadmap to our educational transformation. I appreciate the diversity of perspectives that this group brought to the table, and I'm confident our plan is the stronger for it.

This year has also brought exciting developments in clinical education. We celebrated the approval, by the Connecticut Office of Higher Education, of a new clinical campus at Western Connecticut Health Network, one of our long-standing partners and a leader in global health education. We also instituted a Longitudinal Integrated Clerkship, which embedded five students in primary care practices at new campuses in Glens Falls, NY and Waterville, Maine. This clerkship experience provides a patient-centered curriculum that allows students to develop longer term relationships with patients and preceptors. These opportunities are especially suited for students interested in rural health or primary care. UVM's leadership in active learning across the curriculum has led to recognition from peer schools, in the form of consulting requests and speaking engagements, as well as national press in the *Boston Globe*, *Washington Post*, National Public Radio's *All Things Considered*, and *Inside Higher Ed*. More than 600 educators from 23 countries had the chance to learn about our efforts first-hand when we hosted the International Association of Medical Science Educators annual meeting in June of 2017.

As we begin another academic year, it's with great pride that we welcome the Class of 2021, which I believe is the most diverse group of medical students in our history. This increasing diversity will continue to enrich our learning environment and educational outcomes. With our educational transformation now underway, and new curricular innovations in place, the upcoming year promises to continue our mission to educate all of our learners in the best possible way.

William B. Jeffries, Ph.D.

Senior Associate Dean for Medical Education

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Highlights



Transformational Giving: \$100 Million for Medical Education

On September 23, 2016, the University of Vermont celebrated the announcement of an estate commitment with an estimated current market value of \$66 million from UVM dual-degree alum and Vermont native Robert Larner '39, M.D.'42, and his wife, Helen. The commitment to donate — the largest gift ever to a public university in New England — capped decades of philanthropic support from the Larners, whose lifetime giving has reached \$100 million.

To recognize and express gratitude for their extraordinary commitment to medical education at UVM, the University of Vermont Board of Trustees voted to name the College of Medicine in honor of Dr. Larner. Now known as The Robert Larner, M.D. College of Medicine at The

University of Vermont, the College has been moving ahead in the months since the announcement with plans to reach the institutional goal inspired by Dr. Larner — to be recognized as second to none for medical education worldwide.

“Thank you, Dr. Larner, for providing countless opportunities for us to be the best physicians we can be, at the University that we love, and will always remember,” said **Soraiya Thura '18** to the crowd of faculty, staff, medical students, and community members gathered for the naming event.

The Larners' gift marks an important moment in the history of U.S. medical schools: the first occasion in the nation for which a medical school is named to honor an alumnus physician and donor. ■

“THE GIFT ANNOUNCED TODAY WILL UNLEASH THE CREATIVITY AND FIRE IN THE BELLY OF OUR FACULTY TO PROVIDE OUR STUDENTS WITH A MEDICAL EDUCATION WHICH IS UNQUESTIONABLY SECOND TO NONE.”

– DEAN RICK MORIN



Celebrating Dr. Larner's Life

On April 28, 2017, the College hosted a Dedication Ceremony in recognition of Dr. Larner's extraordinary life in medicine and unparalleled spirit of dedication to the institution. Faculty, staff, students, and members of the Larner family witnessed the unveiling of an oil painting of Dr. Larner and his wife, Helen, to be displayed at the College that bears his name.

Highlights

A Year for Building

The Larner College of Medicine continues to renovate physical space to accommodate active learning and improve facilities for students. This includes:

- Construction of the **\$2.1 million Larner Learning Commons**, which includes production studio space, IT support, and Teaching Academy offices.
- Expansion of the **Reardon Classroom** into an active learning space to accommodate 120 students.
- The **Rowell Brickyard** has been transformed into quiet study space for up to 48 students.
- Renovation of the **Sullivan Classroom** to expand capacity and improve the configuration for active learning.

Revolutionizing Medical Education

The data are clear that engaging students in active learning is superior to providing passive lectures for teaching science, especially so for women and underrepresented minorities.



Thus, the College has been moving away from lecture-based courses and toward team-based learning, simulation, flipped classrooms, and other active learning modalities, with a commitment to eliminate all live lectures by 2019. Some of the initiatives made possible through Dr. Larner's giving:

- Technology for learning, including simulators for point of care ultrasound, heart sounds, and advanced cardiac life support
- Construction of two technology-rich, team-based active learning classrooms
- Creation of the Larner Learning Commons, which provides space and resources for the Teaching Academy to provide technology support for active learning and student independent learning space
- Recruitment of an endowed Professor of Medical Education to lead the Teaching Academy (**Kathryn Huggett, Ph.D.**)

Robert Larner, M.D.'42 | January 27, 1918 – April 20, 2017

On April 20, 2017, the College of Medicine community mourned the death of Robert Larner, M.D.'42, at the age of 99. Born January 27, 1918 in Burlington, Vt., as the seventh child of a Russian immigrant and his wife, he attended the public schools of Burlington, and became a state champion debater in high school. Scholarship money he won through debating allowed him to become the first member of his family to attend college. He entered the University of Vermont in 1936, and received his B.S. degree in 1939, and his M.D. from the UVM College of Medicine in 1942.

After a brief internship at Maine Medical Center in Portland, Dr. Larner joined the U.S. Army Medical Corps and served during World War II in the Pacific Theater, treating wound-



Robert Larner, M.D.'42

ed soldiers at Guadalcanal and Okinawa. After the war, Dr. Larner served a residency in Baltimore, Md. He then settled in Los Angeles in the late 1940s, where he built a thriving internal medicine practice that spanned 40 years. From very early on, he began making investments in California real estate, building close relationships with hundreds of small business tenants. By the 1980s, Dr. Larner focused on ways he could give back to the place where his career began, and help foster the next generation of physicians. In addition to his long-standing philanthropic support of innovative medical education, the Larner Loan Fund he created has helped nearly 1,300 UVM medical students afford their education through low-interest loans and scholarships.

"I give to the University of Vermont College of Medicine because the education I received here made everything great that followed in my life possible. I'm humbled that the University of Vermont has decided to name the medical college in my honor, but I'm equally grateful for the opportunity to impact the future of medical education and to inspire others to contribute to this exceptional institution which is truly second to none."



“THERE’S A FOCUS TO CHANGE THE WAY IN WHICH MEDICAL STUDENTS ARE EDUCATED. THIS PROGRAM WILL HELP THEM BECOME MORE UNDERSTANDING OF ALL THE ASSOCIATED ISSUES IN PATIENT CARE. THEY’LL BE ABLE TO WALK INTO THEIR FIRST JOB AND ALREADY KNOW HOW TO INTERACT WITH OTHER HEALTH CARE PROFESSIONALS, AS WELL AS THEIR PATIENTS.”



**– COLLEEN QUINN, M.D.,
HUDSON HEADWATERS
SITE DIRECTOR**

Medicine from the Patient’s Point of View: College Launches Longitudinal Integrated Clerkship

A new pilot program for the clerkship year offers students the opportunity to follow a panel of patients over time, deepening their understanding of patient advocacy, community health promotion, and care coordination across different health systems. In March of 2017, three students from the Class of 2019 began their Longitudinal Integrated Clerkship (LIC) at Hudson Headwaters Health Network, a not-for-profit system of community health centers in upstate New York, and two joined the LIC at Eastern Maine Health System. Through the LIC, students develop meaningful, long-term relationships with patients and their preceptors, and begin

their careers with the skills and expertise they need to deliver outstanding care in a rural setting.

With primary care physicians as preceptors, and a primary care health center as a home base, each student becomes a key member of an interdisciplinary team providing comprehensive care to patients. Students progressively develop a panel of patients to satisfy all required clinical encounters for the clerkship level. They see these patients regularly over the course of an entire year, accompanying them through all of their different experiences in the health care system. At Hudson

Headwaters, one student is based out of each of the following centers: Queensbury Family Health, Warrensburg Health Center, and West Mountain Health Services. In collaboration with physicians at Glens Falls Hospital, scheduled “Burst Weeks” give students the necessary inpatient experience. Site Director **Colleen Quinn, M.D.**, a family physician with Hudson Headwaters, says students also work with preceptors from six different specialties, allowing students to gain additional experiences to round out their patient encounters.

“It’s a really nice way of learning medicine,” says Quinn. “You get to see how teams work in the real world.”

Regular meetings with a Hudson Headwaters physician give students important opportunities to check in on their personal development and well-being, an aspect of the program

Highlights



developed to mirror the Professionalism, Communication and Reflection course.

The LIC is a valuable experience for any medical student, but is particularly appealing for those who are planning careers in rural medicine. Hudson Headwaters is a federally qualified health center and the sole medical provider for much of the surrounding rural and medically underserved region. The network provides care to nearly 90,000 patients in 17 different health centers, and at Glens Falls Hospital and Moses Ludington Hospital. For students like **Khaled Al Tawil '19**, the opportunity to work in this setting is invaluable as he prepares for his future practice.

"It's a personalized program that allows students to experience providing care to rural populations in our nation," he says, "and serving these populations is the goal of my career in medicine." ■



CLASS OF 2020 SNAPSHOT

Applicants 5,975	10 median Physical Sciences MCAT
Interviews 619	34 In-state students
Enrolled 117	83 Out-of-state students
3.73 median GPA	35% ALANA (African Americans, Latino/a, Asian Americans, Native Americans)
3.67 median BCPM	100% Medically-related experience
509 median new MCAT	
10 median Verbal MCAT	
10 median Biological Sciences MCAT	

ABOVE THE NATIONAL AVERAGE

In the 2016 Graduate Questionnaire from the Association of American Medical Colleges, Larner College of Medicine students reported a breadth of experience that prepared them well for residency training and fulfilling careers.

100%

of Larner College of Medicine students in the Class of 2016 completed a community-based research project, compared to 31% of medical students nationally.

99%

of Larner College of Medicine students in the Class of 2016 reported they agree or strongly agree that they feel confident they have "acquired the clinical skills necessary to begin a residency program," compared to 90% of medical students nationally.

86%

of Larner College of Medicine students in the Class of 2016 reported that they gained experience related to cultural awareness and cultural competence, compared to 72% of medical students nationally.

RECENT GRADS THRIVE AS RESIDENTS

Selected results from the Accreditation Council for Graduate Medical Education (ACGME) survey for the Class of 2016 and their residency directors:

Medical Knowledge: **100%** of Class of 2016 respondents said they felt as prepared or more prepared than their peers.

Sensitivity and Responsiveness to Diversity: Just over **98%** of residency program directors said Larner College of Medicine grads are as prepared or more prepared than their peers.

Professionalism: **100%** of Class of 2016 respondents said they felt as prepared or more prepared than their peers.

Highlights



Right: John Szarek, Ph.D., professor at Geisinger Commonwealth School of Medicine, hosts a clinical simulation seminar in the Larner Classroom.

Above: Cate Nicholas, Ed.D., leads a tour of the UVM Clinical Simulation Laboratory.



Medical Educators from Around the World Experience Active Learning

The innovative learning spaces at the Larner College of Medicine and the medical educators who are transforming the curriculum into one based on active learning helped to drive the discussion at the 21st Annual International Association of Medical Science Educators (IAMSE) Meeting hosted by the College in June of 2017. Attended by a record 600+ health science educators from around the world, Teaching Academy Director and Larner Professor of Medical Education **Kathryn Huggett, Ph.D.**, served as program chair for the meeting.

The meeting opened with a flag ceremony and awards presentation on June 10. Larner College of Medicine Senior Associate Dean for Medical Education **William Jeffries, Ph.D.**, was honored with the Master Scholar award in recognition of his distinguished record of educational scholarship.

Focus session topics — many of which took place in two of the College's



new active learning spaces, the Larner and Reardon Classrooms — included how

to involve real patients in case- and team-based learning to increase learner engagement and developing self-directed learning strategies for the classroom and beyond. In addition to breakout sessions, some attendees took time for medical student-led lunchtime tours of the Larner College of Medicine campus.

High-profile plenary speakers included Eric Mazur, Ph.D., professor of physics and dean of applied physics at Harvard University; Jimmie Leppink, Ph.D., of Maastricht University's School of Health Professions Education; Jeffrey Karpicke, Ph.D., Bradley associate professor of psychological sciences at Purdue University; and Pat Croskerry, Ph.D., professor in emergency medicine and in the Division of Medical Education at Dalhousie University, Halifax, Nova Scotia, Canada. ■



College Faculty Featured at IAMSE Meeting

A number of Larner College of Medicine faculty and staff delivered presentations at the meeting, including:

Judith Lewis, M.D., Nathalie Feldman, M.D., Charmaine Patel, M.D., David Adams, M.D., David Harari, M.D., and Katherine Evans, M.D., presented "The Use of Film and Inter-professional Dialogue to Address Learner Mistreatment"

Laurie Leclair, M.D., gave a curriculum presentation on "Coping with a code: Providing an academic framework to help third-year medical students prepare for the practical and emotional reactions to attempted resuscitation"

Anne Dougherty, M.D., presented a curriculum session on "Pre-Departure Training for Global Health Electives in U.S. Medical Schools"

Elise Everett, M.D., delivered an instructional methods talk on "Using interview simulation to improve medical student performance in residency interviews"

Jan Carney, M.D., M.P.H., led a focus session on "Building and Sustaining Community-Academic Partnerships: Teaching Students and Improving Health"

Molly Rideout, M.D., delivered a focus session on "Crossing Boundaries: Flipping the Classroom in the Clerkship Year"

Jill Jemison participated in a panel discussion on "Easy and Effective E-Learning on a Budget"

Highlights

A Leader in LGBTQ Health Education

From robust community outreach, to cutting edge research, to expertise recognized by national media, the Larner College of Medicine continues to be a leader in LGBTQ health education.



Nicholas Bonenfant, M.D. '17

IN THE MEDIA

“From the experiences I’ve seen, some pediatricians don’t have the patient population or the knowledge based in transgender health to provide the most comprehensive care,” said **Nicholas Bonenfant, M.D. '17** in an interview with NBC Out on April 6. Bonenfant developed an educational series for medical students on topics related to LGBTQ health that he presented at a national conference.



Michael Upton, M.D.

“Being able to speak to an experienced ‘out’ faculty member about choosing a career path or how to manage homophobia with patients or in the work environment is an invaluable asset to LGBT-identified students,” said **Michael Upton, M.D.**, clinical assistant professor of psychiatry, in an article for *AAMC News* titled “Creating a Welcoming Environment for LGBTQ+ Students.” A 2016 Frymoyer Scholar, Upton developed a curriculum to create cultural competence in providing care for LGBTQ patients.

NATIONAL RESEARCH

Alison Alpert, M.D. '14, and **Eileen CichoskiKelly, Ph.D.**, professor of family medicine, are co-authors on a study published in the *Journal of Homosexuality* that explores the experiences of lesbian, gay, bisexual, transgender, queer, and intersex people in health care and their recommendations for physicians. Five themes emerged from the six focus groups they conducted in four cities: be comfortable with LGBTQI patients; share medical decision-making; avoid assumptions; apply LGBTQI-related knowledge; and address the social context of health disparities. ■



Alison Alpert, M.D. '14 and Eileen CichoskiKelly, Ph.D.

IN THE COMMUNITY



“IT WAS PARTICULARLY MEANINGFUL THAT I WORE A WHITE COAT FOR THE FIRST TIME IN THE PRIDE PARADE. WHEN I PUT IT ON, MY QUEERNESS DID NOT DISAPPEAR. INSTEAD,



I DISCOVERED THAT MY PERSONAL AND PROFESSIONAL IDENTITIES COMPLEMENT EACH OTHER BEAUTIFULLY. IT WAS A DELIGHT TO TAKE MY PLACE IN MY COMMUNITY AS A TRANS FUTURE DOCTOR.”

– ELI GOLDBERG '20, FROM THE LARNER COLLEGE OF MEDICINE BLOG

Evidence-Based Medical Education

At the Larner College of Medicine, we're leveraging the science of learning to redesign medical student education.

Mounting evidence suggests that active learning methods, those that feature collaboration, simulation, small-group sessions and “flipped classrooms,” actually produce better results for students, both in terms of test scores and information retention.

Motivated by these data, the Larner College of Medicine has a goal to replace traditional lectures with active learning by 2019. According to the Association of American Medical Colleges, it's the most aggressive push of any medical school toward that format.

“We know that these efforts improve outcomes,” says **William Jeffries, Ph.D.**, senior associate dean for medical education at the college, “and that's what we're really focusing on.”

A 2014 study in the *Proceedings of the National Academy of Sciences* determined that active learning reduced course failure rates by about one-third.

Faculty are learning this new way

of teaching thanks in large part to the College's Teaching Academy, a faculty development initiative that emphasizes a scholarly approach to medical education. Led by Larner Endowed Professor of Medical Education and Assistant Dean for Medical Education **Kathryn Huggett, Ph.D.**, the Teaching Academy recently moved into the new Larner Learning Commons, a space that creates a seamless connection between the Dana Medical Library, Teaching Academy personnel including data experts, and IT professionals ready to help record lectures, organize other preparatory materials, and develop ideal application exercises.

It's all in service of training doctors who are ready to tackle the challenges of practicing medicine in the 21st century, Huggett says, as collaboration with peers mirrors the experience students will have in practice. “Especially when active learning requires team work, it more closely represents a real work experience.”

Learning Commons

The \$2.1 million Larner Learning Commons, completed in the spring of 2017, is a laboratory for teaching designed to support leading edge medical education.

Features include:

- Production studios and learning laboratories to create interactive modules, screencasts, and other digital material
- Access to data specialists offering expertise in survey administration and outcomes measurement
- Walk-in access to IT specialists trained in educational technology
- Co-located with the Dana Medical Library for seamless connection with library staff and resources
- Steps away from the Larner Classroom, one of two state-of-the-art active learning classrooms. ■

Team-based learning: How it works

→ BEFORE CLASS:

Prep work

- Complete an online module, video, or other digital learning

→ IN CLASS:

1. Readiness Assurance Test

- Take the test as an individual to assess comprehension
- Take the test as a team, allowing the group to work through differences and come to consensus

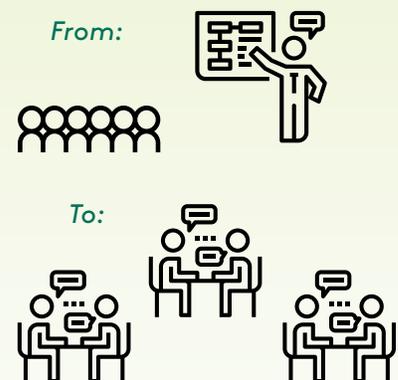
2. Applied Learning

- Each team works together on the same in-class simulation or exercise, such as a clinical case where they are asked to diagnose the condition.
- Teams are given specific choices, and are asked to report their answer to the larger group.

→ AFTER CLASS:

Formative Assessment

- Review, reflection and practice questions reinforce learning and promote retention.





"WHEN STUDENTS WORK THROUGH A CLINICAL PROBLEM AND EXPERIENCE IT AS A PROCESS, IT STICKS. THIS IS GREAT FOR RETENTION BUT IT ALSO HELPS YOU GROW AS A TEAM PLAYER AND AS A COMMUNICATOR — ALL ESSENTIAL SKILLS TO PRACTICING MEDICINE."
— REBECCA WILCOX, M.D., ASSOCIATE PROFESSOR OF PATHOLOGY AND LABORATORY MEDICINE





Sadigh Named Inaugural Trefz Family Global Health Endowed Chair

L to R: Fred Mandell, M.D., Stephen Winter, M.D., Majid Sadigh, M.D., John Murphy, M.D., Mr. and Mrs. Trefz, and Mr. Richard Jabara

Experience with human suffering as a child in war-torn Iran instilled a passion for caring for people in **Majid Sadigh, M.D.**, who knew at a very young age he wanted to become a physician. In the 32 years since he came to the U.S. as a refugee, the associate professor of medicine at the Larner College of Medicine and UVM/Western Connecticut Health Network (WCHN) Global Health Program director has become an internationally recognized global health expert and humanitarian, impacting countless lives in resource-poor countries across the globe.

On November 16, 2016, Sadigh was inducted as the inaugural Christian J. Trefz Family Endowed Chair in Global Health, giving the burgeoning global health program he founded in 2012 additional resources to foster innovation, scholarship

and research. The endowed chair also leaves a legacy for the future, ensuring that the UVM/WCHN Global Health Program continues to grow and evolve. In addition to his leadership in global health education, Sadigh, an infectious disease specialist, has dedicated much of his career to fighting HIV worldwide.

Established with a generous gift from Christian J. and Eva W. Trefz of Westport, Conn., the Trefz Endowed Chair in Global Health is the first-of-its-kind in the state of Connecticut and one of only a few hospital-based endowed global health chairs in the nation. ■

“IN WORKING WITH THOSE DEDICATED TO GLOBAL HEALTH, PEOPLE LIKE DR. SADIGH, I HAVE NOT ONLY FOUND MY PEOPLE, BUT FOUND MENTORS WHO WILL HELP ME RETAIN

MY PRINCIPLES WHILE CHALLENGING ME TO FURTHER DEVELOP THEM AS I PROGRESS THROUGH MY CAREER.”

– STEFAN WHEAT '18 AT THE TREFZ CHAIR INAUGURATION



BY THE NUMBERS

13

Number of international colleagues from Russia, Uganda, Vietnam, Cuba and Dominican Republic who visited the U.S. to train at UVM/WCHN in 2016

49

Number of faculty, residents and medical students from WCHN and UVM who participated in global health rotations in 2016

17

Number of first- and fourth-year Larner College of Medicine students who completed global health rotations in 2016



When I feel inertial pull toward complacency, I remember the question I asked my patients most often during my work in Uganda: Olumwa?

This translates from Lungandan into "Where does it hurt?"
 – Janel Martir, M.D.'17, from the *Global Health Diaries* blog

Consortium of Universities for Global Health

Several students and global health leaders presented at the 8th Annual Consortium of Universities for Global Health Conference April 7-9, 2017:

Janel Martir, M.D.'17, received an honorable mention for her essay.

Mitra Sadigh presented "Creating a Bidirectional Culture of Safety in Global Health Electives Via Comprehensive Safety Protocols."

Majid Sadigh, M.D., was a speaker on the panel "Building Ethical and Effective Partnerships Between Institutions in Low- and Middle- Income Countries (LICs) and High-Income Countries (HMICs)."



ABOUT THE GLOBAL HEALTH PROGRAM

The goal of the international partnerships formed through the UVM/WCHN Global Health Program is to improve patient care and medical education through cooperation and the exchange of ideas. Global health electives allow medical students, residents, fellows, and faculty from WCHN and UVM to travel to established sites in **Uganda, Zimbabwe, Dominican Republic, Vietnam, and Russia**. The medical professionals from these international sites also visit the United States for training and education that they can bring back to their home institutions and use to improve patient care.

International Partnerships, Education Mark Global Health Celebration

Physicians and educators from the Dominican Republic and Kazan, Russia, along with faculty and staff from the Global Health Program based at Western Connecticut Health Network (WCHN), visited the Larner College of Medicine campus April 24-25, 2017 to participate in a Celebration of Global Health.

Distinguished international guests included **Julio Amado Castaños Guzman, M.D.**, president of Universidad Iberoamericana (UNIBE) and chairman of the board of Hospital General de la Plaza de la Salud in Dominican Republic, and **Dilyara Nurkhametova, M.D.**, internal medicine specialist and coordinator of the Kazan State Medical University Global Health Program in Russia.

Visitors and members of the College community attended a Dean's Distinguished Lecture in Global Health on "Global Health in the Dominican Republic" by Dr. Guzman, followed by an awards ceremony and reception featuring an exhibit of posters, photographs and reflections submitted by Global Health Program participants.



Global Health in Photos

This year's global health photography exhibit featured more than 60 photos from students and faculty all over the world.



Western Connecticut Branch Campus Promises

New Learning Opportunities

Top: Mustafa Chopan, M.D. '17 (center), and Lisa Wang '18 (standing, right) on a rotation at Danbury Hospital. Far left: Katherine Wang, M.D. '17. Center: Kasra Sarabakhsh '18 (center) and Liam Donnelly '18 (right) Right: Mustafa Chopan, M.D. '17

In February of 2017, the state of Connecticut approved Western Connecticut Health Network as a branch campus, allowing Larner College of Medicine students to complete their entire clinical experience there.

Students in future classes will begin to choose during the admissions process where they want to complete the Clerkship and Advanced Integration levels of the Vermont Integrated Curriculum — either UVM or WCHN. The number of students completing coursework in Connecticut increases to 70, including 35 at the Clerkship Level and 35 in Advanced Integration.

The designation has required the establishment of a UVM Medical Student Education infrastructure in Connecticut, led by **Jonathan Fine, M.D.**, WCHN's director of medical education, and **Jonathan Rosen, M.D.**, associate dean for undergraduate medical education at WCHN. A full slate of faculty clerkship



Western Connecticut Health Network Fast Facts

Beds: 758

**Medical Staff: 1,161 physicians,
318 Allied Health Professionals**

University of Vermont Faculty: 461

Inpatient Discharges: 33,506

ED Cases: 134,483

Newborn Births: 3,439

Source: Western Connecticut Health Network <http://www.westernconnecticuthealthnetwork.org>

Excellence in Teaching. Danbury Hospital family physician Cornelius Ferreira, M.D., received the Alpha Omega Alpha Medical Honor Society Volunteer Clinical Faculty Award from AOA members in the Class of 2017. The award recognizes community physicians who contribute to the education and training of clinical students.

“THE PATIENTS SERVED BY WCHN REPRESENT A RICH DIVERSITY OF ECONOMIC, ETHNIC, RACIAL AND LINGUISTIC BACKGROUNDS. THIS DIVERSITY, COUPLED WITH THE WELL-ESTABLISHED GLOBAL HEALTH PROGRAM, ARE CRITICAL ELEMENTS OF THE WCHN EXPERIENCE.” – JONATHAN ROSEN, M.D., WCHN ASSOCIATE DEAN FOR UNDERGRADUATE MEDICAL EDUCATION



directors and clinical coordinators are in place and actively supporting students. The Harold A. Spratt Center for Simulation and Clinical Learning, designed by the same architects who created the UVM Clinical Simulation Lab, opened in the spring of 2014 and supports a robust standardized patient program that allows students to complete assessments and clinical skills exams in Connecticut.

The approval from the state of Connecticut for a branch campus builds on a long-standing partnership. Danbury Hospital has been an affiliate clinical site for clerkship rotations since 2010, with clinical rotations later established at Norwalk Hospital. The Liaison Committee on Medical

Education (LCME) approved the branch campus proposal in February of 2015.

“We’ve worked together successfully for many years to educate outstanding physicians, and this expanded collaboration will bring new opportunities to serve patients across the region,” said Larner College of Medicine **Dean Rick Morin, M.D.**

An “aligned vision and culture,” combined with the high number of students who “go onto practice primary care and family medicine” make the partnership a good fit, said WCHN President and CEO, **John M. Murphy, M.D.** “Connecticut has a shortage of primary care practitioners so it benefits

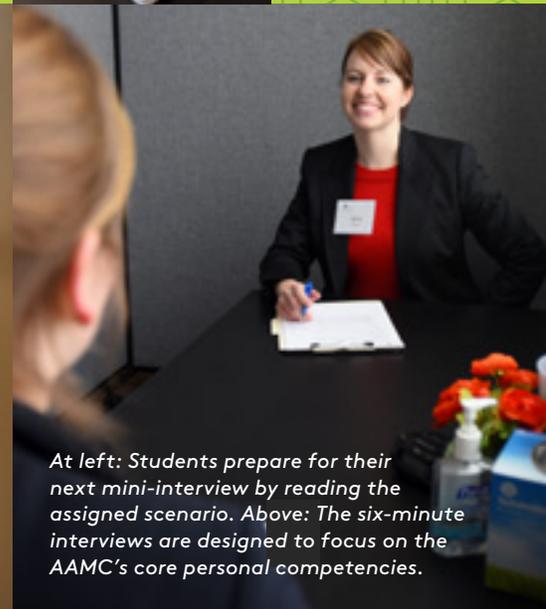
our patients to work with innovative programs like University of Vermont’s that are dedicated to keeping the students interested in this foundational area of practice,” he said.

The branch campus will allow students to develop deep ties to the greater Danbury area, and build relationships with faculty and patients over time. A significant Larner College of Medicine alumni community in the region also offers an important support system and opportunities for students to network.

The burgeoning global health program, based at WCHN, has been sending students and faculty to partner sites around the world since 2012. ■

Shaping the Physician Workforce for the 21st Century

The Multiple Mini Interview



At left: Students prepare for their next mini-interview by reading the assigned scenario. Above: The six-minute interviews are designed to focus on the AAMC's core personal competencies.

The Larner College of Medicine is in the fourth year of a new evidence-based admissions process that has transformed how students join the ranks of incoming classes. The Multiple Mini Interview (MMI) provides applicants the opportunity to showcase their unique talents, while giving the College a method to assess readiness for medical school from a range of perspectives.

The MMI includes a series of six-minute interviews with nine different people drawn from faculty, current students, community leaders, and patient/family advisors at UVM Medical Center. Applicants rotate through the stations, where each focus on a different scenario. Interviewers score applicants, and those results are compiled — along with other data from the day — and submitted to the Admissions Committee for consideration

as they make their final decisions throughout the interview season.

The goal, says Larner College of Medicine Associate Dean of Admissions **Janice Gallant, M.D.**, is to assess a student's readiness for medical school through the lens of the core personal competencies identified by the Association for American Medical Colleges (AAMC). These competencies include ethical responsibility, a capacity for improvement, cultural competence, and adaptability. While MCAT scores and other academic parameters are important, research has shown that they don't necessarily provide the required insight into the inter-personal and intra-personal competencies students need to excel, like communication acumen and an ability to empathize.

Moving away from a longer interview with one person also allows the College to consider multiple viewpoints and opinions,

providing the College with a more complete and less biased picture of a prospective medical student, says **Cary Jewkes**, the College's director of admissions.

To support this admissions process, the College now boasts more than 160 trained MMI interviewers from a range of backgrounds. This year, patient/family advisors from UVM Medical Center have been added to the team. With their intimate understanding of the needs of patients, this group provides important insight during the interview process.

The admissions team also continues to fine tune the teamwork activity included in interview days, which is designed to assess applicants' ability to communicate and make decisions in a group setting. And with active learning a continued focus for the College, interview days are following suit, with sessions throughout the day incorporating additional opportunities for interaction. ■

Engaging Patients and Families in the Interview Process

During the 2016-2017 interview season, patient/family advisors from UVM Medical Center were invited to join the interview team at the Larner College of Medicine, reflecting the shared commitment the two institutions have made to patient- and family-centered care and the goal of engaging patients and families whenever possible. Patient/family advisors play an important role at the medical center, as they bring the experience and expertise of patients and families to the development of policies, programs, facility design, and operations at UVM Medical Center, in an effort to improve safety, delivery of care and patient and staff satisfaction.

"We are highlighting for future physicians right from their very first encounter with our organizations the value of partnership and the importance of really listening to and including the patient and family perspective in all we do,"

says Amy Cohen, Ph.D., patient-and family centered- care program manager at UVM Medical Center.

Early feedback shows that the addition of patient/family advisors to the MMI interview team has been a success. A survey of advisors who participated over the past interview season revealed that 89.5 percent felt that participating as an MMI interviewer was a worthwhile and valuable use of their time. Said one patient/family advisor on the survey: "I believe input from a patient/family advisor directly relates to the outcome of better patient-and family- centered medical personnel – getting them from the start! We are helping to recognize those important characteristics that medical staff need to have."

The survey results were presented as a poster abstract at the Jeffords Institute for Quality 14th Annual Quality Forum in June of 2017. It has also been submitted for potential presentation at The International Conference for Patient- and Family-Centered Care in June of 2018.

ADMISSIONS HIGHLIGHTS

- Over 160 MMI interviewers have been trained to participate in interview days, with 1/3 of the group faculty, 1/3 students, and 1/3 community leaders.
- The Student Admissions Leadership Team (SALT) provides key guidance for several components of interview days, including the medical student panel and the diversity presentation.
- The diversity of the Admissions Committee continues to increase, with medical students, community leaders, and faculty from the Larner College of Medicine as well as its clinical affiliates and the branch campus at Western Connecticut Health Network all serving.
- The admissions team hosted a successful pilot of a virtual MMI circuit with an applicant who could not make it to campus thanks to a weather-related flight cancellation. The College plans to explore options for offering the virtual MMI on a regular basis in the future.



Prospective students tour the Larner College of Medicine with a current medical student, one of the many roles students play in the admissions process.

Students Take a Lead Role in Admissions

The newly formed Student Leadership Admissions Team (SALT) plays an important role in shaping the admissions process for prospective students. Comprised of about 15 current medical students, SALT coordinates with the Office of Admissions to create content for several important sessions on interview day, including a workshop on diversity and inclusion, and a medical student panel. SALT members make sure that presentations are intentional in their focus, and convey the information most helpful for applicants. SALT also works to recruit medical student volunteers for other important jobs, such as overnight host, ambassador on interview day, and MMI interviewer. The Larner College of Medicine benefits from the enthusiasm of its students: Currently more than 100 medical students, or about ¼ of the student body, are involved in the admissions process in some capacity.

SALT members are also contributing to scholarly understanding of medical school admissions. **Michael Hall '19** and **Althea Morrison '19** co-authored with faculty and admissions leadership a poster titled "The Medical Student Interview Day Panel: Assessing the Impact of a Student- organized and -implemented Initiative on Applicant Satisfaction". It was presented at the AAMC's Northeast Group on Student Affairs and Organization of Student Representatives Spring Conference in April of 2017. Co-authors include **Laura Greene, M.D.**, and **Raiel Barlow, M.D.**, co-chairs of the College's Admissions Committee; **Janice Gallant, M.D.**, associate dean of admissions; and **Elizabeth McElhinney**, assistant director of admissions.

Divided into three levels of increasing complexity and breadth of study, the **Vermont Integrated Curriculum (VIC)** fully integrates primary education in the basic sciences with a solid foundation in basic health science knowledge and clinical skills. Also included are programs in leadership skills, professional development, research, and teaching skills. Clinical correlations are prominent in the curriculum at all levels, beginning with meeting a patient on the first day of medical school.

YEARS 1 & 2

Foundations Level

The purpose of Foundations is for students to develop a fundamental understanding of health and illness as framed by systems from single genes to entire populations. Longitudinal courses support the development of professionalism and communication, clinical practice, community engagement, and public health awareness.

CURRICULUM COMPETENCIES

INCLUDE:

PATIENT CARE

MEDICAL KNOWLEDGE

PRACTICE-BASED LEARNING AND IMPROVEMENT

INTERPERSONAL AND COMMUNICATION SKILLS

PROFESSIONALISM

SYSTEMS-BASED PRACTICE

YEARS 2 & 3

Clerkship Level

The Clerkship Level focuses on development of the knowledge, skills and attitudes needed for clinical care and decision-making in a variety of medical settings. Students complete the clerkship year through either the Traditional Clerkship or the Longitudinal Integrated Clerkship.

Traditional Clerkship features block rotations in eight specialties, as well as Bridge Weeks that cover a range of topics including patient safety, pharmacology, and nutrition.

In the Longitudinal Integrated Clerkship, students meet core educational objectives by being embedded in primary care clinics and providing comprehensive care to a panel of patients.

YEARS 3 & 4

Advanced Integration Level

The Advanced Integration Level comprises required activities that enhance the student's clinical skills and knowledge of basic and clinical science, and elective activities that allow the student to shape his or her own professional development. All students are required to complete an acting internship in internal medicine, a second acting internship in a discipline of the student's choosing, one month of surgical specialty training, emergency medicine, and a teaching practicum/ scholarly project. This level is designed to optimize student choice to dovetail with the residency selection process.

Level 1: Foundations

AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
ORIENTATION	FOUNDATIONS OF CLINICAL SCIENCES				VACATION	ATTACKS AND DEFENSES	NUTRITION, METABOLISM AND THE GASTROINTESTINAL SYSTEM		VACATION	NEURAL SCIENCE
PROFESSIONALISM, COMMUNICATION AND REFLECTION										
							DOCTORING IN VERMONT			

Level 2: Clerkship

TRADITIONAL OR LONGITUDINAL INTEGRATED CLERKSHIP

Level 1: Foundations

AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN		
CONNECTIONS	CARDIOVASCULAR, RESPIRATORY AND RENAL SYSTEMS		HUMAN DEVELOPMENT AND REPRODUCTIVE HEALTH		VACATION	CONVERGENCE	USMLE STEP 1 EXAM PREPARATION AND COMPLETION	BRIDGE	SURGERY	INPATIENT INTERNAL MEDICINE	BRIDGE	VACATION
PUBLIC HEALTH PROJECTS												
DOCTORING IN VERMONT								LONGITUDINAL INTEGRATED CLERKSHIP: INTEGRATION OF ALL CLINICAL SPECIALTIES				

Level 2: Clerkship

TRADITIONAL OR LONGITUDINAL INTEGRATED CLERKSHIP

Level 3: Advanced Integration

JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN		
OR	NEUROLOGY/OUTPATIENT INTERNAL MEDICINE	PSYCHIATRY	BRIDGE	FAMILY MEDICINE	BRIDGE	PEDIATRICS	VACATION	OBSTETRICS AND GYNECOLOGY	BRIDGE	SELECTIVE	ACTING INTERNSHIP IN INTERNAL MEDICINE	SURGERY SUB-SPECIALTIES	EMERGENCY MEDICINE
	LONGITUDINAL INTEGRATED CLERKSHIP: INTEGRATION OF ALL CLINICAL SPECIALTIES												

Level 3: Advanced Integration

JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	
USMLE STEP 2 EXAMS PREPARATION AND COMPLETION	SELECTIVE	VACATION	TEACHING PRACTICUM OR SCHOLARLY PROJECT	ACTING INTERNSHIP	INTERVIEWS/VACATION	SELECTIVE	SELECTIVE	SELECTIVE	SELECTIVE	PRESENTATIONS AND TRANSITIONS	GRADUATION

YEARS 1 & 2 Foundations Level

As the Larner College of Medicine continues to shift to active learning, important changes have been made to this first level of the Vermont Integrated Curriculum, including the introduction of a new course, and a longitudinal point of care ultrasound curriculum. Long-standing components of Foundations, including the Public Health Projects and the Cultural Awareness Conference, give students key opportunities to interact with the community.

New Course: Foundations of Clinical Sciences

A new, 18-week course introduces students to the fundamental concepts of anatomy, biochemistry, human genetics and other basic disciplines in medical science through a longitudinal, interdisciplinary framework. Foundations of Clinical Sciences combines what was a six-week course, Foundations of Medicine, and a 12-week course, Human Structure and Function, into one course. This new structure allows faculty to integrate over time and in different ways subjects that touch all aspects of medicine, like ethics and public health. Co-course directors **Stephen Everse, Ph.D.**, and **Ellen Black, Ph.D.**, worked with faculty to design the course with a focus on integration. For example, students may learn about some aspect of genetics in tandem with a particularly activity in anatomy lab, and return to it again while studying cell biology to help integrate the knowledge in different ways. Small group discussions have been particularly useful, says Everse. These allow one faculty member to work with a group of ten or so students over time, serving as a facilitator for what is often a case-based discussion. A variety of learning strategies are integrated throughout the course to help students develop effective approaches that will prepare them for success in their ongoing studies.

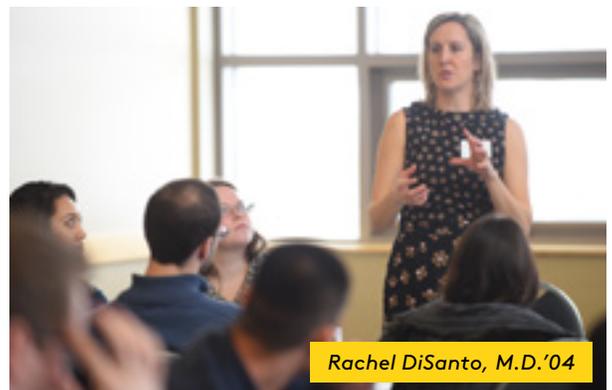


Foundations Moves to New Grading System

Based in part on a student-generated proposal, the Medical Curriculum Committee converted all Foundations courses starting with the class of 2020 to a pass/fail grading system, eliminating the "Honors" designation. Medical education research shows that pass/fail grading for undergraduate medical courses increases collaboration and cooperation, while decreasing emotional exhaustion and burnout. The AAMC reports that the number of medical schools using a pass/fail system for pre-clinical courses increased to 89 in 2015-16, up from 71 in 2012-13.

Human Trafficking in Vermont: Recognition and Response

For the past four years, the Cultural Awareness Conference hosted and sponsored by the Department of Family Medicine has brought first-year medical students and graduate nursing students together for a required symposium focused on an issue related to diversity and inclusion in healthcare. This year's theme addressed the impact of human trafficking on patient health. Keynote speaker and Larner College of Medicine alum **Rachel DiSanto, M.D.'04**, a clinical assistant professor of medicine and a family medicine physician at North Country Hospital in Newport, Vt., talked about her work on a task force to develop a curriculum that educates providers about human trafficking and how to recognize victims in the healthcare setting. Past themes for the conference have included "Coming to the U.S.A. — A Focus on Healthcare Challenges," and "Food, Culture and Health."



Point of Care Ultrasound Introduced as Longitudinal Focus

A new point of care ultrasound (POCUS) course that tracks across all three levels of the Vermont Integrated Curriculum enhances students' doctoring skills by bringing another dimension to their understanding of the human body. POCUS modules are being integrated into the Foundations Level through courses including Foundations of Clinical Sciences, Nutrition, Metabolism and the Gastrointestinal System, and Cardiovascular, Renal and Respiratory Systems. Students work in small groups with faculty and a standardized patient, using the technology to help understand the structure and functioning of the human body in ways that complement their work in anatomy lab and other course modules. In addition to a Fundamentals of POCUS course, the formal four-year curriculum includes integration at the clerkship level, and a fourth-year elective course. Familiarity with POCUS is in demand as a clinical skill: Recently mandated as a core competency in emergency medicine training, POCUS helps improve the accuracy of diagnoses and patient safety.



Students attend POCUS session.

Foundations **SNAPSHOTS**

Public Health Projects

Sixteen organizations paired with small groups from the Class of 2019 to complete their Public Health Projects, a 19 and a half-week required course that delivers tangible benefits to the community. Topics included the Burlington Lead Program's goal to raise public awareness about lead poisoning prevention; perceptions on health care among newly arriving Vermont refugees for the state's Department of Health; and an evaluation of the effectiveness of Vermont CARES' syringe exchange programs for preventing the spread of HIV. Projects for the American Cancer Society of Vermont and the American Heart Association focused on public policy advocacy.

Spiritual Care

The Spiritual Care module of the Professionalism, Communication and Reflection course is designed to give first-year medical students the space and support to explore their beliefs regarding death and dying. As part of the required experience, students can choose to shadow a member of the spiritual care team at UVM Medical Center or a local group called the Noyana Singers, trained Hospice volunteers who sing for patients and their families at Vermont Respite House. All students write a reflection and talk about their experience in small group sessions. **Lee Rosen, Ph.D.**, PCR course director, calls it "experiential learning that is just irreplaceable."

Adolescent Health & Well-Being

Sixty-eight seventh-grade students from Vergennes Union Middle School presented on topics related to adolescence to the second-year medical students as part of the Human Development and Reproductive Health course. While full of fun and humor, each presentation covered serious issues that many adolescents experience, like anxiety, bulimia, voice changes and cyber bullying. They performed skits, songs, poems, game shows, videos and monologues that described what it's like to be an adolescent. Following the presentations, medical students joined small groups of middle-school students for further discussion over lunch.



YEARS 2 & 3

Clerkship Level

A new Longitudinal Integrated Clerkship pilot program and expanding opportunities for students to complete rotations in the UVM Health Network are some of the key highlights for the Clerkship Level.

“Mock Code” Curriculum Helps Prep Clerkship Students

As a clerkship student, **Melanie Ma, M.D.’17**, witnessed a patient go into cardiopulmonary distress and die during the third day of her first-ever rotation. The experience – and the uncertainty about her role as a medical student – prompted her to discuss the experience with classmate **Allie Brown, M.D.’17**. Neither student had undergone training to prepare emotionally for this type of scenario, but they now had proof it was needed. The beginnings of a curriculum plan were set into motion. With support from a variety of faculty and spiritual care professionals, as well as **Laurie Leclair, M.D.**, who served as their Scholarly Project advisor, Ma and Brown developed a simulation scenario for a code that asks students to experience the death of a patient – courtesy of Simterns and critical care staff – and then dissect their emotional reaction with a panel of experienced clinicians. First piloted during the Class of 2018’s orientation week for Clerkship, the feedback was so positive that the mock code curriculum ran again for the Class of 2019. The curriculum has been presented at the Teaching Academy’s Snow Season Retreat and was accepted for presentation at the American Medical Women’s Association national meeting.



Students participate in a mock code simulation.

FIRST PILOTED DURING THE CLASS OF 2018’S ORIENTATION WEEK FOR CLERKSHIP, THE FEEDBACK WAS SO POSITIVE THAT THE MOCK CODE CURRICULUM RAN AGAIN FOR THE CLASS OF 2019.

Florida Clinical Affiliate Garners High Marks for Teaching

Since 2010, St. Mary’s Medical Center in West Palm Beach, Florida, has hosted clerkship students for rotations in obstetrics/gynecology and pediatrics, allowing students to experience a diverse range of clinical experiences under the guidance of outstanding mentors. Faculty and clinical departments there have been recognized many times for their exemplary teaching, including **Roberto Borrego, M.D.**, clinical assistant professor of surgery, who has been the recipient of the Howe Outstanding Teacher Award. His continued mentorship of students at the Clerkship and Advanced Integration levels has helped to shape the next generation of physicians. As medical director and chief of trauma at St. Mary’s, Borrego has helped to improve treatment for shark attack victims through analyzing bacteria from different types of shark and developing targeted antibiotics.



Clinical assistant professor of surgery Roberto Borrego, M.D.

Clerkship Success by the Numbers

Larner College of Medicine students consistently report high quality teaching and positive clerkship experiences. The following are selected results from the Association of American Medical Colleges 2016 Graduate Questionnaire.

93% **Clerkship Excellence:** 93 percent of students in the Class of 2016 rated the Family Medicine Clerkship as good/excellent, compared to 85 percent of their peers nationally.

86% **Residents as Outstanding Teachers:** 86 percent of students in the Class of 2016 said they agree or strongly agreed that Obstetrics/Gynecology residents were effective teachers, compared to 75 percent of their peers nationally.

99% **Clinical Decision Making:** 99 percent of students agreed or strongly agreed with the statement: "I have basic skills in clinical decision making and the application of evidence-based information to medical practice," compared to 94 percent of their peers nationally.



Kenyon Bolton '18 on a pediatrics clerkship rotation.

Clerkship News

Psychiatry Clerkship: Jeremiah Dickerson, M.D.

Teaching has evolved to incorporate new active learning sessions, engagement of students in reflective exercises, and enhanced attention to themes of wellness, illness prevention, stigma, use of evidence-based medicine, and the impact of adverse experiences on psychiatric and non-psychiatric problems. With the assistance of a teaching grant, educators are building a new mental status exam e-learning module incorporating real-world audio and visual patient material, allowing for a richer and more authentic learning experience.

Surgery Clerkship: Jesse Moore, M.D.

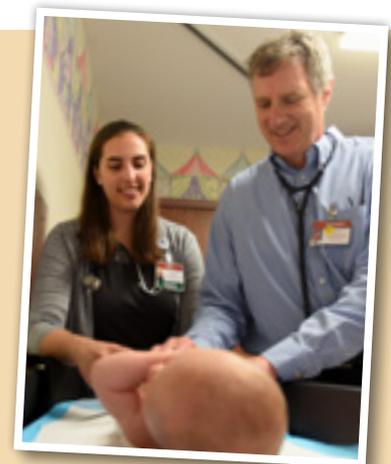
Tess Aulet, M.D., general surgery resident, is working on a Surgical Education Research Fellowship (SERF) through the Association of Surgical Education. She is developing a grading rubric to be used for assessing the AAMC's "Entrustable Professional Activity 5, documenting a clinical encounter." Preliminary research data has been presented at the 2017 annual meeting of the International Association of Medical Science Educators.

Pediatrics Clerkship: William Raszka, M.D.

The Pediatrics Clerkship has transitioned to 100 percent active learning, beginning with orientation. Active learning sessions are now run locally, as opposed to electronically linking students to core learning sessions at the Burlington campus. All materials, including outlines, cases, answer keys and discussion points, are distributed to faculty so that students are still engaged in the same material at all sites.

Clerkship *SNAPSHOTS*

- With three sites in northern New York and three in Vermont, clinical teaching opportunities continue to expand through the UVM Health Network.
- The Longitudinal Integrated Clerkship pilot program launched with students in the Class of 2019. Students meet core educational objectives through being embedded in a primary care clinic.
- Bridge Clerkships support professional growth and extend the learning of core competencies into clinical applications and decision-making. This year, the College added Palliative Care as a Bridge Week course under the direction of **Robert Gramling, M.D., D.Sc.**, Holly and Bob Miller Chair in Palliative Medicine.



YEARS 3 & 4 **Advanced Integration Level**

The Advanced Integration Level provides students with additional responsibilities for patient care as they prepare for their residency training and future careers. Requirements include two acting internships, a surgical subspecialty rotation, an emergency medicine rotation, and clinical or non-clinical electives in areas of the student’s choosing. Students also fulfill a requirement for scholarly work in teaching or research.

Teaching Assistants Get Head Start on Physician’s Role as Teacher

The Teaching and Scholarly Project requirement helps senior medical students develop their skills as teachers – a role they will play throughout their career with patients, and immediately following graduation as residents, when they will teach medical students. Students may fulfill the requirement in one of two ways: the teaching practicum or a scholarly project.

Students who choose the teaching practicum serve as a teaching assistant in the Vermont Integrated Curriculum. The TAs become an expert in their subject; they attend all learning sessions for the course, work with lead faculty members to establish cases for the small-group sessions they facilitate, hold “office hours” for one-on-one tutoring, and produce the material for larger-group review sessions. **Eileen CichoskiKelly, Ph.D.**, course director and director of education instruction and scholarship, provides feedback and guidance throughout the experience.

Scholarly Project

Students who choose the second option for the course – the scholarly project - try on the role of scientific researcher. They complete an independent research project with a faculty mentor, through which they enhance their analytical and communications skills, and learn how to present their work in a professional setting. Selected scholarly projects from the past academic year have included:

- Barriers to HPV Vaccination in Vermont College Students
- Developing a Health Advocacy and Health Policy Curriculum
- Telemedicine Can Replace the Neurologist on a Mobile Stroke Unit
- Housing is Healthcare: The Effect of a Low-Barrier Warming Shelter on ED Utilization by Burlington Homeless



Bridget Colgan, M.D.'17, serves as a teaching assistant in anatomy lab.

STUDENTS COMPLETE AN INDEPENDENT RESEARCH PROJECT WITH A FACULTY MENTOR, THROUGH WHICH THEY ENHANCE THEIR ANALYTICAL AND COMMUNICATION SKILLS.



Student Council President Mohammad Mertaban, M.D.'17, looks out at the happy faces of his classmates (and college mascot Dr. Moo) as he helps to kick off Match Day festivities.

MATCH RESULTS 2017

Family Medicine **11**
 Internal Medicine **14**
 Pediatrics **11**
 Anesthesiology **9**
 Child Neurology **1**
 Dermatology **3**

Diagnostic Radiology **3**
 Emergency Medicine **9**
 General Surgery **9**
 Gen Surgery/Research **1**
 Medicine/Emergency Medicine **1**
 Neurology **1**

Obstetrics & Gynecology **10**
 Ophthalmology **2**
 Orthopaedic Surgery **5**
 Otolaryngology **1**
 Pathology **4**
 Peds/Psych/Child Psych **1**

Physical Med & Rehabilitation **2**
 Plastic Surgery **2**
 Psychiatry **2**
 Radiation Oncology **1**
 Urology **2**

Senior Surgery Awards

Every spring, the Department of Surgery celebrates the graduating students who plan to go into the specialty by showcasing the scholarly work they've completed as part of the Senior Major Program in Surgery. In 2017, the 47th annual event featured the work of 15 students on research questions related to a wide range of topics, including the impact of mammographic screening on the use of chemotherapy, patient outcomes as related to lung cancer multi-disciplinary clinics, and overnight stays after laparoscopic anti-reflux surgery.

Honoring Teachers and Mentors

Honors Night celebrates the academic achievements of the graduating class as well as the mentors and teachers who have helped them succeed. Thirty student awards are presented, in addition to recognition of newly-elected Arnold P. Gold Humanism Honor Society members and Alpha Omega Alpha Honor Society members. Eleven faculty awards, along with one staff award and one department award, celebrate outstanding teaching and mentorship. The Class of 2017 honored **Elise Everett, M.D.**, associate professor and clerkship director for obstetrics, gynecology and reproductive sciences, with the Clinical Teacher of the Year Award. The Department of Family Medicine garnered the Clinical Department of the Year Award, also known as the Silver Shovel Award.



Advanced Integration **SNAPSHOTS**

As students prepare to graduate and apply to residency programs, they have unique opportunities to shape the last year of their medical education. Here, three members of the Class of 2017 talk more about recent experiences completing Advanced Integration electives:

Katherine Wang, M.D.'17, on the *Global Health* rotation she completed in Uganda, as part of the *UVM/WCHN Global Health Program*: It's amazing how much I've learned in this time, but I also feel like I have just scratched the surface. Everyone has asked us: "When are you coming back?" It's a hard question to answer as we enter into our next phase of training, but I definitely hope I will have the opportunity to return in the future...Spending the past six weeks in both an urban referral setting and a rural district hospital has introduced me to considering the challenges that health care providers face in a more tangible manner.

Elizabeth Cochrane, M.D.'17, on her *Clinical Simulation* elective (students are also known as 'Simterns') at the *UVM Clinical Simulation Lab*: Our first two days were very interesting and unique. We attended a faculty lecture series on developing simulations. It was a great experience because it was the first time we were on the other side of an encounter, meaning that we usually are the learners and not the teachers. I did not realize how much planning, thought, and creativity it took to construct a simulation. It was eye-opening and definitely very helpful moving forward.

Sarah King, M.D.'17 on her *Family Medicine* elective at *Grace Cottage Hospital, in Townshend, Vt.*: One of the things that I took away from my time at Grace Cottage is how important it is to understand the social situation of each of your patients. In medical school we learn the best way to treat diseases and we learn the preventative medicine recommendations, but this is entirely dependent on what your patient is able or willing to do! Townshend is such a rural area, and there is a lot of thought and planning that goes into further referrals that may be a two hour trip.



Learning Environment

From orientation activities that generate discussion about diversity in the very first days of medical school, to innovative simulation education, to faculty and staff appointments that provide important support to students, the Larner College of Medicine is committed to fostering a positive learning environment that builds a culture of respect.



Faculty participate in an interprofessional simulation in the UVM Clinical Simulation Laboratory.

Short Film Gains National Attention

A short film, educational module, and curriculum created by a team of faculty and students to address and reduce the incidence of learner mistreatment has been presented nationally and adopted by medical schools across the country. Directed by **Sean Ackerman, M.D.**, former child and adolescent psychiatry fellow at UVM Medical Center, the eight-minute film created with input from medical student focus groups includes four scenarios depicting potential incidents of learner mistreatment.

The module, now required for all third-year medical students, has increased students' awareness of policies and procedures related to mistreatment to nearly 100 percent, from 44 percent in 2013. The film, which has been shown at Grand Rounds for all academic departments, is also helping to build empathy and awareness in a way that stands to shift medical culture over time.

Judith Lewis, M.D., Nathalie Feldman, M.D., Charmaine Patel, M.D., David Adams, M.D., David Harari, M.D., and Katherine Evans, M.D., presented the film and module at the 2017 International Association of Medical Student Educators Annual Meeting. It is available, along with a facilitator's guide, on MedEd Portal. A second film curriculum reflecting faculty, resident and staff perspectives on the challenges they face working with students in the learning environment is now in development.



Simulation Education News

A collaborative effort of the Larner College of Medicine, the UVM College of Nursing and Health Sciences, and The University of Vermont Medical Center, the Clinical Simulation Laboratory serves as a centralized hub in the training of health care professionals with a focus on improving patient care and safety. Highlights from the past year include:

- A successful full-day workshop on Point of Care Ultrasound for faculty at Hudson Headwaters Health Network, in preparation for future integration into medical education at that site.
- A multidisciplinary, six station Clinical Skills Exam for students in the Longitudinal Integrated Clerkship has been implemented, with positive results.
- The first two third-year surgery residents have graduated from a new Simulation Fellowship accredited by the American College of Surgeons.
- A customizable, simulation-based learning module focused on recognizing and helping victims of human trafficking is now available to healthcare providers and educators.
- The LGBTQ+ Collaborative continues to focus on improving the patient experience of this population through simulation-based education of faculty, residents and students.
- The goal of a new collaborative focused on elder and vulnerable adult abuse prevention is to develop curricula and programming to empower health care providers to recognize and respond to this problem. ■

Learning Environment



Christian Berry, M.Ed.

NEW AND NOTABLE

Curriculum Manager to Lead Faculty Collaboration & Planning

As the Larner College of Medicine continues its transition to active learning, a new Curriculum Manager promises to help faculty develop course material as well as set best practices across the curriculum. **Christian Berry, M.Ed.**, leads daily operations for the Vermont Integrated Curriculum, including collaboration with level directors and faculty in the planning, development and production of curriculum materials, deployment and management of personnel for curriculum operation and ensuring the use of best practices for curriculum operation. Berry has a Masters of Education degree from UVM. She's also an adjunct faculty member of psychology at the Community College of Vermont.



Nathalie Feldman, M.D.

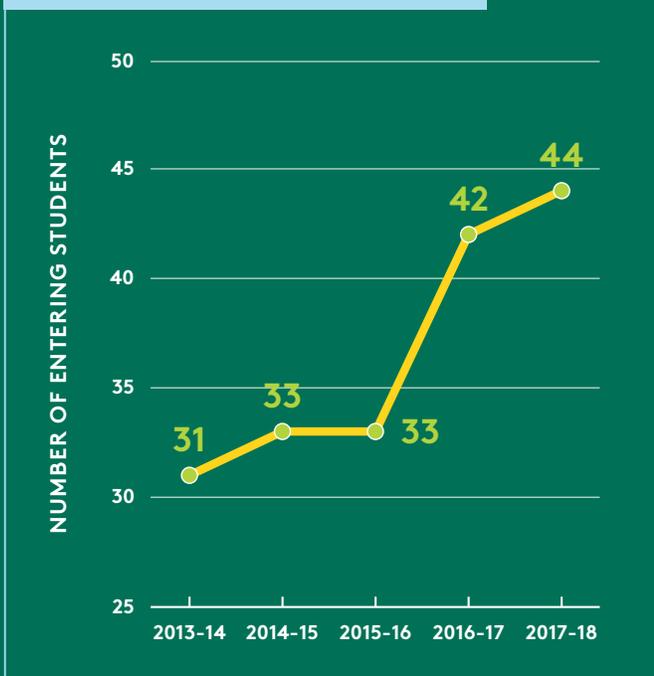
Feldman Appointed Director of Learning Environment

Nathalie Feldman, M.D., education assistant professor of obstetrics, gynecology and reproductive sciences, has been appointed Director of the Learning Environment, a role that supports the College's commitment to professionalism. Feldman is responsible for providing medical students with a neutral and safe environment to share their thoughts and/or concerns, and for engaging in unbiased dialogue aimed at exploring options for optimal resolution. Feldman has previously served as a member of the Medical Admissions Committee, as well as acting associate dean for students in 2014. Her academic area of interest focuses on medical professionalism and innovations that help mitigate negative and enhance positive influences on the learning environment. ■

A Focus on Diversity and Inclusion

The Larner College of Medicine values diversity as a driver of excellence, and promotes the advancement of diversity, inclusion and cultural competence in the medical profession.

GROWTH IN ALANA ADMISSIONS*



2017 SNAPSHOTS

Diversity and Inclusion Mini-Grants or DIME, a fund managed by the Office of Diversity and Inclusion, support organizational and individual efforts that advance diversity through co-curricular or outreach activities. Funded initiatives include the American Medical Women's Association Girls Science Discovery Day (above), UVM's Rainbow Graduation, and the Medical Spanish Student Interest Group's Healthy Fields Initiative.

The Finding Our Common Ground orientation program includes a set of experiential activities (at top) to help establish a common language and understanding of diversity, inclusion and cultural competency.

DIVERSITY FAST FACTS

- 20 percent of the Class of 2021 have identified themselves as LGBT
- The Larner College of Medicine produces the highest percentage of ALANA students at UVM

*ALANA: ASIAN-AMERICAN, LATINO, AFRICAN-AMERICAN, NATIVE AMERICAN, (INCLUDES STUDENTS WHO SELF-IDENTIFIED AS TWO OR MORE RACES)

Medical education at the Larner College of Medicine extends well beyond campus. Students engage in service activities throughout Vermont that deepen their understanding of the patient populations they serve, as well as develop programs that address the health needs of the community. And on campus, students are encouraged to follow their diverse interests in and out of the classroom.

Left to right: Eli Goldberg '20, Rachael Munoz '20, Lauren Donnelly '20, Erin Hunt '20, Kirsten Martin '20, Conner Soderquist '20. Missing: Alejandra Vivas Carbo '20, Ashley Aiken '20



Schweitzer Fellows Aim to Address Health Needs of the Underserved

Developing leaders in service is the core mission of the Albert Schweitzer Fellowship program. In April of 2017, eight Larner College of Medicine students were named 2017-18 Schweitzer Fellows by the New Hampshire/Vermont Schweitzer Fellowship. With that honor, they will provide 200 hours of service conducting year-long projects that address the health needs of underserved populations. Learn more about the 2017-18 Schweitzer Fellows:

Eli Goldberg '20 will continue to facilitate and develop the TransForm Project launched by medical student and Schweitzer Fellow for Life Al York '19. Working with the Pride Center of Vermont, the project supports the health and wellbeing of transgender Vermonters through peer mentoring, community skill shares, and online resources.

Rachael Munoz '20 and **Erin Hunt '20** are carrying on a Schweitzer Fellow project launched by Schweitzer Fellow for Life Jasmine Robinson '19, called "Here to Help." Working with the Chittenden County

Homeless Alliance, they are organizing clinics for the Vt.-area homeless population with in-person access to social support services, as well as hot meals, showers, haircuts and clothing. The end goal is a monthly program that will continue beyond their project.

Lauren Donnelly '20 and **Kirsten Martin '20** are developing a 12-week weight management program for cancer survivors in collaboration with the Steps to Wellness program of the UVM Cancer Center. They will conduct a behaviorally-based intervention focused on calorie

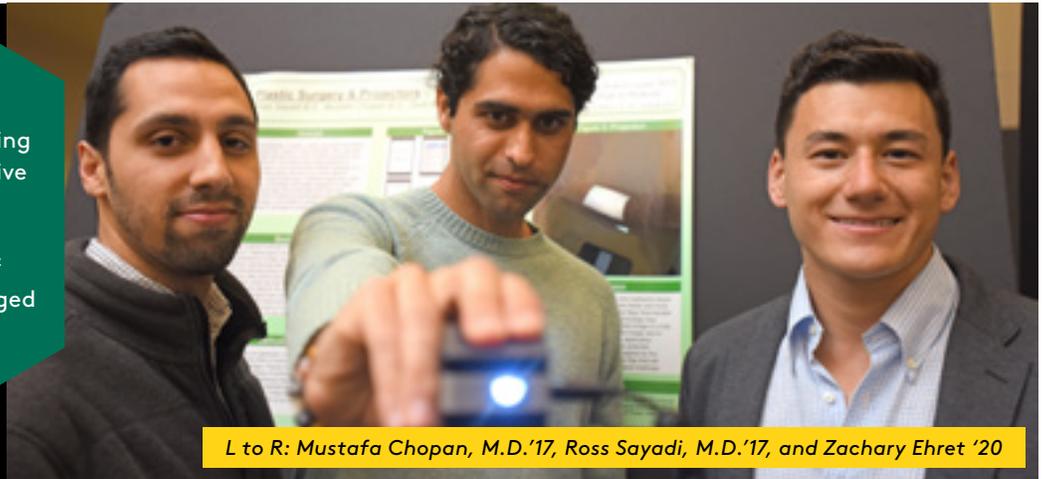
reduction, an increase in exercise and behaviors to support diet change.

Conner Soderquist '20 is conducting a project at the Centerpoint School that aims to increase access to healthy food and improve culinary skills among adolescents faced with economic hardship and impacted by social, emotional, learning and/or mental health challenges. He will develop nutrition education that will be paired with site visits to local farms, as well as cooking classes.

Alejandra Vivas Carbo '20 and **Ashley Aiken '20** will be designing and implementing a program that helps Burlington, Vt.-area New American teenage girls and low-income families improve wellness in their lives through the development of healthy habits based on the "four pillars" of health: nutrition, fitness, wellness and mentorship. ■

Next Gen Thinking

A medical student's fresh thinking can sometimes lead to innovative solutions to long-standing challenges in healthcare. Here at the Larner College of Medicine, students are encouraged to pursue their novel ideas through to fruition.



L to R: Mustafa Chopan, M.D.'17, Ross Sayadi, M.D.'17, and Zachary Ehret '20

Al Marchese '19 sees in his peers a panoply of inventors and innovators eager to offer novel solutions to challenges in medicine and other industries. Now through the Catamount Innovation Fund, which he helps to lead, there's a new system to move their ideas forward. The fund, housed in UVM's Office of the Vice-President for Research, opened its "doors" in the fall of 2017, giving undergraduate and graduate students the opportunity to collaborate with and invest in current student entrepreneurs and inventors, as well as recent alumni. Marchese's interest in entrepreneurship began with a summer research fellowship with UVM Professor **Mercedes Rincon, Ph.D.** He is now raising capital for the fund and to form an innovation team for the 2017-18 academic year.

"Why not be perfect all the time?" says **Mustafa Chopan, M.D.'17** in regards to a new invention that aims to ensure consistent accuracy in surgical markings for plastic surgery that he, classmate **Ross Sayadi, M.D.'17** and **Zachary Ehret '20** developed and presented at UVM's Student Research Conference. The concept for the projector emerged from their experiences observing plastic surgeons draw surgical markings free-hand. This increased the risk for mistakes and jeopardized patient safety, say the inventors. A software application with a database of markings enables surgeons to select pre-measured flaps, manipulate their size and position to fit the anatomical parameters of each patient, and use them as a stencil that can be projected onto the skin. ■



James Hudziak, M.D., delivers a talk on the "science of mindful wellness" to the Larner College of Medicine Class of 2020 and their families.

Class of 2020 and Families Introduced to The Science of Mindful Wellness

On the morning of the College's 2016 White Coat ceremony, UVM Professor of Psychiatry **James Hudziak, M.D.**, hosted a talk for the entire Class of 2020 and their family members focused on how mindfulness practice can decrease stress and anxiety. Titled "The Science of Mindful Wellness for Medical Students and their Parents – from the Dad of a Medical Student," Hudziak discussed knowledge gleaned from his decades of research on how behavior change happens in the brain. He also led attendees through a meditation.

In 2015, Hudziak founded the UVM Wellness Environment, a university-wide, neuroscience-based, behavior change program that includes a residential component. The program has garnered national attention for the positive effects it has had on undergraduate student health and well-being. With emotional exhaustion and burn-out a continued challenge for the medical profession, Hudziak's talk adds to ongoing efforts by the College to help students develop skills and strategies to promote personal wellness.

Scholarship of Teaching

Larner College of Medicine faculty members pursue education scholarship that sets the bar nationally. Many also receive accolades for their dynamic teaching and mentoring.

Jeffries Honored with 2017 Master Scholar Award

Professor of Pharmacology and Senior Associate Dean for Medical Education **William Jeffries, Ph.D.**, received the 2017 International Association of Medical Science Educators Master Scholar Award for his distinguished record of educational scholarship. He has hosted over 70 presentations, seminars and workshops nationally and internationally with the goal to improve medical teaching. Jeffries is co-editor (with Dr. Kathryn Huggett) of two editions of *An Introduction to Medical Teaching*, a faculty development manual for medical educators. He is a contributing author to many other medical teaching works. An outspoken proponent of active learning, his advocacy for its use in medical education has been featured in many scholarly publications. The Larner College of Medicine's cutting edge approaches, led by Jeffries, have also caught the attention of the popular press, and have been featured in the *New York Times*, *Boston Globe*, the *Chronicle of Higher Education*, and *U. S. News and World Report*, among others.



William Jeffries, Ph.D., (left) receives the 2017 IAMSE Master Scholar Award from Joseph Stein, Ph.D., chair of the IAMSE Educational Scholarship Committee.

Frymoyer Scholars Focus on Innovative Medical Education



The John W. and Nan P. Frymoyer Fund for Medical Education is an investment in outstanding medical education, promoting teaching that emphasizes the art of patient care. Not only do the 2017 Frymoyer Scholars embody the best qualities of the clinician teacher, they are creating new paradigms for medical education through in-depth, year-long projects.

Laura McCray, M.D., MSCE, Jane Nathan, Ph.D., Nathalie Feldman, M.D.: *"Stress Management and Resiliency Training for Residents (SMART-R) and Medical Students"*

Dennis R. Beatty, M.D.: *"Developing and applying a longitudinal clinical reasoning curriculum across all four years of training at the University of Vermont Larner College of Medicine"*

David Rand, D.O., M.P.H., Shaden Eldakar, M.D., M.S., Nancy P. LeMieux, MSN, RN, CHSE: *"Conversation About End of Life Wishes: Teaching Trainees to Facilitate Code Status Discussions"*

Halle Sobel, M.D., FACP, Sanchit Maruti, M.D.: *"Medication Assisted Treatment (MAT) Integration into a Primary Care Internal Medicine Residency: A Novel Interprofessional Addiction Treatment Curriculum"*

Jerry Larrabee, M.D., M. Mercedes Avila, Ph.D.: *"Health Care Disparities in Vermont: A Curriculum for Health Care Workers, Trainees, and Students"*

Scholarship of Teaching

First Receives 2017 Kidder Outstanding Faculty Award

Lewis R. First, M.D., professor and chair of the Department of Pediatrics, was named by the UVM Alumni Association as the 2017 recipient of its George V. Kidder Outstanding Faculty Award. He is the first faculty member from the Larner College of Medicine to receive the UVM Alumni Association's highest faculty recognition. The Kidder Award honors one full-time UVM faculty member for excellence in teaching and extraordinary contributions to the enrichment of campus life. Established in memory of Dr. George V. Kidder, UVM Class of 1922 and former dean of the College of Arts and Sciences who served the university for more than 70 years, the prestigious award has been presented annually since 1974.



Huggett Named to National Steering Committee

Larner Endowed Professor of Medical Education **Kathryn Huggett, Ph.D.**, has been named to the Academies Collaborative Steering Committee, a national forum for health professions teaching academies and similar organizations. As the inaugural director of the Larner College of Medicine Teaching Academy, Huggett has been instrumental in building the infrastructure for education scholarship and educator development at the College.



UVM MEDICAL GROUP AWARDS

The UVM Medical Group honors outstanding teaching and funds clinical and education research through an annual awards program.

2016 TEACHING AWARDS

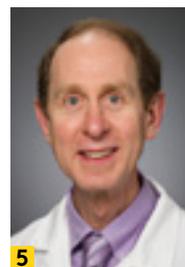
Judith Lewis, M.D.[1], associate professor of psychiatry and director of the department's residency program, was named Graduate Medical Education Teacher of the Year. She was recognized for her openness to new ways of teaching and her continual search for ways to improve resident education.

Anya Koutras, M.D.[2], associate professor of family medicine, and **Patricia O'Brien, M.D.**[3], assistant professor and clinical scholar in medicine, tied for the Continuing Medical Education Teacher of the Year award. Koutras has directed the Family Medicine Review Conference since 2010, and in 2015 she became course director for the Annual Update on Women's Health conference. O'Brien started the Women's Health and Cancer Conference 19 years ago.

2016 EDUCATION RESEARCH GRANTS

Stephanie Mann, M.D.[4], associate professor of obstetrics, gynecology and reproductive sciences, and **Mark Levine, M.D.**[5], professor of medicine, were awarded a grant to study how a GME-supported targeted curriculum can directly impact patient outcomes as residents learn the skills necessary to provide safe, high-quality, patient-centered care.

Laurie Leclair, M.D.[6], professor of medicine, and **Colleen Quinn, M.D.**[7], a family medicine specialist at Hudson Headwaters Health Network in New York state, were awarded a grant to study if longitudinal incorporation of medical students into primary care practice will improve targeted patient care quality outcomes and satisfaction.

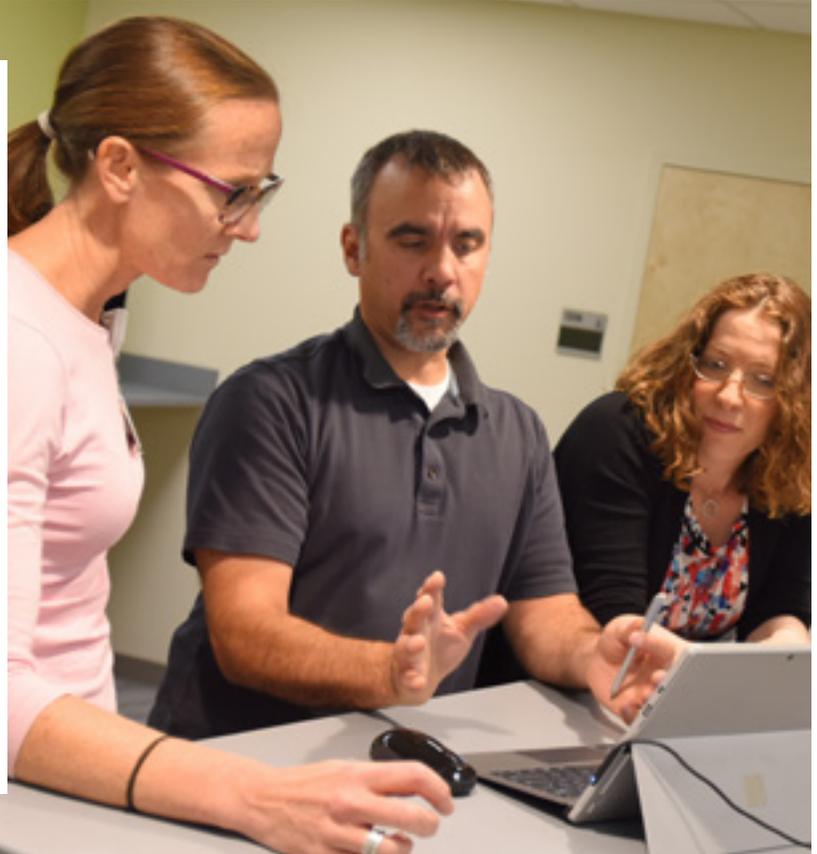


Teaching Academy

The Teaching Academy sustains and supports an interdisciplinary community of educators who value the scholarship of teaching and learning while facilitating educator development. The goal is to promote an academic environment that increases the value and impact of educators locally, regionally, and nationally.

Introducing the Larner Learning Commons

In June of 2017, the Teaching Academy moved to a new space envisioned as a laboratory for teaching at the Larner College of Medicine. The \$2.1 million Larner Learning Commons includes production studios for faculty to develop course materials designed to facilitate active learning. IT staff with expertise in educational design and technology are co-located in the space. Faculty also have easy access to Teaching Academy personnel including several staff members with expertise in survey design and evaluation, as well as experts in the Dana Medical Library. Larner Endowed Professor of Medical Education and Teaching Academy Director **Kathryn Huggett, Ph.D.**, says the new Commons will be “one-stop shopping” for faculty looking to hone their teaching and assessment skills.



2016-17

Teaching Academy Inductees

MASTER TEACHER

Lee Rosen, Ph.D., *Assistant Professor, Psychiatry*

MEMBER

Sally Herschorn, M.D., *Associate Professor, Radiology*

Robert Hieronimus, M.D., *Assistant Professor, Anesthesiology*

Karen Leonard, M.D., *Associate Professor, Pediatrics*

Sarah McCarthy, Ph.D., *Assistant Professor, Neurological Sciences*

Stephen Merena, D.P.M., *Assistant Professor, Orthopaedics and Rehabilitation*

Julie Phillips, M.D., *Assistant Professor, Obstetrics, Gynecology and Reproductive Sciences*

Constance van Eeghen, Dr.P.H., *Assistant Research Professor, Medicine*

Richard Watts, M.D., *Associate Professor, Radiology*



PROTÉGÉ

Tess Aulet, M.D., *Resident, Surgery; Fellow, Clinical Simulation Laboratory*

D. George Ormond, M.D., *Resident, Surgery; Fellow, Clinical Simulation Laboratory*

Lauren Pearson, D.O., *Resident, Pathology and Laboratory Medicine*

Mrinal Shukla, M.D., *Fellow, Surgery*

ACADEMY LAUNCHES NEW AWARD & GRANT PROGRAMS

The Teaching Academy celebrated this year the inaugural recipients of two annual awards to faculty: One to support travel to a conference or fellowship program, and the other to help fund curriculum development and scholarship.

Travel Award: Bridget Marroquin, M.D.; Sarah McCarthy, Ph.D.

**Curriculum Development and Educational Scholarship Grant:
Molly Moore, M.D., for a proposal for curriculum development in a Global Health Scholars Track**

Workshops & Events

September, 2016: Essentials of Teaching and Assessment One-Day Course

A one-day, intensive course to introduce participants to the pedagogy, strategies, and resources for effective teaching and assessment.

November, 2016: Medical Education Research Retreat

A small, hands-on retreat focused on the following topics: searching the literature, selecting a conceptual framework, survey design principles, and preparing to meet with the statistician.

January, 2017: Snow Season Education Retreat

The retreat included a reception, poster session, and dinner with induction of new members. Breakout sessions focused on topics such as active learning, resident remediation, addressing difficult conversations across cultural divides, research, and more.

Annual Highlights

Educator Development Program

Nine faculty from a range of disciplines participated in the Educator Development Program, a cohort-style program focused on teaching across the medical education continuum. Participants develop a scholarly project in education suitable for presentation and publication.

Mentoring Groups

Two new subjects have been added to the roster of Mentoring Groups: Teaching for Active Learning, and Teaching in Clinical Settings. Additional mentoring groups focus on Leadership; Wellbeing; Reappointment, Promotion and Tenure and Career Development; and Educational Scholarship.

Medical Education Grand Rounds

October 12, 2016

"Using Brain Bandwidth Effectively: Cognitive Load Theory and Instructional Design," Stephen Breneman, M.D., Ph.D., George W. Merck Dean's Teaching Fellow, Associate Professor of Anesthesiology, University of Rochester School of Medicine & Dentistry

December 2, 2016

"Students with Disabilities in Medical School: Examining National Trends and Best Practices," Lisa Meeks, Ph.D., As-

sistant Professor of Medicine, & Director, Medical Student Disability Services, University of California, San Francisco School of Medicine, and Jean Haverstick, M.Ed., Accessibility Specialist, Student Accessibility Services, University of Vermont

February 2, 2017

"Mental Health of Medical Students in the Preclinical years: Challenges and Opportunities," Stuart Slavin, M.D., M.Ed., Associate Dean for Curriculum and Professor of Pediatrics, Saint Louis University School of Medicine

March 24, 2017

"Providing Effective Feedback: Increasing Acceptance and Use," S. Elizabeth Ames, M.D., Residency Program Director, Associate Professor of Orthopaedics and Rehabilitation, Larner College of Medicine

May 19, 2017

"Residency Letter Writing Workshop," Christa Zehle, M.D., Associate Dean for Students, Associate Professor of Pediatrics; Elise Everett, M.D., Associate Professor of Gynecologic Oncology, Vice Chair for Education; Julie A. Lahiri, M.D., Associate Professor of Vascular Surgery, Program Director General Surgery Residency, Larner College of Medicine



Selected Publications and Presentations

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Muller, I.R., Eldakar-Hein, S.T., Ames, S.E., Rosen, L.D., Urman, R.D., Tsai, M.H. Potential Association Between Physician Burnout Rates and Operating Margins: Specialty-Specific Analysis. *Medical Practice Management*. In press. 2016.

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