2025 Annual Report

Our Impact

UCONN
SCHOOL OF MEDICINE

114
New medical students in the Class of 2029

From the Dean of the School of Medicine

Since 1972, we've trained:

7,000+
residents and fellows

4,297
physicians

2,000+
scientists and public health experts

To learn more about giving a gift to the School of Medicine, email supportuchc@foundation.uconn.edu.

Dear Friends of UConn,

Every day the UConn School of Medicine and its people are making a strong, everlasting impact upon the world and the lives of other human beings: our patients; our Connecticut citizens and communities; and our students, residents, fellows, and trainees.

We also are unwavering in our support of one another in our close-knit UConn family and are proud to have created a welcoming work and learning environment with opportunity for everyone to find success at UConn.

More than **30%** of graduating students and residents stay in Connecticut.

The year 2025 has been an incredibly exciting one for our UConn medical school family. We experienced a thrilling Match Day, our largest ever, with 111 graduating students entering competitive residency programs at UConn, in Connecticut, and across the nation. On that day, a record 19 female medical students matched to the often male-dominated surgery specialty fields. Once again, many of our graduates chose to remain in Connecticut for residency, including dozens at UConn, with over 30 percent staying in state. We also welcomed 114 new medical students in the class of 2029, selected from more than 5,400 applicants.

As always, our UConn doctors, scientists, and public health experts are pushing the boundaries of academics, medicine, and research. They are changing lives every day by training and inspiring the next generation of the health care workforce and making immediate, real-world impacts through cutting-edge human clinical trials and innovative research advancements.

Plus, our faculty, staff, and students are always finding new ways to mentor and give back to our community through public service, educating citizens, protecting public health, and improving people's quality of life.

Because of UConn's medical school, this year advances have been made to better understand and treat autism, colon cancer, ALS, Alzheimer's, sickle cell disease, obesity, blindness, and youth drug addiction. It is where compassion meets innovation.

This and so much more makes me so proud to be reappointed once again this year as your dean for a third five-year term — and to be a UConn Husky.

Enjoy reading more about our impact. Want to be part of it? Consider getting involved in the University's historic $1.5 billion Because of UConn campaign. Learn more at **foundation.uconn.edu/get-involved**.

Sincerely,

Bruce T. Liang

Bruce T. Liang, MD
Dean, UConn School of Medicine
somdean@uchc.edu

The Future of Medicine

"In your faces today, I see the future of health care in Connecticut and beyond," commencement speaker Dr. Manisha Juthani, Connecticut Department of Public Health (DPH) Commissioner, told Class of 2025 graduates. "You've been trained to be healers, scientists, and advocates who see the whole person, the whole community. Remember the patient whose pain you relieved, the research breakthrough that expanded knowledge, the community health initiative that improved lives."

I'm Going to UConn!

Returning Home

"I'm going to UConn! I'm going to UConn!" exclaimed Patrick Bogui '25 MD on National Match Day. Bogui, of Englewood, New Jersey, is thrilled to be staying at UConn for his emergency medicine residency training. "There's a sense of pride that comes with being a Husky. I'm beyond excited," he said. "Building on the foundation of knowledge that UConn gave me is truly thrilling." Bogui was inspired at an early age to become a doctor after losing his grandfather too soon. "This experience led me to decide I wanted to be in a position to care for another eighth grader's grandfather in the future."

Doctors Academy Inspires Local Students

Last May, 19 high school seniors graduated from the Senior Doctor Academy of the Health Career Opportunity Programs (HCOP) founded over two decades ago by Dr. Marja Hurley. HCOP educates middle and high school students of all backgrounds in the health sciences and provides career path mentorship.

Connecticut Grown Pediatricians

"Working with kids is so rewarding," says Katherine Phillips '25 MD, whose pediatric residency training is now underway at longtime UConn affiliate Connecticut Children's. The former medical scribe from Redding, Connecticut, says: "What drives me as a pediatric care provider is to create a safe and welcoming space for growing and developing kids. Pediatrics makes an impact."

After her supportive experience in medical school, Phillips is excited to stay at UConn for her residency. "UConn's pediatric faculty and clinicians at Connecticut Children's are some of the most enthusiastic teachers I have ever had. They inspire the next generation of doctors, medical students, and residents every day."

Javel Stewart

"I am looking forward to pursuing a career in genetics and surgery," says graduate Javel Stewart, 18, of Hartford, now a first-year student at UConn in Storrs. "The idea of being able to help people fight illness and disease inspired me to enter medicine. I am very excited to have received scholarships to UConn."

Jeneika Lugg

"One of the most meaningful communities I'm a part of is the Health Career Opportunity Programs. It feels like a family. It is a welcoming environment," says Jeneika Lugg, 18, of Hartford. Lugg received many college scholarships including the Hartford Promise Scholarship. She plans to study biological sciences or neuroscience, while exploring her love of art. "No dream is too big to reach," says Lugg, who is in her first year at UConn Hartford. "I'm very excited to go to UConn."

UConn Champions

More Women Surgeons

A record number of female UConn medical students matched into future surgery careers in 2025. Nineteen female fourth-years chose to enter the surgery-heavy fields of general surgery, orthopaedics, ophthalmology, ENT, and OB/GYN, matching into competitive residency training programs at UConn and across the country.

Desiree Dear ’18 BS, ’25 MD of Bethel, Connecticut, is thrilled to be at UConn for ENT residency. “UConn is such a family. We are very diverse, and UConn trains and shows us the diverse fields of medicine too,” says Dear. “UConn always has a focus on increasing female representation. Seeing all these women entering diverse fields of surgical specialties is inspiring. I hope it continues to inspire future medical school classes.”

Kyanna Alleyne ’25 MD from West Hartford, Connecticut, is in UConn orthopaedic surgery residency training. “I’m so excited to stay at UConn and in Connecticut. My whole family being here is a bonus. I knew I wanted to be at UConn,” says Alleyne, who is proud to see so many of her fellow female classmates choosing the often male-dominated surgery fields. “It’s amazing. We do a lot of work at UConn to get more girls and women interested in surgery careers.”

Elite Neurosurgery Residency and its Residents Thriving

“We owe it to our patients to give them the very best of ourselves as surgeons every time.”

—Dr. Taylor Burch

Black female neurosurgeons are rare — so rare that they make up only 0.6% of neurosurgeons. But that statistic isn’t stopping fourth-year UConn resident Dr. Taylor Burch from conquering her dream of becoming a skull-base and cerebrovascular surgeon caring for such conditions as aneurysms, brain tumors, and strokes.

Burch and her fellow neurosurgery residents, just like their UConn residency program, are at the top of their game. The residency is among only 2% of training programs at hospitals nationwide. It was established in 2020 by now Chair of the Department of Neurosurgery Dr. Ketan R. Bulsara. During his tenure, UConn has successfully matched more medical students into neurosurgery residencies than in any of the previous decades combined.

Always up for a challenge, Burch, a former competitive, nationally ranked junior tennis player, says of the program director, “Dr. Bulsara doesn’t put any limits on our aspirations. He has created a very unique, amazing educational program for neurosurgery residents that is one-of-a-kind, hands-on surgically, with ample high-tech simulation training, and hours of protected didactics by faculty members. UConn’s neurosurgeons are truly dedicated to trainee education and mentorship.”

“It’s a privilege to be trusted by our patients to participate in their care,” concludes Burch, who trains at UConn John Dempsey Hospital, Hartford Hospital, and Connecticut Children’s. “We owe it to our patients to give them the very best of ourselves as surgeons every time.”

Externship Program Students Match to UConn

Fourth-year surgical resident Dr. Edison Martinez Monegro of San Juan, Puerto Rico, was just the second Visiting Externship for Students Underrepresented in Medicine (VESUM) program medical student to match to a UConn residency and the first to match to surgery. He credits his success to the growing VESUM program and its strong mentorship. More than 60 students have visited UConn for clinical externship experiences over the past nine years, with 12 successfully matched to a UConn residency program.

Founded and directed by Dr. Linda Barry, VESUM offers externships to fourth-year medical students. Open to all students, it gives participants an insider's view into various medical specialty fields and UConn Health before they choose residency programs to rank. "The VESUM program really prepared me for my residency. I made the right choice of coming to UConn," Martinez Monegro says. "Surgery residency is hard. You want the people around you to help you and make you feel at home. UConn does that. Dr. Barry has been amazing." He adds, "Hartford's population is 40 percent Puerto Rican. I want to be able to practice medicine in a place where I can serve my people and speak my language of Spanish while at work." Martinez Monegro applauds UConn for building the future health care workforce. "We have residents of all different backgrounds in our residency programs."

UConn is among the nation's largest sponsors of residency programs ranking by size in the top 10 percent.

Mentorship Matters:

White House Honors Dr. Linda Barry

> **"Surgery residency is hard. You want the people around you to help you and make you feel at home. UConn does that. Dr. Barry has been amazing."**
>
> —Dr. Edison Martinez Monegro

The National Science Foundation Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring, the nation's highest honor that mentors can receive, was awarded to Dr. Linda Barry, professor in the departments of Surgery and Public Health Sciences; associate director of the UConn Health Disparities Institute; and associate dean of the Office of Multicultural and Community Affairs. "This award recognizes the great mentorship work we are doing at UConn School of Medicine," says Barry. "It is a profound acknowledgment of the time and effort we invest in our mentees to succeed."

For over 15 years, Barry has taught and mentored students at UConn and has created several successful programs including VESUM and the Women in Surgery Interest Group. Over three decades, she has encouraged more than 400 students to pursue science careers and mentored numerous women medical students interested in surgical careers.

Barry concludes, "Any child interested in medicine and science should be able to pursue their dreams. Mentorship can be key to putting them on the right path and providing access to transformative opportunities."

“Our biggest hope is to improve the quality of life for these kids like Fiona.”

—Jackie Vanderhoof

Meet Fiona

She may be little, but Fiona Vanderhoof of Philadelphia is making a big difference in the futures of those with autism spectrum disorders. Her donated cell lines are helping UConn neuroscientist Dr. Eric Levine advance innovative scientific research into a potential autism gene therapy.

Fiona has profound autism linked to Dup15q syndrome. The genetic disorder caused by an extra piece of the fifteenth chromosome leads to significant developmental delays including limited verbal and language comprehension skills.

“I made cell lines and had them shipped to UConn for research after contacting Dr. Levine’s lab,” says Fiona’s mom, Jackie. “Thanks to Fiona’s shared cells, we’re so close to finding a new genetic therapeutic to help her and others with autism.

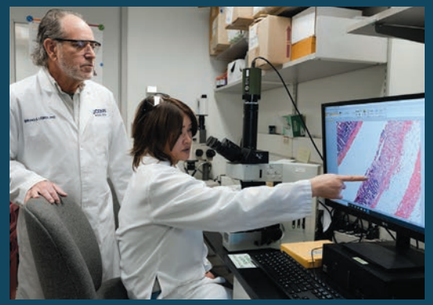
“I’m so glad they are putting her cells to good use! Anything we can do to help autism,” Jackie Vanderhoof says. “Our biggest hope is to improve the quality of life for these kids like Fiona.”

Levine’s novel NIH-funded research is now supported by the Eagles Autism Foundation. In the lab, he is reprogramming the donated skin or blood cells of patients like Fiona into brain cells that exactly mirror each patient’s genomics for further study.

“This is really unique, personalized medicine. We can analyze the physical structure of their neurons, measure intracellular calcium dynamics, and record functional electrical activity,” says Levine. “Our focus at UConn is identifying novel targets for drug discovery and gene therapy for treating individuals with autism spectrum disorders and related syndromes. It is a very exciting time for autism research with real, tangible progress and results.”

WANT TO LOWER YOUR RISK FOR COLON CANCER?

Eat Walnuts



Rosenberg and Nakanishi discovered that the plant-derived polyphenol compound, pedunculagin, in walnuts is metabolized into anti-inflammatory urolithin molecules that can affect cancer cells and improve colon polyp health.

Walnuts improve systemic inflammation while also reducing colon cancer risk, UConn researchers report in the April 2025 issue of Cancer Prevention Research.

“Ellagitannins in the walnut are providing the necessary precursors to form a group of anti-inflammatory and anti-cancer molecules directly within the colon, an outcome that we are seeing in our patients enrolled in a clinical prevention trial. The ability of the gut microbiome to convert walnut-derived ellagitannins into potent anti-inflammatory agents, such as urolithin A, is quite remarkable,” says Daniel W. Rosenberg, Ph.D., the HealthNet Chair in Cancer Biology in the Center for Molecular Oncology, who works with a multidisciplinary research team.

The findings build upon over a decade of research by Rosenberg and the earlier work of Dr. Masako Nakanishi in his lab, who showed that walnuts had beneficial and anti-cancer effects in the colons of cancer-prone mice.

Rosenberg concludes, “Our study provides strong rationale for dietary inclusion of walnut ellagitannins for reduced inflammation and cancer prevention. Nutrients from walnuts can contribute to reduced cancer risk. Grab a handful every day to easily benefit your long-term health.”

New Drug for Bronchiectasis Patients

A global clinical trial spanning five continents and including over 1,700 bronchiectasis patients demonstrated the significant benefits of an investigational, once-a-day pill called brenso-catib as a therapy for the debilitating, chronic lung airway inflammation and infection condition. Results were published in the New England Journal of Medicine by several investigators, including senior study author Dr. Mark Metersky, who served on the global trial's steering committee and was principal investigator for UConn's trial site.

Thanks to UConn's contributions, this August the drug became the first-ever FDA-approved medication for bronchiectasis.

"Patients with bronchiectasis have impaired quality of life," says Metersky, who cares for over 100 patients with the condition as longtime director of the Center for Bronchiectasis Care at UConn Health. "Brensocatib will help many patients living with bronchiectasis. This promising drug resulted in improved quality of life even when patients were not suffering from an exacerbation, providing hope for so many patients suffering with daily symptoms."

PERSONALIZING

Heart Failure Care

Heart failure care should not be one-size-fits-all. UConn Health/JAX cardiovascular physician-scientist Dr. Travis Hinson's Cardiovascular Genetics Program, funded by the National Institutes of Health, bridges his cutting-edge JAX research with patient care to deliver tailored therapies to heart failure patients based on their unique genetic makeup. Hinson's team reprograms each patient's blood or tissue sample into beating cardiac microtissue cells in a lab dish for further study.

Through his research on the most common form of heart failure, dilated cardiomyopathy (DCM), in microtissue models, Hinson has discovered that about 20% of DCM patients carry a gene variant that reduces the heart's supply of titin, a key structural protein. This deficiency undermines the heart's ability to pump efficiently — directly contributing to heart failure.

Hinson's lab has pioneered a CRISPR-based gene therapy to restore titin levels. By using adeno-associated viruses (AAVs) to deliver a gene activator, the therapy reactivates titin production directly in heart cells.

"We're fortunate to be in the golden era of CRISPR," says Hinson, who hopes to launch first-in-human clinical trials within five years. "Our approach restores titin levels by 25% or more and halts disease progression. This therapy addresses a critical unmet need in cardiovascular medicine."

Hinson's high-impact innovation was showcased at UConn Health's inaugural Innovation Catalyst event aimed at attracting commercialization partners.

Dr. Genice Nelson; Caryl Ryan, RN; Dr. Andy Agwunobi; Janel Simpson; Dr. Pramod Srivastava, Dr. Biree Andemariam; and Dr. Bruce T. Liang (UConn Health Photo/Tina Encarnacion).

"Hope is right here, right now at UConn Health."

— Dr. Bruce T. Liang

New England Sickle Cell Institute and Connecticut Bleeding Disorders Center

With the 2025 opening of the New England Sickle Cell Institute and Connecticut Bleeding Disorders Center, sickle cell and blood disorder patients now have a state-of-the-art, 12,840-square-foot outpatient care home at UConn John Dempsey Hospital. The Institute brings the latest innovative care, medications, support services, and clinical trials to its patients all in one space.

"Dedicating a new brick and mortar medical home — a place of healing, a place of nurturing, a place of expertise, a place of guidance, and, honestly, a place of love — will ensure that individuals with sickle cell disease and bleeding disorders will always have a safe place to receive top-notch care into the infinite future, including those not yet born," says Dr. Biree Andemariam, founder and longtime director of the Institute. Founded in 2009, the Institute serves the majority of adult sickle cell patients in the state, while the Bleeding Disorders Center is one of the longest-running specialty clinical programs in the institution's history.

"This Institute opening is a major milestone for us," said Dr. Bruce T. Liang, dean of the School of Medicine. "For patients, and future patients, hope is right here, right now at UConn Health."

1.6+ Million
patient encounters

59,000+
emergency department visits

"Dr. Andemariam is the doctor I have been looking for my whole life."

—Robert Hoyt

Living Life to the Fullest With Hemophilia

Robert Hoyt, 66, of Naugatuck, Connecticut, has long turned to UConn doctors for his blood disorder care. He was first diagnosed with hemophilia A with inhibitors at 9 months old, after hitting his head on his crib. The bleeding just wouldn't stop.

"I have the worst of the worst type of hemophilia. I spent half of my first 11 years of life in the hospital. Back then there were no good treatments. But I survived," he shares. "At about 40 years of age I needed a knee replacement, but another center wouldn't do the operation due to its dangers. So, I went to UConn and Dr. Andemariam and the care team guided me through."

The procedure was so successful, he had his second knee replaced. And thanks to Andemariam's care management, Hoyt was the first hemophilia patient in the nation to have a mitral valve clip repair, at Mount Sinai Hospital.

"Dr. Andemariam is the doctor I have been looking for my whole life," he says. "I want to live life to the fullest; to do that you need to take chances. The Institute's care has allowed me to do that! UConn Health is really on the cutting-edge of helping the bleeding disorder community."

Hoyt concludes, "We will see generations of patients succeed at this new clinic."

17,000+
hospital discharges

14,000+
surgeries performed

TRAVELING THE WORLD WITH

Sickle Cell Disease

"UConn Health keeps me going," says world traveler Sola Odesina, 39, of New Britain, Connecticut. While living with the painful red-blood cell condition sickle cell anemia, she's traveled the globe, from Costa Rica to the Maldives, thanks to the excellent care she receives from the experts at the New England Sickle Cell Institute.

Odesina has traveled to over 30 countries. From Australia to her latest trips to Abu Dhabi and Austria, before each trip, she consults with her care team to make a backup care plan in her destination country.

"The sickle cell team at UConn Health is amazing. I am grateful to Dr. Biree Andemariam for creating the New England Sickle Cell Institute," says Odesina. "I don't want to be bogged down by my disease. I am an avid traveler and I hope to see every country in the world.

"We are people and we matter," she adds of sickle cell patients. "And we have a voice! UConn Health's New England Sickle Cell Institute enables us to live a life that is full and that's worth living."

"I don't want to be bogged down by my disease. I am an avid traveler."

—Sola Odesina

Against All Odds:

PATIENT PURSUES GOAL OF BECOMING A PILOT AFTER OVERCOMING RARE ‘SUICIDE DISEASE’

From UConn to Delta Air Lines, Rafael Azevedo of Brazil has found help and hope. He traveled the world for nearly a decade and finally found in Connecticut a surgical cure for a rare condition that caused him to suffer daily from severe facial and ear pain. After successful advanced, complex brain surgery at UConn John Dempsey Hospital with Dr. Ketan Bulsara and Dr. Daniel Roberts, Azevedo is closer to making his dream of becoming a pilot a reality.

After learning that Azevedo hoped to become a pilot, Delta Air Lines invited him to their headquarters in Atlanta. He visited their largest technical operations center in North America and had the exciting opportunity to operate B737 and A320 airplane flight simulators.

Azevedo says his dream of flying saved his life, and he hopes his dream takes him even higher. “Today I am being reborn. It’s a miracle to be here today,” he said after the experience. “It’s God giving me a second chance. I want to thank everyone for welcoming me with so much love here at Delta.

“Dr. Daniel Roberts and Dr. Ketan Bulsara at UConn Health were always very confident that my surgery was a success. They were very excited when I told them I would be coming to Delta Air Lines.”

Calhoun Cardiology Center's New Leader

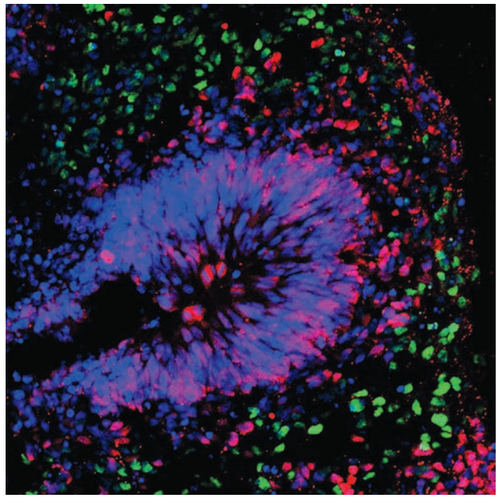
Following in Dr. Bruce T. Liang's footsteps is Dr. Christoper Pickett, associate professor of medicine, as the next director of the Pat and Jim Calhoun Cardiology Center. As interim director and clinical chief for the last three years, he has grown the Calhoun Center's faculty while advancing its innovation and quality care. Pickett first joined UConn faculty in 2008, co-establishing with Dr. Heiko Schmitt a now thriving cardiac electrophysiology program for the management of arrhythmias such as atrial fibrillation, ablation of complex atrial and ventricular arrhythmias, and implantation of cardiac devices such as defibrillators and pacemakers, with a focus on physiologic pacing techniques. Committed to academic medicine excellence, he is also a dedicated mentor and educator of the next generation of cardiologists studying as medical students, residents, and fellows.

Free Stem Cell Medicine Course Educating the World

A first-of-its-kind, free, open-access stem cell medicine continuing education course, "Stem Cell Medicine: From Scientific Research to Patient Care," has launched internationally in six languages. The course was developed by the Education Committee of the International Society of Stem Cell Research (ISSCR), for which Dr. Jaime Imitola serves as vice chair. Imitola is a professor of neurology and vice chair of research in the UConn Health Division of Multiple Sclerosis and Translational Neuroimmunology.

The course, produced and accredited by Harvard Medical School, provides critical education on the rapidly evolving stem cell medicine field and aims to protect patients from the potential physical and financial harms associated with the growing popularity of unproven stem cell tourism clinics.

"Stem cell medicine is here to stay, and soon stem cell therapy will be established, so we need to educate all providers and medical students on this promising frontier of medicine to help the general public too," says Imitola, a Harvard-trained stem cell scientist. He has extensively researched the negative impact of stem cell tourism. "This is an important paradigm shift in medical education. This course will help clinicians and medical students guide their patients more effectively and ensure patients are making informed health decisions."



Imitola's innovative research uses 3D tissue of brain organoids created from induced pluripotent stem cells derived from human fibroblasts or blood cells. Inside the tissue, layers of neuronal cells (green CTIP2 markers) and stem cells (red SOX2markers) model neurological diseases for study in the Imitola Lab.

How Long Will You Live — Healthily?

Exciting study findings published in the Proceedings of the National Academy of Sciences (PNAS) show a new blood-based proteomic signature test can predict how long you are likely to live in good health, a measure known as health span. The Healthspan Proteomic Score (HPS) was developed by UConn School of Medicine researchers with collaborators at the University of Helsinki and the University of Exeter. Using proteomic data from over 53,000 UK Biobank participants, the research team identified a panel of proteins that collectively signal a person's biological health. The score may provide a powerful tool for understanding biological aging and assessing a wide range of chronic disease risks.

"Our findings underscore the importance of shifting the focus from lifespan to health span," said Dr. Chia-Ling Kuo, lead author and associate professor of public health sciences at The Cato T. Laurencin Institute for Regenerative Engineering. "The HPS captures early biological changes in the body and may help inform interventions that promote healthier aging."

"The HPS captures early biological changes in the body and may help inform interventions that promote healthier aging."

—Dr. Chia-Ling Kuo

The study was supported by the Pepper Older Americans Independence Center at UConn. Co-authors are Dr. George Kuchel, director, and Dr. Richard H. Fortinsky of the UConn Center on Aging and senior author Dr. Breno S. Diniz, associate professor of psychiatry.

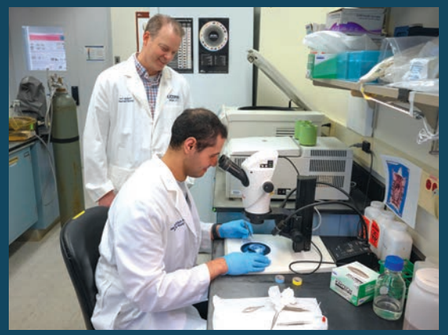
The Healthspan Proteomic Score (HPS) is derived from chronological age and the expression levels of 86 proteins. It is a strong predictor of disease and mortality risk. The "biological clock" representation hints that proteins inform the HPS, which can inform our health span. Above, the clock's hand is a 3D rendering of growth/differentiation factor 15 (GDF15), a protein predictor of health span.

Image credit: Bernard L. Cook III, Ph.D., who conceptualized, illustrated, and composed the final image, and Illustrate, the software used to render GDF15 (Goodsell DS, Autin L, Olson AJ (2019) Illustrate: Software for Biomolecular Illustration. Structure 27, 1716-1720).

Reimagining

101+ Million
in research funding including $47.2 million from the National Institutes of Health

Breakthrough Clue Uncovered for Alzheimer's and ALS



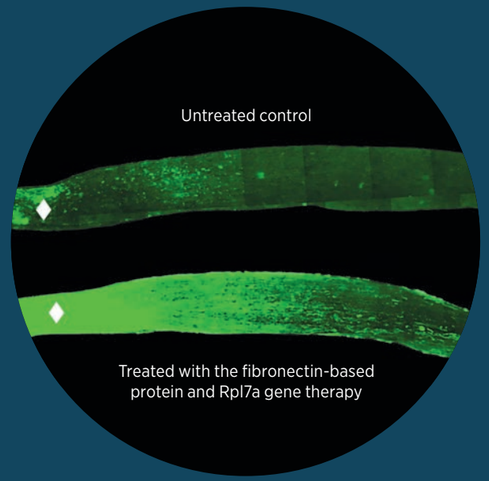
In Nature Neuroscience, researchers revealed a new scientific clue about what leads to devastating neurodegenerative diseases like Alzheimer's disease, amyotrophic lateral sclerosis (ALS), and frontotemporal degeneration (FTD). Findings showed for the first time how vascular dysfunction contributes to these diseases.

The blood-brain barrier shields the brain from circulating factors that could cause inflammation and dysfunction. Endothelial cells — the inner lining of blood vessels — are its principal component. To learn more, researchers developed an innovative approach to enriching endothelial cells, which are challenging to study, from frozen tissues stored in a large NIH-sponsored biobank. For the first time ever in human tissue, they applied inCITE-seq, a cutting-edge method directly measuring protein-level signaling responses in single cells. This technological breakthrough led to the striking discovery: Endothelial cells from these three different neurodegenerative diseases share fundamental similarities that set them apart from the endothelium in healthy aging. A key finding was the depletion of TDP-43, an RNA-binding protein genetically linked to ALS and FTD and commonly disrupted in Alzheimer's. Parallel study findings published by the team in Science Advances demonstrated TDP-43's functional importance in maintaining the blood-brain barrier.

Researchers showed for the first time that endothelial cells actively shape disease progression. Now, researchers hope to develop new blood biomarker tests and to target endothelial cell dysfunction with therapeutics to prevent disease progression in patients. Lead author of the study was Omar Moustafa Fathy, an MD/Ph.D. candidate in the Center for Vascular Biology working with senior author Dr. Patrick A. Murphy, interim director of the Center for Vascular Biology, in collaboration with Riqiang Yan, Ph.D., a leading Alzheimer's disease expert.

ALZHEIMER'S DISEASE RESEARCH

Thanks to UConn, Alzheimer's disease research is going through a paradigm shift. Contrary to the dogma that the characteristic plaques in the brains of Alzheimer's patients are derived from a type of brain cell called neurons, researchers are providing compelling evidence that the field should carefully look at an entirely different kind of cell: oligodendrocytes. Oligodendrocytes are a group of cells found throughout the central nervous system. They are often thought of as providing insulation to the nerves that wire the nervous system. They are recognized as critical in multiple sclerosis, traumatic brain injuries, Parkinson's disease, and other brain conditions, but are hardly studied in the context of Alzheimer's disease. Professor and chair of neuroscience Riqiang Yan, Ph.D.; associate professor of neuroscience Xiangyou Hu, Ph.D.; first author Akihiro Ishii, Ph.D.; and colleagues are collecting data on oligodendrocytes and using a big data approach to identify new gene targets for understanding Alzheimer's pathogenesis and therapy. They believe oligodendrocytes are involved in the earliest stages of Alzheimer's, before symptoms become obvious. Their work could reveal key points in the disease process and potentially lead to new, more effective therapies.



OPTIC NERVE

Regrowth in Sight

UConn researchers have discovered a potential treatment for common causes of blindness. Lost vision from blunt trauma or glaucoma is usually permanent, as severed optic nerves do not grow back. But in the journal Experimental Neurology, researchers showed that injured optic nerves in mice can regrow successfully toward the brain with a new treatment. The findings by neuroscientist Ephraim Trakhtenberg, Ph.D., and members of his lab are spreading hope that optic nerve damage can be reversed. Using an engineered injectable peptide — a small piece of a larger protein — the team managed to get severed optic nerves of mice to regrow from the damaged area all the way to the optic chiasm in the brain. The optic chiasm senses light and controls daily body rhythms. It is the first place in the brain the optic nerve touches. It took the severed nerves about six weeks to regrow to the optic chiasm. Trakhtenberg Lab imaging captures the dramatic, robust regrowth of the optic nerve tissue glowing green throughout the length of the optic nerve thanks to the use of engineered fibronectin-based peptide to encourage the regrowth of optic nerve cells. The best growth results also had been boosted with a gene therapy. “One of the highlights is that the peptide is a piece of protein. You can inject it. That gives it a therapeutic potential” for clinical trials as a treatment, Trakhtenberg says. This research is supported by the National Institutes of Health National Eye Institute.

BLOCKING

Cancer Cells

FROM SPREADING

Immune checkpoint blockade medications have revolutionized cancer treatment, giving patients and providers new hope to control and sometimes cure metastatic cancer. However, predicting which patients will benefit from this expensive and sometimes toxic, but potentially lifesaving, class of medications has been a challenge. Now, Dr. Margaret Callahan, chief of the Division of Hematology/Oncology at the Neag Comprehensive Cancer Center, and co-researchers show in Science Translational Medicine how a new mechanistic understanding of a specific immunotherapy combination may help guide future treatment decisions to match the right patient with the right therapy for them.

The research team first demonstrated that a combination of immune checkpoint-blocking antibodies, anti-PD-1 plus anti-LAG-3, can effectively influence a specific population of immune cells called regulatory T cells, known as Tregs, to make them less able to regulate the immune system. Then, a large clinical trial of metastatic melanoma patients receiving the drug combination of anti-PD-1 plus anti-LAG-3 also benefitted from the combination therapy and experienced the same changes in their Tregs. Callahan says, “Together, our laboratory and human studies both show Tregs play a key, beneficial role for this drug combination and may serve as a biomarker to identify which patients will respond optimally.”

Developing the Next Generation of Weight Loss Drugs

It’s been 30 years since Dr. Se-Jin Lee first discovered the protein that regulates muscle growth called myostatin. Later, Lee showed that knocking out myostatin increased muscle growth while reducing body fat. Fast forward: Clinical trial research efforts are now underway to target the protein, its related protein activin A, or their receptors to develop new, healthier muscle-preserving myostatin inhibitor obesity drugs. This renewed interest in targeting myostatin for obesity coincides with the tremendous success of GLP-1 (glucagon-like peptide-1) obesity drugs, which come with the side effect of up to 40% of weight loss being loss of muscle, not fat. When patients regain weight, it’s fat rather than muscle.

Together, Lee, Presidential Distinguished Professor at UConn School of Medicine and professor at The Jackson Laboratory, and Dr. Emily Germain-Lee, professor at the School of Medicine who is jointly appointed at Connecticut Children’s, are further co-investigating the potential for creating healthier weight loss drug options. In their labs, they are examining the possibility of developing myostatin inhibitors as future obesity drugs that can also preserve muscle to offer obese patients a healthier, muscle-sparing weight loss drug, or a drug combination option with fewer side effects.

Fighting Cancer From Space

UConn engineer Yupeng Chen, Ph.D., has been successfully growing an unusually rod-shaped nanoparticle, called a Janus base nanotube, on the International Space Station thanks to its low-gravity environment. The game-changing, super-skinny Janus base nanoparticles can slip into the cracks and attack cancerous tumors from the inside and even pass through the tiny windows between cells in the kidneys or joint cartilage.

Chen's success has led to a new $1.9 million award from the Center for Advancement of Science in Space and NASA's Division of Biological and Physical Sciences. With it, Chen and his School of Medicine colleague, immunologist Kepeng Wang, are using the space station's unique environment to grow Janus base nanotubes that can also carry interleukin-12, a protein already produced naturally by the human body, but only in small quantities. It stimulates helper T-cells, which recruit other parts of the immune system to kill invaders and cancer cells. Many tiny, emerging cancers are killed off by our body's interleukin-12 response. Dr. Susan Tannenbaum of the Neag Comprehensive Cancer Center has also lent her clinical expertise to the research team.

Chen's lab is working with Eascra Biotech, a UConn spinoff company he and his business partner Mari Anne Snow founded, to commercialize the Janus nanotube manufacturing technique. They are also collaborating with Axiom Space, a private company.

Helping Teens

BOUNCE BACK FROM ADDICTION

Clinical child and adolescent psychologist Sarah Feldstein Ewing, Ph.D., is a new tenured professor and vice chair for research in the Department of Psychiatry. She has long been interested in the intrinsic strengths of adolescents during this unique developmental period and how those strengths can be harnessed to improve adolescent addiction treatment.

In her own young adult years, Feldstein Ewing shared the common experience of watching childhood peers take one of two paths — prosocial success vs. substance use struggles. Feldstein Ewing is now using novel brain imaging techniques to study therapy's effectiveness in adolescents undergoing addiction treatment to see how their brains change during therapy. Her findings to date suggest that adolescents' brains are strikingly different than adults', to the point that it merits the creation and development of totally new criteria for clinical metrics of substance-related problems in this age group, along with adjoining new ways to define, measure, and treat these teen behaviors.

In the next phase of her research, Feldstein Ewing is looking to evaluate unique, out-of-the-box behavioral interventions, such as the one she has created from her adolescent brain findings called "ADAPT: Adolescent Developmentally Appropriate health Promotion Therapy," which maximizes the gifts of the adolescent brain to reduce risk and enrich resilience.

Using her MRI approaches, she is also exploring the efficacy of widely used behavioral interventions for addiction, such as group motivational interviewing.

"Historically, it's been thought that teens are all doom and gloom, and that they're never going to get better," she says. But Feldstein Ewing believes since teens are "very naturally socially gifted," peer-to-peer interactions in group therapy may be even more effective for this age group than for adults. "We're trying to figure out how to harness and enhance some of these natural gifts. How can we get people back to their best selves?"

"In Connecticut, there are now 1,000 fatal overdoses a year."

—Dr. Yifrah Kaminer

Stopping Youth Drug Addiction

"In Connecticut, there are now 1,000 fatal overdoses a year. Drugs are killing more people than car crashes, suicide, and homicide combined," says child and adolescent psychiatrist Dr. Yifrah Kaminer, Professor Emeritus of Psychiatry and Pediatrics.

Kaminer has done the first studies investigating fatal drug overdose trends in youth and young adults with synthetic opioids like fentanyl and shows a growing number of fatal drug overdoses are actually intentional. He has been co-investigating this public health threat with the state's Chief Medical Examiner Dr. James Gill.

In Connecticut, fentanyl overdose is to blame for 80% of death certificates for young adults 18 to 44. Kaminer says,"We need to extend services; we need more clinical research and larger studies."

Kaminer and UConn School of Medicine are collaborating with Massachusetts General Hospital and Harvard University for a federally funded study treating young people ages 14 to 21 with substance abuse disorder with outpatient treatment and psychotherapy. "Our study is a win-win, offering high-quality treatment free of charge to youth in need, whether in person or virtually," Kaminer says. "We need to remove the stigma of drug addiction. It is a health disorder, and we need to deal with it and make it a top priority to get more people, especially our young people, the help they need now and to save their lives."

Solving Hunger

The first-ever UConn Hunger Symposium was hosted in the Academic Rotunda in April 2025, with U.S. Rep. Jahana Hayes speaking about the vital importance of nutrition access in Connecticut. "Food is a basic need," Hayes said. "Hunger is a policy choice, that is something we can solve for. This one is actually one we can fix. We need to ensure food is getting to people."

At the event UConn was applauded for its dedication to having Husky Harvest food pantries on each of its seven campuses. Hayes toured the Husky Harvest pantry founded in 2023 at UConn Health by UConn School of Medicine staffer Suzanne Tate and student volunteers after a survey showed that even 30% of its students may struggle at times with food insecurity. "Our students are taught as part of their four-year curriculum about the vital importance healthy food plays on one's health," said Dr. Bruce T. Liang, dean of UConn School of Medicine.

Keeping Air in Connecticut Classrooms Safe

The successful cross-campus UConn Indoor Air Quality Initiative is deploying its effective and inexpensive build-it-yourself air filter technology to public school classrooms and schools across the state at no cost to the schools. This work is made possible thanks to the awarding of $11.5 million in state support to UConn School of Medicine for the distribution of materials with STEM education plans for the DIY Corsi-Rosenthal air filter devices.

The State Bond Commission in Connecticut approved the funding for UConn to purchase equipment and materials to construct and install air purifiers in individual classrooms as part of SAFE-CT (Supplemental Air Filtration for Education) under the Clean Air Equity Response Program.

"Thank you to the governor, lieutenant governor, and general assembly for putting the health of our students and teachers first. We are pleased to offer these inexpensive devices to all classrooms across Connecticut," says Marina Creed, APRN, director of the initiative. "When schools, students, and teachers run one of these inside their classrooms, it will reduce their exposure to viruses and bacteria, reducing the risk of disease transmission, and they are less likely to get sick."

The devices are built in 30 minutes with just $60 of hardware store materials. Joint testing by the U.S. Environmental Protection Agency and UConn showed that in just 60 minutes, the air purifiers effectively remove over 99% of airborne viruses including the virus that causes COVID-19. Research findings also show that they work better than expensive commercial HEPA air cleaners.

MUSIC AND MEDICINE BRINGS

Belonging

The new year was ushered in by the debut of the Orchestra of UConn Health — cheekily known as OUCH! — formed by the chair of the Department of Medicine Dr. Francesco Celi and by the chair of the Department of Anesthesiology Dr. Howard Gutstein. OUCH! includes a few dozen musically inclined members of the faculty, staff, and student body. Their first free concert played to a full house of 300 people at UConn Health's Keller Auditorium, featuring the music of Fauré, Mozart, and Corelli, as well as a selection of holiday tunes. In May OUCH! performed a spring/graduation celebration concert, and in August played during the School of Medicine's convocation ceremony welcoming the class of 2029.

"I just connected the many talented musicians I knew were hidden somewhere in our community. I am truly overwhelmed and full of joy and gratitude. Seeing so many colleagues, students, and members of the community attending the concert and having a great time was truly amazing," Celi, a violinist, says. "For us, playing together is truly healing. We all have very demanding and stressful jobs, and for many of us, participation in this activity is very important. The smiles that I see every time we play together tell me we are doing a good thing. We are looking forward to many more concerts and events."

SHINING EXAMPLE OF

Excellence at UConn

At commencement the UConn Health Board of Directors recognized world-renowned neurosurgeon Dr. Ketan Bulsara, inaugural chair of the newly established Department of Neurosurgery, with its annual Faculty Recognition Award.

"Dr. Bulsara's strong leadership, innovative care, impactful research, teaching excellence, and dedication have elevated neurosurgery in Connecticut and at UConn," said Dr. Bruce T. Liang, dean of UConn School of Medicine.

Since joining UConn Health from Yale University in 2017 as chief of what was then the Division of Neurosurgery, Bulsara has driven unprecedented growth across clinical, research, and educational initiatives. He conceptualized the Brain and Spine Institute and partnered with the chairs of neurology, radiology, and orthopedic surgery to build it. He also launched a prestigious neurosurgery residency program that is among the top 2% nationally and helped match more UConn students into neurosurgery residencies than in previous decades. He also fostered a productive research collaboration with The Jackson Laboratory for Genomic Medicine.

"I am humbled and grateful to receive this award. UConn Health is a very special place where the faculty, staff, and leadership are committed to providing care that is second to none while also training the next generation of physicians and transforming health care for the future," says Bulsara. "I am grateful to be a part of this exceptional organization. I sincerely thank the UConn Health Board of Directors for this special honor."

"I am humbled and grateful to receive this award. UConn Health is a very special place."

—Dr. Ketan Bulsara

Giving Back

WITH GRATITUDE

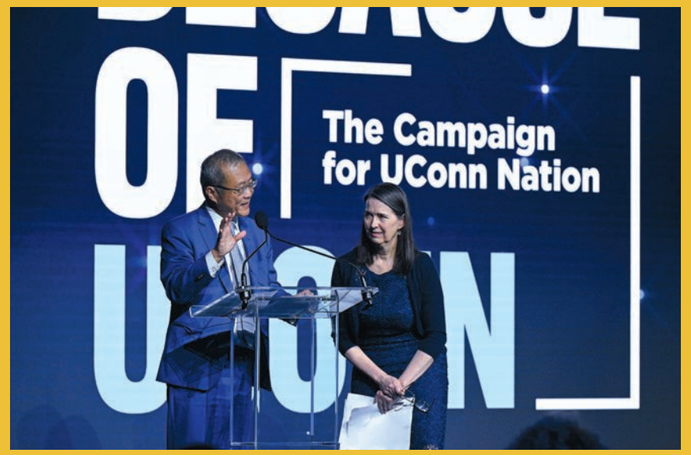
Countless medical school faculty, staff, and students volunteer thousands of hours to give back to the community each year. One of the many heartwarming examples is Chief of Vascular Surgery Dr. Kwame Amankwah teaching Hartford middle school students fun, educational, hands-on lessons about health and medicine at their school and at UConn School of Medicine.

At UConn Health's Virtual Anatomy Lab, one of the first in the nation, a class of sixth-grade boys from Hartford's Covenant Prep used high-tech Anatomage Tables that give a 3D digital, life-size look into what the human body, its anatomy, and its organs look like when healthy and when diseased. During other teaching sessions Amankwah taught the students how to listen to each other's heart and lungs, take a pulse and blood pressure, and even provided simulation training to repair an aneurysm and to suture skin with stitches.

"It's amazing to see the school children so interested in medicine and surgery," Amankwah says. "I am very thankful to be able to interact with these young Hartford students and introduce them to a future career option in medicine for their life. I am so impressed and proud of these successful young men growing up in the city of Hartford." This summer Amankwah also volunteered for Horizons at Westminster School introducing Hartford Public School children to careers in medicine.

UCONN FOUNDATION LAUNCHES $1.5 BILLION

Fundraising Campaign



The ambitious Because of UConn campaign, the largest in University history, is putting UConn students first in a four-pillar mission. The multi-year campaign spans all schools, colleges, campuses, and UConn Health. Dean of the School of Medicine Dr. Bruce T. Liang spoke at the campaign launch event at UConn Avery Point on April 23, 2025, with President Radenka Maric, then Provost Anne D'Alleva, other University leadership, and Gov. Ned Lamont.

"Because of UConn our medical school faculty and researchers are pioneers in their fields bringing the very best to their patients. We are focused on patient outcomes and bringing the latest advances to our patients," said Liang at the event.

Grateful Patient Gifts Medical School $1.5 Million

Donald and Jean Reefe have gifted the School of Medicine $1.5 million for its Pat and Jim Calhoun Cardiology Center to give thanks for the lifesaving heart attack treatment Donald received. The Donald and Jean Reefe Family Fund for Cardiology will support clinical technology, education, and research at the Calhoun Cardiology Center.

"I am very grateful to the Reefes for their support and generosity," says medical school dean Dr. Bruce T. Liang. "I am proud of our cardiologists, providers, and researchers who bring cutting-edge medical advances to benefit our patients."

"We are looking for cures, treatments, and new research for bipolar disorder."

—Dr. Anton Alerte

MEDICAL SCHOOL CONTINUING

Alex's Mission

The late Alexandra Karen Alerte, known as Alex by those who loved her, is remembered for living a life of joy, generosity, and advocacy. Alex was so full of life and always willing to help others, but she also faced many challenges. Diagnosed with Hodgkin lymphoma at age 5, she endured many complications from her childhood treatments, including hearing loss, endometriosis, and bipolar disorder, the latter of which they say took her life in 2022. Alex's mother, Dr. Marie-Claude David, and her brother, Anton Alerte '98 MD, want to help other families avoid a similar tragedy. They established the Alexandra Karen Alerte Memorial Fund to support graduate students at UConn with an interest in psychiatry or psychiatric research.

"We are looking for cures, treatments, and new research," says Alerte, professor of pediatrics. "Bipolar disorder is incredibly difficult to treat and needs to be individualized. Some medications will work on one person but not another because their genetics are different. This is what Alex would want: scientific research that would help alleviate suffering for patients in the future."

Alerte hopes the fund can also bring more attention to bipolar disorder, a condition that is not widely understood. "We need to let people know this isn't something that just happens to other people."

20 Years Riding Coast to Coast

This summer two second-year medical students conquered a once-in-a-lifetime, coast-to-coast bicycle ride in honor of a lifesaving cause: suicide prevention. James Marks, 25, and Zach Giguere, 24, crossed America in 50 days raising over $22,000 to advance national mental health research. They began on the shore of Seattle and ended by dipping their wheels in Long Island Sound in Madison, Connecticut. Their bike trek marked the 20th year that UConn medical and dental students have made the huge bike journey across America for varied health causes. “We believe that investing in suicide prevention — through research, crisis support, and accessible mental health care — can save lives. We are committed to raising awareness, advocating for change, and ensuring that no one feels alone in their struggle,” they say. Suicide prevention is deeply personal to Marks. “I lost my Dad,” Marks says. “I am glad I can do this journey to raise awareness.” Giguere adds, “Our ultimate goal was to raise awareness of suicide and get people to talk about it so we can prevent it.”

“Our ultimate goal was to raise awareness of suicide and get people to talk about it, so we can prevent it.”

—Zach Giguere

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