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UConn School of Medicine Dean's Newsletter, Winter 2011

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*Providing effective care
for the underserved*

Dean's Message



As medical educators, we know that there are some things that can only be taught outside the classroom. This is particularly relevant when students are trying to understand the unique needs and challenges of our most vulnerable patients – those who are homeless, uninsured or struggling with mental illness, substance abuse, physical abuse, and more.

At UConn, programs like the Urban Service Track bring students directly into the world of the underserved and provide insights and training far beyond

the classroom walls. Students learn about cultural and linguistic barriers to care, health care financing, community resources, and much more.

Since 2006, the Urban Service Track has brought together medical students with like-minded peers from the Schools of Dental Medicine, Pharmacy, Nursing, and Allied Health. It is one of a series of initiatives – including pipeline programs and community partnerships – designed to help reduce health care disparities in our community.

I hope you enjoy our feature story on the Urban Service Track program. To learn more about some of the other community-based projects underway at UConn, please do not hesitate to visit my blog at <http://libraryweb.uchc.edu/vp/>.

Sincerely,

Cato T. Laurencin, M.D., Ph.D.
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Research

Researchers Find Compound That Could Disarm Cancer Cells



Health Center cell biologist Joan Caron, Ph.D., has identified a new compound that disarms aggressive metastatic cancer cells in mouse models instead of trying to destroy them.

Caron, assistant professor in the Department of Cell Biology, led a study that rendered malignant cells irreversibly harmless after exposure to the compound methyl sulfone. Caron has a patent pending for methyl sulfone as a drug for this purpose.

“This research confirmed my belief that the transformation of a normal cell into a cancerous cell is not a one-way street; in other words, with this drug I believe we can teach deadly metastatic cancer cells to transform back into healthy, normal cells,” Caron says.

Her co-investigators in the Department of Cell Biology included research assistant Marissa Bannon and medical students Lindsay Rosshirt, Jessica Luis, and Luke Monteagudo. Their findings were published in a recent issue of *PLoS ONE*, an open-access, peer-reviewed journal. ❄

UConn Graduate Student Attends Prestigious Lindau Meeting

Jodi Eipper-Mains, an M.D./Ph.D. student at the School of Medicine, was one of 75 graduate student researchers from the United States chosen to attend the 60th Annual Lindau Meeting of Nobel Laureates and Students in Lindau, Germany.

Since 1951, Nobel Laureates have annually convened in Lindau to have open and informal meetings with students and young researchers from around the world. Eipper-Mains is the first UConn School of Medicine student ever to be chosen to attend the meeting.

"There were 10,000 applicants this year, so I feel very fortunate to have been chosen," says Eipper-Mains, who was nominated by Bill Mohler, Ph.D., associate professor of genetics and developmental biology, and her principal investigator, Brenton Graveley, Ph.D., associate professor of genetics and developmental biology. "It was a great experience and a wonderful opportunity."

Eipper-Mains says her favorite part of the trip was meeting so many interesting students from all over the world, from Nigeria to the Netherlands. Germany had the biggest student delegation, and the U.S. the second-largest. She hopes to stay in touch with many of the students she met.

During the meeting, students attended lectures by the Laureates in the morning, and in the afternoon and evening participated in small-group discussions with them on the topics of chemistry, physics, and physiology/medicine.

Two of her favorite speakers were Roger Tsien, Ph.D., a 2008 Nobel Prize winner in chemistry, and Oliver Smithies, Ph.D., a 2007 Nobel Prize winner in physiology/medicine. "Roger Tsien was a dynamic speaker – his energy on stage was infectious," says Eipper-Mains. "He loves science and loves what he does every day."

He is ridiculously smart but very human and easy to approach. Smithies was like the grandfather of the meeting. He gave great advice and told us to find work that you wake up every day excited to do."

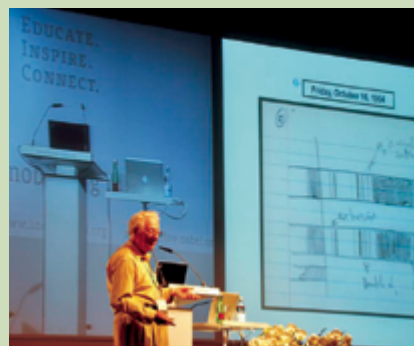
An important message the Nobel Prize winners passed on to the students was the importance of collaboration. "They said to make friendships both within your field and outside your field of expertise," explains Eipper-Mains. "A fresh set of eyes can really steer your research in a new direction."

They also urged students not to get discouraged, Eipper-Mains says. "It's easy to get caught up in the minutia of what you're doing and come to a dead-end. It's nice to know that people who have been successful have also gone through that. If you take a step back and look at it in a different way, it can help you take off in a new direction."

Eipper-Mains is studying the effects of cocaine on gene expression in the mouse brain in an effort to characterize the molecular changes that occur as a result of drug use. She expects to have her thesis done in May and will start her final two years of medical school in July. She's interested in psychiatry and research involving the brain and addiction. Eipper-Mains is still undecided whether she will focus on research or clinical care, but she believes the Lindau meeting has laid a foundation of friendships and collegial inspiration for whichever career path she decides to follow. ✱



(right) Jodi Eipper-Mains



2007 Nobel Laureate Oliver Smithies, Ph.D.

Attendees of the 60th Annual Lindau Meeting of Nobel Laureates and Students in Lindau, Germany.





Urban Service Track Update

A novel interdisciplinary program for UConn medical students and their health professions peers is offering students valuable insight into the plight of underserved patients, who often lack access to high-quality health care.

Now in its fourth year, the Urban Service Track (UST) program exposes the next generation of health care providers to the unique challenges and needs of the most vulnerable patient populations, including urban elderly and youth; migrant and refugee populations; individuals living with HIV/AIDS; the incarcerated; veterans; substance abusers; and the under- and uninsured.

To date, 21 Urban Health Scholars have completed the program, in which dental, nursing, medical, and pharmacy students work and learn alongside one another. Students participate in community health clinics and forums, legislative

visits to Washington, D.C., and educational events that address such topics as cultural and linguistic barriers, health care financing and management, and community resources. Other elements of the program include specially tailored instruction, mentoring from faculty and community health care providers, and hands-on clinical practice opportunities.

“Working alongside dental, nursing, and pharmacy students at community events strengthens our ability to provide effective health care,” says Tiffany Chen, a School of Medicine UST scholar. “Everyone contributes to a cohesive and shared plan of action.”

This interdisciplinary approach is what makes UConn’s program so innovative. By pooling the various specialties, UST is positioned to address contemporary health care issues, including the nation’s shortage of primary care providers.

(cover) Christine M. Crawford, a UConn medical school student, measures the blood pressure of a visitor to a community clinic.

(left) Tara Mould, a UConn medical school student, speaks with a visitor to a community clinic.



"The curriculum's interprofessional nature will produce providers prepared for the inevitable changes in health care delivery that ultimately will improve patient outcomes and reduce cost," says Bruce Gould, M.D., UConn associate dean for primary care, director of the Connecticut Area Health Education Center, and the visionary behind UST's creation.

UST, according to faculty mentor and family practitioner Hugh Blumenfeld, M.D., Ph.D., offers a view into "how socioeconomic forces shape the resources available in urban communities" and the unique medical services and skills needed in those environments.

Connecting with the Underserved

One important measure of the program's success is its evident appeal to students, according to UST director Petra Clark-Dufner. Initially created



Hardeep Singh, a UConn medical school student, measures the blood pressure of a visitor to a community clinic.

Of the program's graduates, Clark-Dufner says that about half are pursuing residency training or are employed by urban or state hospitals. Another 25 percent work with community clinics and pharmacies.

"Engaging students as they begin their health care careers creates building blocks and establishes an early connection to those (underserved) communities," says Alysia Monaco, Class of 2008 UST graduate and a staff registered nurse at Massachusetts General Hospital's cardiac surgical ICU. "This ultimately allows provision of the same standard of care to all, regardless of social standing."

Graduate John McCarthy, Class of 2010 salutatorian and retail pharmacist in Hamden, Conn., applauds UST for giving voice to the underserved and for developing a sense of advocacy among students.

"I've applied the teachings of UST to every patient who comes into the pharmacy," he says. McCarthy was last year's recipient of the prestigious Excellence in Public Health Pharmacy Practice Award.

"The greatest benefit of the UST for me is a very conscious awareness that the playing field for access to quality health care is not level," says Abdullah Wardak, a pharmacy school and UST graduate now employed in the long-term care field and as a part-time retail pharmacist in Hartford.

Improved personal and professional confidence in working with patients is another beneficial aspect of the program, says Laura Huling, a School of Dental Medicine scholar.

UST support derives from state and federal funding along with private and institutional grants, Clark-Dufner says. Among those essential sources are the U.S. Department of Health and Human Services through the Health Resources and Services Administration; the Connecticut Area Health Education Center; UConn's School of Medicine and Center for Public Health and Health Policy; the Connecticut Health Foundation; and the Richard Davoud Donchian Foundation.

"UConn's UST program is a dynamic example of a successful academic and community partnership," Clark-Dufner adds. "It is leading the way in creating a pipeline of high-quality medical professionals who value interprofessional teamwork and patient-centered care for the urban underserved." ❁

"Working alongside dental, nursing, and pharmacy students at community events strengthens our ability to provide effective health care."

to support up to 16 students per year, UST now attracts more than triple that number annually.

The roster of scholars is impressive and diverse. Students from Connecticut's urban and suburban areas team up with others native to Albania, Bangladesh, Bosnia and Herzegovina, China, South Korea, and the Ukraine. Some are undergraduates, while others have already earned degrees from Yale, Wesleyan, Brown, Smith, Middlebury, and the California Polytechnic State University. A few are embarking on a second or third career; others are obtaining multiple degrees.

\$1M Gift to Support Cancer Research

Richard and Jane Lublin of Avon, Conn., have pledged an estimated \$1 million bequest for the Carole and Ray Neag Comprehensive Cancer Center at the UConn Health Center.

The gift will support the work of leading clinician-scientists, including Upendra Hegde, M.D., co-director of the Neag Comprehensive Cancer Center's head and neck/oral oncology program and associate director of medical oncology in its melanoma program.

"You're not going to solve this tomorrow, but Dr. Hegde is on the front line," Richard Lublin says. "Jane and I are both cancer survivors, and we are extremely interested in speeding up the research for more effective and faster ways of relieving patients of the terrible suffering they endure with this horrific disease."



Upendra Hegde, M.D., left, consults with Soheil 'Sam' Dadras, M.D., and Lori Wilson, M.D.

The Lublins' continued philanthropic support of the Neag Comprehensive Cancer Center includes a major gift last year in support of Hegde's research, sponsorship of the inaugural White Coat Gala last April, and a commitment to be a lead sponsor of the 2011 White Coat Gala.

"We are grateful for the Lublins' commitment to the UConn Health Center," Hegde says. "Philanthropy is essential to continuing the work we are doing in basic science research and translational medicine."

Richard Lublin is a longtime attorney in the Hartford area who in retirement became a television and film actor. He recently joined the advisory board of the Neag Comprehensive Cancer Center and is focused on helping researchers make advances. ❄

Grants

Army Grants Back Bioengineer's Effort to Regenerate Tissue

The U.S. Army has awarded bioengineer Lakshmi S. Nair, Ph.D., assistant professor and researcher in the Departments of Orthopaedic Surgery and Chemical, Materials and Biomolecular Engineering, two grants to further her study of regenerative biomaterials as she explores ways to regrow musculoskeletal tissue.

"The overall goal of my research is to create a new generation of tissue-inducing microenvironments," Nair says. "We believe that by developing biomaterials that can interact with cells involved in wound healing and favorably modulate their responses – in this case, regenerative biomaterials – we could significantly alter the tissue repair process and enhance tissue regeneration."

This approach to introducing biomaterials has the advantages of being highly cost-effective, accommodating to the structural irregularity of the defects, and implantable in a minimally invasive manner.

A three-year, \$614,372 Idea Development Award will back Nair's work with a polysaccharide-based (derived from natural



sugar chains) injectable formulation that exists as a liquid when cooled and becomes a solid at body temperature.

Some of Nair's work in this area has been published, including articles in *The Laryngoscope* and the journal *Biomacromolecules*.

The second grant is an 18-month, \$150,000 Hypothesis Development Award to support Nair's effort to develop a new protein-based injectable that could be used to induce the regeneration of bone and cartilage. ❄

Professor Named ASH President



William B. White, M.D., professor and chief, Division of Hypertension and Clinical Pharmacology at the Pat and Jim Calhoun Cardiology Center, has been elected president of the American Society of Hypertension (ASH). He was inducted as president-elect

at the ASH Annual Meeting in New York and serves on the executive committee. White will also be program chair for the Society's 2011 national meeting. His term as president runs from 2012 through 2014. The ASH presidency is acknowledged as a top position in clinical hypertension in the U.S. ❄

Continued Commitment to Primary Care

At a time when the country is experiencing a shortage of primary care physicians, the Health Center's Internal Medicine Residency Program has been awarded a \$1.9 million grant to add two more residency positions per academic year. The federal grant is funded through the Department of Health and Human Services Health Resources and Services Administration's Primary Care Residency Expansion Act.

Steven Angus, M.D., F.A.C.P., is program director of the Internal Medicine Residency Program and project director of the grant. "We have an opportunity to develop and implement an innovative educational curriculum that will continue to attract students to our program long after grant funding runs out," he says. "We have the faculty resources and administrative structure from the University and our affiliated partners to make this a model of primary care training that will be highly educational and effective."

The Categorical Internal Medicine Residency Program has an intern class of 46 and a total program size of approximately 120, including osteopathic residents and chief medical residents. The new positions will start in July 2011, but Angus and the project's co-director, Rebecca Andrews, M.D., are already developing the novel curriculum.

The residency program recently developed an office-based medicine track, which will serve as the backbone for the new primary care initiative. Angus says the grant funding will also allow the development of other educational partnerships with private practitioners and community health centers in order to provide a well-rounded educational experience.

Laurencin Named BMES Fellow

Cato T. Laurencin, M.D., Ph.D., vice president for health affairs and medical school dean, has been elected a fellow of the Biomedical Engineering Society (BMES). The BMES bestows this honor in recognition of outstanding contributions and achievements in biomedical engineering.

Laurencin, who also is the Van Dusen Endowed Chair in Academic Medicine and Distinguished Professor of Orthopaedic Surgery and Chemical, Biomolecular and Materials Engineering at UConn, was one of 15 biomedical engineers inducted in a formal ceremony at the BMES Annual Meeting last fall.

"They represent some of the most imaginative and distinguished biomedical engineers in the field," says BMES fellows committee chair Nicholas A. Peppas. "Their contributions have had a major impact in biomedical devices and processes, treatment of diseases, and all aspects of biomedical engineering that contribute to improvement of the quality of life of patients."

The newly elected fellows were nominated by their peers. ❄

Urist Award Recipient



The Orthopaedic Research Society (ORS) recently presented the Marshall R. Urist Award for Excellence in Tissue Regeneration Research to Jay R. Lieberman, M.D., director of the Health Center's New England Musculoskeletal Institute, at its annual meeting.

According to J. Mark Wilkinson, Ph.D., F.R.C.S., chair of the ORS Special

Projects Committee, the award recognizes investigators who have demonstrated major achievements in the area of tissue regeneration. Specifically, Lieberman was selected to receive this award in recognition of his outstanding achievements in the field of bone morphogenetic proteins and cell-mediated therapies in bone repair, and for the impact of his research on tissue regeneration and bone metabolism. ❄

Fast Fact

600 Average number of interns, residents and fellows who train each day at hospitals throughout Greater Hartford under the sponsorship of the UConn School of Medicine.



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Collaborative Effort

Especially designed with open labs that flow into each other and office areas located on hallways running between labs, the new Cell and Genome Sciences Building intends to promote interdisciplinary research among the academic and industry chemists, geneticists, physicists, mathematicians, cell biologists, and computer scientists housed there. This collaborative effort aims to capitalize on the power of different areas of scientific expertise to revolutionize the practice of medicine.

