2019

College of Pharmacy Spring 2019 Newsletter

URI College of Pharmacy

High-Tech Education

Grant Funds Purchase of Cutting-Edge Drug Manufacturing Equipment

Topical health-care products are a growing market that is projected to reach an annual value of more than $20 billion globally by 2020. URI College of Pharmacy professors are tapping into that market, providing students with hands-on training opportunities developing and manufacturing topicals, thanks to a recent Champlin Foundation grant awarded to the College of Pharmacy.

Assistant Professor **Jie Shen** is the principal investigator of the project to purchase state-of-the-art equipment for the production and quality-control tests of topicals. The $146,000 grant will go toward purchasing new instruments, including the Unguator Q and the Microfluidizer®. Both are cutting-edge technologies that are unavailable elsewhere for educational purposes in Rhode Island. The Microfluidizer® is a particle-size reduction system that also can be used for other types of nano-medicines.

The instruments will be at the center of new and existing courses on drug manufacturing and independent undergraduate research projects. They also will be used for continuing education opportunities for local pharmacists and pharmaceutical scientists.

THE UNIVERSITY OF RHODE ISLAND | College of Pharmacy
7 Greenhouse Road
Kingston, RI 02881

3/2019 1700/PHR
PHOTOS: ROSS BALDING; ERIN CONNOLLY; JOE GIBLIN; NORA LEWIS; PATRICK LUCE; MICHAEL SALERNO

IN MEMORIUM

The College of Pharmacy lost a truly remarkable member of the family recently when Professor Emeritus Dr. Yuzuru Shimizu passed away in January. Yuzuru was internationally recognized for his research of marine toxins and other natural products, as well as his leadership and his mentorship. He will be greatly missed by the College's students, faculty and alumni, and by the entire pharmaceutical sciences community.

THE UNIVERSITY OF RHODE ISLAND

College of Pharmacy News

Spring 2019 | uri.edu/pharmacy-newsletter

Impacting Health Care, at Home and Abroad

The URI College of Pharmacy is always striving to make a positive effect on the health-care environment by preparing the next generation of leaders in pharmaceutical science, providing direct care in the community, at home and abroad, and engaging in groundbreaking research projects that make a lasting impact.

In this issue of our newsletter, you will find examples of all three as our students and faculty members address the salient health issues of our time.

The College's educational prowess was on full display in the fall when three students secured URI's first championship in the ACCP Clinical Pharmacy Challenge, a national "quiz bowl", type competition that pits 116 pharmacy colleges from around the country against each other. Our students continued to expand URI's reach abroad, spending January providing health services in such far-flung locations as Vietnam and Jamaica.

Our faculty members made important strides against devastating diseases like Alzheimer's and Parkinson's. In the first-ever major drug clinical trial to be conducted entirely in Rhode Island, Ryan Institute of Neuroscience Executive Director and Pharmacy Professor Paula Grammas attacked Alzheimer's disease by targeting inflammation in the brain's blood vessels, a study for which the College's Pharmaceutical Development Institute played a key role. College of Pharmacy researchers also used natural compounds to seek treatment for Parkinson's, aimed to develop new topical medications, and addressed the ever-growing opioid crisis.

These are just a few examples of the great work being done by the College's students, faculty members and alumni. There is so much more happening now and planned for the future. Keep up-to-date on our many endeavors on the College's website, web.uri.edu/pharmacy. We can't wait to see what's accomplished next!

— E. Paul Larrat, dean

Pharmaceutical Development

URI Institute Plays Key Role in Groundbreaking Alzheimer's Trial

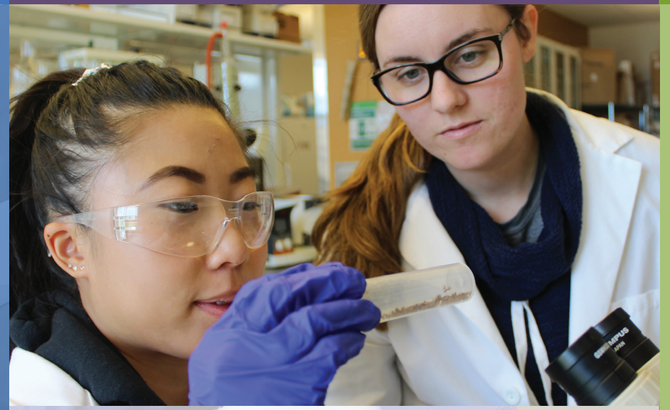
In a pioneering clinical trial that will attack Alzheimer's disease by targeting inflammation in the brain's blood vessels, researchers at the George & Anne Ryan Institute for Neuroscience have received regulatory approval to initiate the BEACON Study, and the College of Pharmacy's Pharmaceutical Development Institute (PDI) has played a key role in the study.

The URI-sponsored study is the first clinical trial led and conducted entirely within the state designed to treat individuals with mild cognitive impairment probably due to Alzheimer's disease. The PDI, a current good manufacturing practices (cGMP) manufacturing suite in the lower level of Avedisian Hall, produced the placebo comparator for the BEACON trial.

The clinical trial looks into the possible role of the brain's blood vessels in Alzheimer's disease. The BEACON Study repurposes the stroke prevention drug, dabigatran, to suppress one part of the inflammation process associated with Alzheimer's disease. Results from the BEACON Study are expected in late 2020.

The PDI operates two facilities — the 7,000-square-foot cGMP manufacturing suite and a 1,500-square-foot cGMP analytical and stability testing laboratory, both located in Avedisian Hall. The facility's mission is to:

- Facilitate the development of new pharmaceutics by researchers at URI and their academic and industry partners
- Engage private partners to enhance the economic development of the Rhode Island pharmaceutical and biotechnology industries
- Provide a world-class teaching and training facility for faculty, students and the biotech/pharmaceutical industry



Natural Research

Fruit Flies Help Researchers Seek Parkinson's Treatments

There has been considerable buzz around the Bioactive Botanical Research Laboratory in the University of Rhode Island's College of Pharmacy lately. That's partly because researchers there have a new ally in their quest to find a new treatment for Parkinson's disease — the fruit fly.

Researchers — led by pharmacy Professor Navindra Seeram and interdisciplinary neuroscience Ph.D. candidate Shelby Johnson and — are working with the insects to test the effectiveness of natural compounds as treatments for the neurodegenerative disease. They have been administering multiple compounds to the flies — which have Parkinson's through either genetic modification or exposure to toxins — including equol, a gut microbial metabolite of certain isoflavones found in soybeans, which are known to act as plant-based estrogens.

There is still much to learn from the on going study, but preliminary results of the tests have been promising. Flies with toxin-induced Parkinson's given the Mucuna pruriens seed extract have demonstrated increased climbing ability. For more on the study, visit web.uri.edu/pharmacy.

Global Experience

Students get Pharmacy, Cultural Lessons in Vietnam

Two College of Pharmacy students got a lesson in international injection techniques and health care in a developing nation, while vaccinating hundreds of children against common diseases during a J-Term trip to Vietnam.

Students Colin Dimond and Michael Barnes spent three weeks in January at Louis Pasteur Polyclinique, a full-service medical facility in Ho Chi Minh City. The pair worked for two weeks in the pharmacy, interpreting and filling prescription orders from the clinic, and counseling patients on their medications. The students then spent a day in the hematology lab, doing blood typing, urinalysis, CBC, and HIV screening, before moving to the vaccination clinic, where they injected nearly 1,000 children against such diseases as measles, rubella, HPV, and rabies.

Pharmacy Students Bring Services to Disabled in Jamaica

A group of University of Rhode Island students and faculty from across the Academic Health Collaborative spent their winter break in tropical paradise, but instead of basking in the sun on white sand beaches, the students spent their time working with some of the most vulnerable populations in Jamaica.

More than 20 students from the College of Pharmacy, along with others from the Colleges of Nursing and Health Sciences, joined three faculty members in working with disabled residents affiliated with Mustard Seed, an organization in Jamaica that serves children and adults with disabilities who have been abandoned. The students lived among the patients in residential communities, working with them on managing their medications,

caring for the symptoms of their conditions, and providing physical therapy for such conditions as cerebral palsy. They also conducted workshops for caregivers at the facility on such topics as medication administration, first aid, self-care, over-the-counter medications, and proper use of medical equipment.

National Victory

URI Students Win National ACCP Clinical Pharmacy Challenge

Which anti-coagulation medication must a pharmacist keep sealed in its original packaging until dispensing?

URI College of Pharmacy student Aidan Fischer immediately rang in with the correct answer before the multiple-choice answers were even displayed, setting the tone for the three-member URI team that captured the college's first national championship in the Clinical Pharmacy Challenge Oct. 22, 2018. The team outlasted 116 other pharmacy schools from across the country to win the national competition presented by the American College of Clinical Pharmacy (ACCP) at its annual meeting in Seattle Washington.

Fischer and fellow sixth-year students Andrew Webb and Alex Chernov seized the momentum against an undermanned team from the Medical University of South Carolina to dominate the final round on their way to a 2,140-635 victory to secure the "quiz bowl", type competition. The trio, along with team alternate Janine Short and with the help of coach and Pharmacy Professor Kristina Ward, pored through pharmaceutical journals, ACCP materials and their own textbooks to brush up on as much information as they could in the weeks leading up to the contest, which includes questions spanning 22 pharmaceutical topics.

The URI team made it to the top eight in the 2016 competition, but this is the first championship for the Rhode Island squad.