



IPPH NEWSLETTER

INDUSTRIAL & PHYSICAL PHARMACY



GREETINGS
from the department head



Dear Alumni and Friends;

One of my favorite scenes at Purdue this summer involves hammocks. On warm sunny days, enterprising students string mesh hammocks between the trees near the engineering fountain. They read, sleep and watch kids run through the spray. The hammocks remind me of cocoons. I like to think that someday the students inside will emerge, butterflies in black and gold regalia, to parade around the fountain at commencement. But on a perfect summer afternoon, the hammocks, the sun and the sky are more than enough.

Whether you're working hard this summer or drifting away in your own hammock, we're delighted to share the latest from IPPH with you in this newsletter. You'll read about our newest lab renovation, just completed this spring. You'll get an update on Dr. Lynne Taylor and the groundbreaking research being conducted by her group. You'll see a summary of this year's Peck Symposium, too, which focused on pharmaceutical solids. And we'll fill you in on the many accomplishments of our faculty and students, together with the accolades that have come their way.

Thanks for reading! If West Lafayette is in your summer travel plans, do stop by for a visit; we'd love to see you. We'll save you a hammock!

Liz Topp
Dane O. Kildsig Chair and Department Head



FACULTY HIGHLIGHTS

Dr. Rodolfo Pinal was faculty advisor, along with Dr. Steve Scott of the Pharmacy Practice department, for a Purdue student team that won the 2016 Student Soybean Product Innovation Competition. The team's winning invention is "SoyFoliate," a hand soap with a soy exfoliant as an alternative to the environmentally harmful plastic microbeads that are being banned in the U.S. Team members are Samuel Lewis, Steve Ferris and Alison Switzer, all third-year professional students in Purdue's doctor of pharmacy program, and Ryan Pendergast, a mechanical engineering junior. The group of four students will share a \$20,000 prize for their winning entry.

Dr. Lynne Taylor was named the Retter Professor of Pharmacy at Purdue, effective January 1, 2016. The appointment recognizes Dr. Taylor's outstanding achievements as a scholar and her invaluable contributions to the mission of our College. In his appointment letter, Dean Svensson noted the high quality and impact of Dr. Taylor's research, and the very high regard in which she is held both in the College and in the broader scientific community. The five-year appointment provides an annual allocation to support Dr. Taylor's research activities.

Dr. Tony Zhou has received a Summer Faculty Grant from the Purdue Research Foundation. The award provides \$8,000 of summer support for his research project entitled "Developing powder aerosols of combinational antibiotics for combating life threatening lung functions."

Dr. Rodolfo Pinal was been awarded a 2015-2016 Purdue Research Foundation International Travel grant. The award provides funding to support his attendance at the International Symposium on the Properties of Water, June 26-29, in Lausanne, Switzerland.

GRADUATE STUDENT HIGHLIGHTS

Haichen Nie (Byrn group) was selected to receive a Bilsland Dissertation Fellowship from the College of Pharmacy. The fellowship will provide partial support for Haichen over this summer, to assist him as he completes his degree.

Jun Xu (Yeo group) has been selected to receive a Lilly Endowment Gift Graduate Research Award for his proposal entitled "Engineering leukocyte mimetic nanoparticles for enhancing extravasation at peritumoral endothelium." The award will cover Jun's stipend and medical insurance for a one-year period.

Venecia Wilson (Taylor group) was awarded a pre-doctoral Fellowship from the Pharmaceutical Research and Manufacturers of America Foundation. This award provides up to two years of support.

Venecia Wilson (Taylor group) was selected as a Burton D. Morgan Entrepreneurial Fellow for 2016-17 school year. The program is a student-driven initiative, focused on leadership, mentorship and community building while supporting professional development. Fellows are high performing, student thought leaders in the area of entrepreneurship. Approximately 12 outstanding undergraduate and graduate students from across academic disciplines are selected every year.

Ehab Moussa (Topp group) was selected to receive the AAPS Biotechnology Graduate Student Research Award, sponsored by Eli Lilly and Company. The award was presented at the AAPS National Biotechnology Conference in Boston this May. In recognition, Ehab gave a podium presentation on his work and received a \$1,000 travel reimbursement.

Yihua Pei (Yeo group) has been selected to receive a Chaney Graduate Student Travel Award. The award provides funds to assist with Yihua's travel to the Controlled Release Society Meeting, which will be held July 17-20 in Seattle, WA.



Meet Venecia Wilson



Venecia Wilson first remembers getting interested in Pharmacy as a junior in high school. "I was taking AP Chemistry, and in one of our lab modules we synthesized aspirin," she explained. "I thought it was the coolest thing ever!"

When she came to Purdue as an undergrad in 2008, she originally considered majoring in BME. However, once she explored further, she realized ABE was more in line with her interests. With ABE as her engineering department, she realized she could double major in BSPS, and, as she puts it, "the rest is history." She graduated 2013 with a BS in Biological & Food Processing Engineering and a BS in Pharmaceutical Science – MCMP specialization.

When it came time to select a school for graduate study, Purdue was always at the top of her list. "IPPH is a world renowned department in my research area of amorphous formulation," she explained. "I also wanted to attend a university which had other well-known departments that I could potentially collaborate with: chemistry, chemical engineering, materials engineering. And lastly, from my undergraduate career I knew I would have abundant opportunities at Purdue to engage in activities outside of research."

Wilson has twice traveled with Dr. Stephen Byrn and other IPPH PhD students to teach students at the Kilimanjaro School of Pharmacy in Tanzania. "During my first trip, the team taught a manufacturing course in which the students manufactured acetaminophen tablets. And on my second trip, my team taught students how to use HPLC to determine counterfeit pharmaceuticals."

Wilson, who expects to graduate with her PhD in May 2018, is a 2016 PhRMA Pre-Doctoral Fellow, and was selected as a Burton D. Morgan Entrepreneurial Fellow for the 2016-17 school year.



Dr. Lynne Taylor



Lynne S. Taylor is the Retter Professor of Pharmacy in the Department of Industrial and Physical Pharmacy, as well as Professor of Chemical Engineering (by courtesy) at Purdue University where she was previously Associate Professor (2007-2012) and Assistant Professor (2003-2007). Prior to moving to academia, she spent several years working at Astra and then AstraZeneca in Sweden developing new drugs.

Lynne received a Bachelor of Pharmacy degree with First Class Honors from the University of Bath in the United Kingdom. Her doctoral thesis work at the University of Bradford, UK, was in the area of Pharmaceutical Technology. In between her degrees, she spent some time working in pharmacy in both the UK and Zimbabwe. After her PhD, Lynne was a postdoctoral researcher with Professor Zografi at the School of Pharmacy, University of Wisconsin-Madison.

Research in Lynne's group is directed toward exploring the science underlying the preformulation, formulation and manufacturing of drugs and other bioactive substances, in particular poorly water soluble compounds. She has published more than 195 peer reviewed publications. Research in the Taylor group is currently supported by several federal funding agencies, industry and private foundations.

Renovations were recently completed on the ground floor of the RPH building, renovating laboratory space and work stations for graduate students in the Taylor research group. A number of students who were temporarily working in Taylor's other new lab on the 4th floor, will now move to the new labs.



Newly renovated laboratory space in the RPH building for Taylor's research group.



THIRTEENTH ANNUAL GARNET E. PECK SYMPOSIUM

March 30 & 31, 2016

Purdue University - West Lafayette, Indiana

The Thirteenth Annual Peck Symposium was held March 30-31 at Purdue, hosted by IPPH and the College of Pharmacy. Co-chairs for this year's symposium were **Dr. Lynne Taylor** and **Dr. Keith Chadwick**, and the topic was "Pharmaceutical Crystallization: Fundamentals and Applications." Poster sessions, a reception, and a graduate student "Three Minute Thesis" competition provided additional opportunities for scientific exchange and networking.



The annual event honors the late Garnet E. Peck, Ph.D., Professor Emeritus of the department of Industrial and Physical Pharmacy at Purdue University. Dr. Peck left a record of enduring contributions to the pharmaceutical sciences, including the development of latex-based tablet coatings that have been used in the industry for more than thirty-five years. The goal of this event is to stimulate interest in the symposium's focus areas and to identify opportunities for new research.



Top, L to R: **Dr. Lynne Taylor**, Retter Professor of Pharmacy, Purdue University; **Dr. Keith Chadwick**, Assistant Professor, Purdue University; **Dr. Stephan X. M. (Steff) Boerrigter**, Senior Research Investigator, SSCI, a division of Albany Molecular Research, Inc. (AMRI)

Bottom, L to R: **Dr. Simon N. Black**, Research & Development, Pharmaceutical Development, AstraZeneca; **Dr. Susan M. Reutzel-Edens**, Senior Research Advisor, Small Molecule Design & Development, Eli Lilly and Company; **Dr. Peter Vekilov**, Professor of Chemical and Biomolecular Engineering and Chemistry, University of Houston

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