

From the Department Head



Dear Alumni and Friends,

It's a pleasure to send you this update from the Department of Industrial and Physical Pharmacy at Purdue University. Since I joined the Department in July, I've been consistently impressed with the outstanding research of our faculty and graduate students, with our teaching and outreach efforts across the globe, and with the "can-do" spirit that is so much a part of Purdue. I've enjoyed meeting many of you at events throughout the fall. Your

involvement is such an important part of what makes us great, so I wanted to send you this snapshot of our year.

From gorgeous fall colors...to train whistles on campus...to groundbreaking pharmaceutical research...to a football team that beat *both* Michigan and Ohio State (in the same season!)...there's never been a better time to be a Boilermaker. Happy holidays from all of us here at IPPH. Boiler up!

Liz Topp

Dane O. Kildsig Professor and
Department Head

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EA/EOU

Year-at-a-Glance

FACULTY HIGHLIGHTS

Steve Byrn received the David Grant Research Achievement Award in Physical Pharmacy from the American Association of Pharmaceutical Scientists (AAPS) (*November*)

Stan Hem received the first Research and Scholarship Achievement Award from Purdue's School of Pharmacy and Pharmaceutical Sciences (*September*)

Jim Litster received the Achievement Award from the Agglomeration Society (*August*)

Kinam Park received the 2009 Faculty Research Award from the Purdue University Chapter of Sigma Xi, the Scientific Research Society. The university-wide award recognizes a faculty member for outstanding research accomplishments (*April*)

Yoon Yeo received the New Investigator Grant in Pharmaceutics and Pharmaceutical Technology from AAPS (*November*)

GRADUATE STUDENT HIGHLIGHTS

David Lindley received the Schering-Plough Science and Innovation Award (*April*)

Sai Sumana Penumetcha received recognition for excellence in her TA duties from the Provost's Office (*April*)

IPPH graduate students hosted the 41st annual Pharmaceutics Graduate Student Research Meeting (PGSRM) on the Purdue campus; a group photograph appears on the outside cover (*June*)

Basma Ibrahim received a Ronald W. Dollens Graduate Scholarship in the Life Sciences (*August*)

David Alonzo received the Jenkins-Knevel Award for outstanding graduate student research in Industrial and Physical Pharmacy (*October*)

Andrew Otte received the Kienly Award as the outstanding graduate student teaching assistant in Industrial and Physical Pharmacy (*October*)

Ryan McCann received the first Lieberman award honoring an outstanding graduate student in Industrial and Physical Pharmacy, an award in celebration of alumnus Herb Lieberman's 90th birthday (*October*)

ALUMNI HIGHLIGHTS

Jeff Rudolph (Ph.D. 1971) was hooded by his doctoral advisor, Garnet Peck, thirty-eight years after graduation (*May*)

Holly Bonsignore (Ph.D. 1987) was recognized as a Distinguished Alumnus of Purdue's School of Pharmacy and Pharmaceutical Sciences (*October*)

Research Group News

BYRN GROUP

Steve Byrn and his group continue their internationally recognized research on drugs in the solid state, including their chemistry, formulation and manufacturing. Current group members are postdoc Eun Hee Lee and graduate students Niraj Trasi, Sumana Penumetcha, Ziyang Su, Xin Chen, Yan Zhang and Tian Xie. Steve continues to lead our Graduate Certificate and Master's degree programs in Regulatory and Quality Compliance and has developed our new "Sustainable Medicines in Africa" program, teaching GMP manufacturing and regulatory science at the Kilimanjaro School of Pharmacy in Moshi, Tanzania.

CARVAJAL GROUP

Tere Carvajal's research focuses on surface material science, manufacturing science with particular interest on fundamentals and consequences of milling processes and formulations for oral and powder inhalation delivery. Current group members include graduate students David Ely, Andrew Otte and Yan Zhang, as well as visiting scientists Takanori Ito (Japan) and Xiang Kou (Singapore). Tere has led our French American Cultural Exchange (FACE)

program with the School of Pharmacy at the University of Strasbourg in France. Tere and Liz visited Strasbourg in early November.

GALINSKY GROUP

Ray Galinsky's current research addresses the effects of maternal drug exposure during pregnancy of CYP activity in adult offspring. He enjoys active collaborations with a number of institutions.

GREEN GROUP

Mark Green and his group study agents for biomedical imaging. Mark is one of three principal investigators on a new project for whole-body PET/CT assessment of tumor perfusion, which received funding this year from NIH. Mark also serves on the imaging project development team for the Indiana Clinical and Translational Science Institute. Mark directs the research of second-year graduate student Yen Ng.

HEM GROUP

Stan Hem's last graduate student, Jennifer Maguire, successfully defended her Ph.D. dissertation in October. Stan plans to continue to be active in teaching and research. He and Harm HogenEsch of the vet school have funding from PATH to formulate vaccines for underdeveloped countries.

KNIPP GROUP

Greg Knipp and his group work in biopharmaceutics, with particular emphasis in peptide transporters and placental nutrient transport. Current group members are graduate students David Lindley, Li Pan, Lori Ward Karpes, Stephanie Mowery and Wyatt Roth; technician Robyn McGann; and undergraduate student Shuting Huang.

LITSTER GROUP

Jim Litster and his group conduct research in particle formulation and engineering, with particular interest in wet granulation, roller compaction and crystallization processes. Jim holds joint appointments in IPPH and Chemical Engineering. His current group members include postdocs Defne Kayrak-Talay and Ariel Muliadi, one IPPH grad student (Steven Dale) and four chemical engineering grad students and two undergraduate students.

PARK GROUP

Kinam Park and his group develop novel drug delivery methods, with current emphasis on adaptable polymeric micelles and nano/micro fabrication. Kinam holds joint appointments in IPPH and biomedical engineering (BME). Current group members include graduate students



Ryan McCann, with Dr. Pinal, receives Lieberman Award

Research Group News *(cont.)*

Kumar Vedantham, Jutarat Kitsongsermthon, Ying Lu and several BME grad students; postdocs Ghanashyam Acharya and Sungwon Kim; and visiting scientists Sung Won An and Yoshio Kuno. Kinam was recognized as one of 32 faculty and staff inventors at a dinner hosted by Purdue Research Foundation this fall. Kinam serves as Editor-in-Chief of the *Journal of Controlled Release*.

PINAL GROUP

Rodolfo Pinal and his group study the solubility and dissolution of poorly water soluble drugs, with emphasis areas in amorphous formulations and fast-dissolving crystalline suspensions. Current group members are graduate students Ryan McCann, Bo Zhou, and Kevin Boksa; postdocs Yinyan Zhao and Nawale Kahalef. Rodo heads our Center for Pharmaceutical Processing Research (CPPR), and has presented his research in India and Korea this year. Rodolfo was promoted to Associate Professor with tenure, effective fall 2009.

TAYLOR GROUP

Lynne Taylor and her group study the chemical and physical stability of small-molecule organic solids and develop analytical methods for solids characterization. Current group members are graduate students David Alonzo, Umesh Kestur Satyanarayana, Jared Baird, Yi-Ling Hsieh, Grace Ilevbare, Lindsay Stanford, Shweta Raina

and Qing Zu; postdocs Bernard van Eerdenbrugh and Kaho Kwok; and visiting scientist Aiguo Zheng (China). Lynne is involved in the NSF Engineering Research Center for Structured Organic Particulate Systems (C-SOPS), a multi-institution research consortium, and has been named a Purdue University Faculty Scholar for 2009-2014.

TOPP GROUP

Liz Topp joined the department in July and has welcomed two postdocs to her group, Andreas Sophocleous and Jun Zhang. Andreas joined the group in June after receiving his Ph.D. in chemical engineering from the University of Michigan. Andreas is working on hydrogen/deuterium exchange methods for characterizing proteins in the solid state. He visited the laboratories of Dr. David Weis at The University of Kansas to learn more about the method during a six-week period this fall, a great opportunity. Jun joined the group in September after completing her Ph.D. in biochemistry and molecular biology at the University of Calgary in Alberta. Jun's research will address thiol-disulfide exchange reactions for proteins in the solid state.

WEATHERMAN GROUP

Kara Weatherman continues to be active in our nuclear pharmacy programs. She headed up instruction for the nuclear pharmacy certificate program,

taught at Purdue in mid-August. She mentored six students who participated in nuclear pharmacy clerkships in London this fall and co-hosted a visiting student from Thailand earlier in the year.

YEO GROUP

Yoon Yeo and her group are working in the areas of nanomedicine for chemotherapy, inhalable drug delivery, and in situ cross-linking hydrogels. Current group members are postdoc Gaurav Bajaj and Peisheng Xu, who is leaving to take a faculty position at the University of South Carolina, and graduate students Zohreh Amoozgar, Hillary Holback, Basma Ibrahim and Emily Gullotti; and visiting scholars Yan Yang (China), Yang Chun Park (Korea) and Min Feng (China). Yoon was recognized as the author of a "ten most accessed" article in *Molecular Pharmaceutics* for April-June and July-September of this year.

"Our program is only as good as its faculty."

Dean Craig Svensson



Li Pan presents the Keynote Appreciation Award to Dr. Alton Johnson at the 41st Annual PGSRM

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