DEPARTMENT PICNIC FALL 2018

Spring Newsletter

Department of Pharmaceutics and Pharmaceutical Chemistry 2019

THANK YOU FOR SUPPORTING US!

Welcome to our 2019 Newsletter! We are thrilled to update you on all the exciting research and achievements in our Department in the College of Pharmacy in the Skaggs Pharmacy Institute, a state-of-the-art research facility which opened in 2013.

Currently, our faculty members include Assistant Professors Mingnan Chen (soon to be Associate) and Shawn Owen; Associate Professor Jim Herron; Professors You Han Bae, Jindrich Kopecek, Hamid Ghandehari, David Grainger, Sung Wan Kim, and Carol Lim; and Dean Emeritus Professor John Mauger. Our Department remains at the forefront of research in drug delivery and targeted biologics (polymeric conjugates, antibody-drug conjugates, genes, peptides, proteins, and more).

All faculty support and are involved with interdisciplinary science. We offer the opportunity for students to carry out cutting-edge research with world-class scientists in a highly collaborative, interdisciplinary training environment. Students work in exceptional facilities and have access to outstanding core services. The departmental missions are to advance research in the areas of pharmaceutical chemistry and drug delivery, and to provide excellent educational opportunities for all students that they teach. We remain on the forefront of innovative drug delivery strategies and novel therapeutics for the 21st century.

Interim Chair, Dr. Carol Lim

Welcome to our Department Newsletter, and best wishes for a productive and successful 2019!

FACULTY SPOTLIGHT

Assistant Professor Mingnan Chen

In January 2019, Dr. Mingnan Chen's Lab for Immunotherapeutics received NIH R01 grant support ($2.7 million total costs) from the National Institute of Allergy and Infectious Diseases to develop a precision immune cell-ablation therapy for autoimmune diseases. The ablation therapy, when translated to the clinic, is expected to be more effective than current therapies due to its broad coverage of pathogenic cells. This new therapy will also likely avoid immunodeficiency that often plagues current therapies. This five-year project, together with the multidisciplinary research team led by Dr. Chen, will provide research and training opportunities to graduate students of our department at the interface of protein engineering, immunology, and pharmaceutics.

Both of Dr. Chen's graduate students Peng Zhao and Peng Wang, have been the recipients of the UU Graduate School Fellowship (in 2017 and 2018, respectively).

Chen Lab for Immunotherapeutics, 2019

Congratulations to Peng Zhao. Peng has graduated from the Chen lab with four first-authored research articles including one in Nature Biomedical Engineering. He is now a postdoctoral associate at the UT Health Science Center at Houston. Best wishes to his future career!

Dr. Mingnan Chen has passed through the tenure process at the Department and College levels, and is awaiting notification from the University for the award of tenure sometime this spring/summer. We congratulate Dr. Chen in advance of this significant milestone!

Dr. Chen's other affiliations include:
Member, Nano Institute of Utah
Assistant Professor, Pharmaceutical Chemistry
Assistant Professor, Pharmaceutical Chemistry
Member, Huntsman Cancer Institute

Assistant Professor Shawn Owen

"As biomedical scientists, we are motivated by the belief that there are significant therapeutic and diagnostic challenges and that we have a leading role in solving them."

Dr. Owen's first graduate student, Sun Jin Kim, recently defended her thesis entitled "Biomolecular Interactions in Breast Cancers: Development of Strategies and Platforms to Understand Biointerfaces." During her time in the lab, she was also the recipient of one of the College's Skaggs Research Fellowship Awards and also won the Department's Fox Award for outstanding service and scholarship.

FACULTY SPOTLIGHT

Dr. Shawn Owen was one of six University of Utah researchers that won a University Technology Acceleration Grant (UTAG) in 2017, a program that provides crucial funds to accelerate university-developed technologies from the idea stage to the market. This grant was funded by the Utah Science Technology and Research (USTAR) initiative. Dr. Owen has been awarded ~$650,000 direct costs of funding from USTAR, HCI, Agilent Technologies University Collaboration Grant, TVC Engine Funds, and ARUP Labs Collaborative Funding. .

Dr. Owen was the recipient of the 2016 Distinguished Teaching Award for the College of Pharmacy, usually an honor bestowed to more senior faculty. We wish him continued success in his academic endeavors!

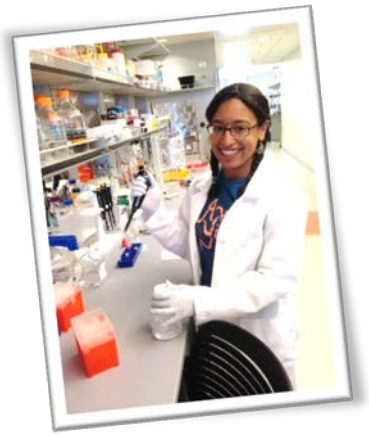
Dr. Owen's other affiliations include Adjunct Assistant Professor, Internal Medicine, Adjunct Assistant Professor, Biomedical Engineering, and Adjunct Assistant Professor, Medicinal Chemistry.

Selected Publications include:

1. Biophysical Properties and Heating-Induced Aggregation of Lysine-Conjugated Antibody-Drug Conjugates AV Gandhi, KJ Arlotta, HN Chen, SC Owen, JF Carpenter, J Pharm Sci. (2018) Jul;107(7):1858-1869.

2. In-Depth Comparison of Lysine-Based Antibody-Drug Conjugates Prepared on Solid Support Versus in Solution, KJ Arlotta, AV Gandhi, HN Chen, CS Nervig, JF Carpenter, SC Owen, Antibodies 2018, 7 (1), 6.

3. A Tri-part Protein Complementation System Using Antibody-Small Peptide Fusions Enables Homogeneous Immunoassays. Dixon AS, Kim SJ, Baumgartner BK, Krippner S, Owen SC (2017) Sci Rep, 7(1), 8186

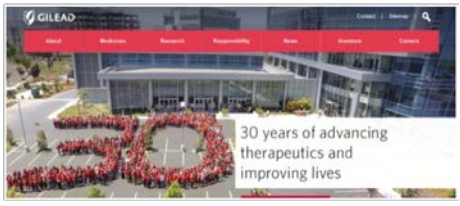


Jessica McCombs in the Owen Lab received a United Negro College Foundation/Merck Science Initiative Fellowship. Jessica was one of ten recipients to receive the prestigious fellowship that started in 2015. Jessica was also the recipient of a University of Utah Emerging Diversity Scholars Award.

Christine Nervig in the Owen Lab received a NSF Fellowship as well as a Skaggs Research Fellowship.

INDUSTRY RELATIONS

We are grateful for on-site interviews and visits from Celgene and Gilead in recent years. Special thanks to Drs. Ho-Wah Hui, Shyam Karki, and Kung-I Feng from Celgene Corp, and Drs. Monica Tijerina and Scott Mitchell from Gilead for coming to visit and providing our students with insights into industry and the interviewing process.



ALUMNI AND FRIENDS

We are indebted to former alumni Drs. Nate Larson (now at Deseret Laboratories, Inc., Chief Scientific Officer; Adjunct Assistant Professor in our department) and Kevin Warner (now at Alucent Medical, Senior Director, Pharmaceutical Development; Adjunct Assistant Professor in our department) for their teaching efforts/seminars over the years. Most recently, in 2018, Nate Larson taught a short course on Drug Product Development.

Special thanks to Daan Crommelin (Professor Emeritus, Department of Pharmaceutics at Utrecht University) for his efforts in teaching a liposome short course to our students in the department for over a decade!

Dr. Daan Crommelin, speaking on the fate of nanomedicines as our guest speaker in our department in 2018.

Many thanks also to Research Professor Darrell Galloway for teaching a short course on immunology/vaccinology in 2016.

We express our heartfelt thanks and gratitude to our numerous donors who have contributed to our department over the years:

Individual donor list, alphabetical order by first name:
Anil Chhettry
Benjamin S. Maxey
Carol S. Lim
Carolyn H. Asbury
Dalynn Berglund
Darrell Galloway
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Eric J. Mack
Hamidreza S. Ghandhari
Jaesung Kim
James N. Herron
Jian Chen
Jindrich Kopecek
Jiyuan Yang
Kevin Scott Warner
Libin Zhang
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Yixin Fang
Yoo-Koo Kang
Yoshikazu Umashiro

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Pfizer Foundation
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SCM Lifescience
Theratarget Inc.

Alumna Monica Tijerina (Gilead) giving a presentation to our graduate students on drug formulation processes (2017).

FACULTY SPOTLIGHT

Associate Professor James Herron

In addition to his role as faculty member in our department, Dr. Herron is the Executive Associate Dean for Professional Education, College Of Pharmacy as well as Adjunct Associate Professor, Biomedical Engineering. Dr. Herron's research interests and expertise are in the areas of Vaccines, Therapeutic Applications of Monoclonal Antibodies, Targeted Drug Delivery Systems, Molecular Immunology and Structure, High-Throughput Screening, Function and Dynamics of Antigen-Antibody Interactions, Diagnostics Assays, and Biosensors.

Dr. Herron currently collaborates with Research Professor Darrell Galloway. Dr. Galloway is involved in two plague vaccine studies designed to evaluate two novel adjuvants formulated with two separate plague vaccines (the U.S. plague vaccine and the U.K. plague vaccine).

One of the studies is being funded by the NIH and is being conducted through one of their contractors with Galloway as the principal for the study. The study is currently underway and will involve an aerosol challenge component. The second study will be conducted at the University of Utah and will be an extension of the NIH study in that it will involve a more complete analysis of the immune responses generated by the novel adjuvant formulations. The study is being funded through a corporate sponsor.

Dr. Darrell Galloway, Research Professor

Darrell Galloway, Research Professor in our Department, presenting on plague vaccines (2018).

Dr. Herron in his role as Executive Associate Dean for Professional Education, presiding over the annual PharmD White Coat Ceremony in 2018. First-year students are sworn in as professional students, and sign the Pledge of Professionalism that will spur them on during their academic careers.

FACULTY SPOTLIGHT

Professor You Han Bae

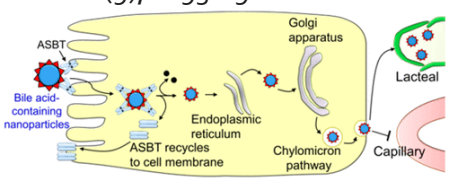
You Han Bae founded Ileo Science Inc (a startup company) in early 2018. Bae research group discovered a revolutionary oral delivery nanotechnology which was recently published in ACS Nano. The topic was press-released by ACS and Chemistry & Engineering News. Ileo Science Inc. has exclusively licensed the technology in from the University. The technology (called nObaTM) enables successful oral formulations of peptides, proteins, vaccines and small molecules, a goal that has stymied researchers for over 100 years. By precisely layering natural bile acids around pharmaceutical nanoparticles, nOba shields the drug through the gastrointestinal tract until it is absorbed in the ileum during bile acid recycling. The drug is delivered to the intestinal lymphatic system and systemic circulation. Using only green ingredients, nOba consistently demonstrates 22-47% bioavailability of diverse classes of injectable APIs in animal studies. Ileo is taking this leap in drug delivery technology to the world through internal development and out-licensing partnerships. The startup is actively communicating with multiple major pharmaceutical companies for collaborative development.

Dr. Bae has been appointed as a Distinguished Professor of Pharmaceutics and Pharmaceutical Chemistry. The title of Distinguished Professor is a rare and prestigious honor granted by the University of Utah to faculty who meet the highest standards of scholarship, international stature, and dedication to teaching and service. You Han embodies these attributes and is highly deserving of this honor because of the impact his scholarship has had on the field of Pharmaceutics. Across the entire University, only 68 active professors hold the title of Distinguished Professor.

Dr. Bae has also been recognized as one of Highly Cited Researchers by Claris for 5 consecutive years (since 2014). He is one of 161 top talents in the field of Pharmacology and Toxicology which covers Pharmaceutics and listed in Highly Cited Researchers (HCR) 2018 by Clarivate Analytics. HCR from Clarivate Analytics is an annual list recognizing influential researchers in the sciences and social sciences from around the world. The 2018 list contains 6,078 Highly Cited Researchers, 4,058 in 21 fields of the sciences and social sciences and 2,020 Highly Cited Researchers identified as having exceptional performance across several fields. Six faculty members from the University of Utah are listed in HCR 2018.

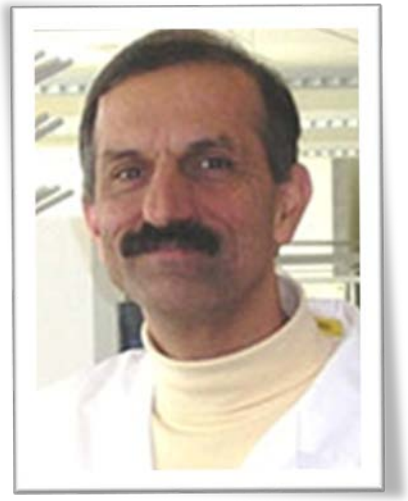
Bae Lab and friends enjoying dinner and camaraderie at the 2018 Departmental Holiday Party.

For a look at Dr. Bae's high profile paper, see "Oral Nanoparticles Exhibit Specific High-Efficiency Intestinal Uptake and Lymphatic Transport," by Kyoung Sub Kim, Kenichi Suzuki, Hana Cho, Yu Seok Youn, and You Han Bae, ACS Nano 2018 12 (9), 8893-8900.



The Ghandehari lab has been busy over the past year focusing on a number of drug delivery and nanotoxicology projects. In one project funded by an NIH small business Phase II grant (R42 CA168123) his research team is setting the stage for the commercialization of silk-elastinlike block copolymers as liquid embolics for the treatment of hepatocellular carcinoma. His research group has also received NIH funding (1R41 NS100184) for the development of this technology in treating brain aneurysms. Dr. Ghandehari and his lab members continue to investigate the influence of physicochemical properties of silica nanoparticles (such as shape, surface properties and porosity) on cellular uptake, biodistribution and in vivo toxicity. This project is the second competitive renewal of an R01 NIH grant (R01 ES024681) funded by the National Institute of Environmental Health Sciences. Hollow silica nanoparticles investigated in his lab have gained the attention of a local agricultural company, Aqua Yield, based in Utah for sustained delivery of agricultural products. More recently Dr. Ghandehari and his collaborator Dr. Oottamasathien at Massachusetts General Hospital, Department of Urology received an NIH grant (R01 CA227225) to investigate localized delivery of glycosaminoglycan ethers for the treatment of radiation induced proctitis.

FACULTY SPOTLIGHT



Professor Hamid Ghandehari

Students on Hamid's team garnered several local, national and international awards in 2018. These include Nithya Subrahmanyam who received an NIH-NRSA fellowship to pursue her work in water-soluble polymers to target the tumor-associated extracellular matrix, Martin Jensen who received a National Science Foundation Non-Academic Research Internships for Graduate Students (INTERN) Award, Pouya Hadipour for being selected for the Kumamoto Award for his excellence in research, Kyle Isaacson who received 3rd place in the Graduate Oral Presentation Competition at the Utah Biomedical Engineering Conference (UBEC), and Zachary Barber, an undergraduate researcher in the Ghandehari lab who received the 2018 Outstanding Undergraduate Student Researcher Award at the University of Utah.

In 2018 Dr. Ghandehari served as Chair of Programming Committee of the Controlled Release Society Annual Meeting held in New York City, was selected to serve as the Chair of NIH NANO Study Section from 2018-2020, and received a University of Utah College of Engineering Top Undergraduate Teacher Award. Hamid continues to serve as Editor in Chief of Advanced Drug Delivery Reviews, the leading review journal in drug delivery. During his service the impact factor of this journal has increased from single digit to double digits where it now stands at 13.66.

As an alumnus of both the professional pharmacy program (BS 1989) and pharmaceutics graduate program (PhD 1996) of the University of Utah Hamid is a staunch advocate of the U and looks forward to collaborating with our alumni to advance the mission of the department, college and our university. For more information feel free to contact him at hamid.ghandehari@utah.edu or visit his group's website at www.ghandeharilab.utah.edu.

Ghandehari Research Group - September 2018: Front row, left to right: Nitish Khurana, Shantell Garrett, Nithya Subrahmanyam, Guoshen Cao (rotation student). Back row, left to right: Oyvind Hatlevik, Martin Jensen, Austin Coleman, James Kirklow, Zach Barber, Doug Steinhauff, Hamid Ghandehari, Bhuvan Yathavan, Raziye Mohammadpour, Jennifer Carothers, Pouya Hadipour, Anna Deleray (rotation student), Darwin Cheney, Not pictured: Kyle Isaacson and Amy Wei.

FACULTY SPOTLIGHT

Professor David Grainger

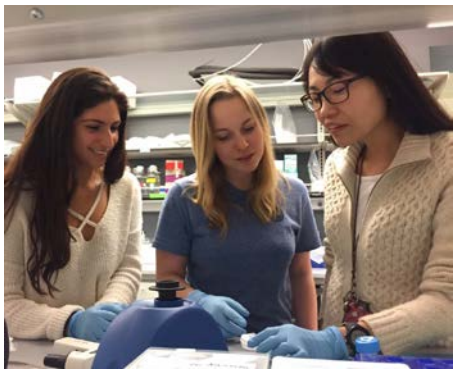
Dr. Grainger is now Distinguished Professor and Chair of the Department of Biomedical Engineering. He maintains a partial appointment in our department. He is also an Adjunct Professor in both Orthopedics and Chemistry.

In 2018, Dr. Grainger was granted the Daniels Fund "Ethics Initiative Leadership in Education Award" from Denver-based Daniels Foundation. In 2016, he was a Fulbright Senior Scholar (Univ. Otago, New Zealand).

The Grainger Group at the University of Utah currently pursues research in combination device development in antimicrobial implants, medical diagnostics, drug screening for nephrotoxicity, nanotoxicology, and cell-based therapies. His interdisciplinary approach uses materials chemistry and controlled release strategies in combinations to improve current medical device performance through local drug release. A recent translational breakthrough is the licensing of antimicrobial bone void filler technology to Elute, Inc. Elute's first bone void filler technology was granted FDA 510(k) approval (K171190); several Utah patents are licensed to Elute for first-in-human resorbable antimicrobial bone graft development.

Grainger's group works closely with Prof. Teruo Okano, Director of CSTEC@Utah (Utah's Cell Sheet Tissue Engineering Center). Dr. Okano pioneered cell sheet engineering technology by developing unique temperature-responsive polymer-coated culture surfaces necessary for creating and harvesting living cell sheets. Okano has brought this technology to the U.S. with Utah as exclusive operating partner in tandem with a Japanese consortium that has already placed cell sheets in humans in 7 different applications.

CSTEC@Utah develops cell sheets for tissue regenerative therapies. Cell sheets harvested via temperature responsive dishes retain their native extracellular matrix and surface receptor proteins. These characteristics play an important role in maintaining cell structure and function, and translate to a more effective regeneration potential compared with other cell therapies. CSTEC@Utah is a collaboration between the University of Utah (Grainger/Okano lab, in Pharmaceutics, the School of Medicine), Tokai University and Tokyo Women's Medical University, both in Japan.



CSTEC@Utah scientists Sophia Bou-Ghannam and Hallie Thorp (BioE grad students), and Kyungsook Kim (Research Assistant Professor).

Dr. Teruo Okano is a Distinguished Adjunct Professor in the Department of Pharmaceutics and Pharmaceutical Chemistry, UU, and is the co-Director of CSTEC@Utah. He is also Emeritus Professor at Tokyo Women's Medical University (TWMU) in Tokyo, Japan.

Dr. Kyungsook Kim, Research Assistant Professor in the Department of Pharmaceutics and Pharmaceutical Chemistry.

FACULTY SPOTLIGHT

Professor Sung Wan Kim

Dr. Sung Wan Kim is currently a Distinguished Professor of Pharmaceutics and Pharmaceutical Chemistry and a Distinguished Professor of Bioengineering. He is a Huntsman Cancer Institute investigator and a member of the Experimental Therapeutics program.

Dr. Kim is a pioneer in drug delivery research and has engaged in his research since 1974 in the areas of hydrogels, biodegradable drug conjugates, self-regulating drug delivery and stimuli sensitive polymers to selectively target cancer cells. He also worked extensively in medical polymers, especially blood compatible polymers.

Dr. Kim's present research includes design of novel polymers for the delivery of protein drugs, cells and genes in anticancer therapy.

Dr. Kim has received numerous awards; among them are the Research Achievement Award-Pharmaceutical Sciences World Congress (2004), Rosenblatt Prize (2003), Ho-Am Prize (2003), AACP Volwiler Award (2002), American Association of Pharmaceutical Scientists (AAPS) Dale Wurster Award (1998), the Controlled Release Society (CRS) Founders Award (1995), and the Clemson Basic Biomaterials Award (1987). These awards are the highest scientific awards from their respective societies.

In 2006, Dr. Kim received an honorary doctorate degree from the University of Twente. From 2004 to present, Dr. Kim is a Distinguished Professor at Hanyang University.

Dr. Kim has published over 500 papers and owns 29 U.S. Patents. He has trained over 130 scientists from 10 countries.

DR. KIM HAS BEEN ELECTED TO TWO U.S. NATIONAL ACADEMIES: THE INSTITUTE OF MEDICINE (1999) AND THE NATIONAL ACADEMY OF ENGINEERING (2003)

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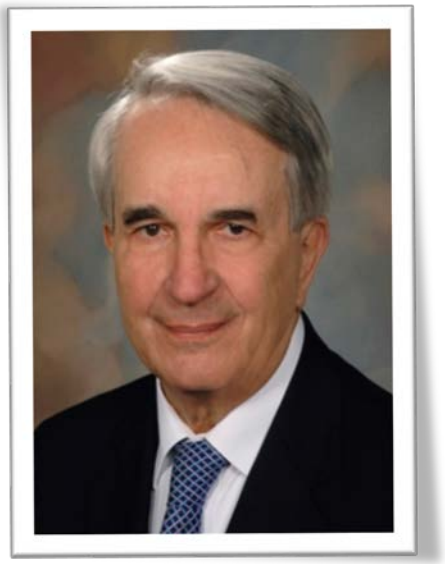
The National Academies of SCIENCES ENGINEERING MEDICINE

The National Academy of Medicine (formerly the Institute of Medicine) was established in 1970 under the charter of the National Academy of Sciences to advise the nation on medical and health issues. Members are elected by their peers for distinguished contributions to medicine and health.

The National Academy of Engineering was established in 1964 under the charter of the National Academy of Sciences to bring the practices of engineering to advising the nation. Members are elected by their peers for extraordinary contributions to engineering.

FACULTY SPOTLIGHT



Professor Jindrich Kopeček

Dr. Kopeček is a Distinguished Professor of Pharmaceutics and Pharmaceutical Chemistry and Distinguished Professor of Bioengineering. He was elected to the National Academy of Engineering in 2011.

In 2014, J. Kopeček received an honorary doctorate degree from The University of Helsinki, Finland.

In 2018, J. Kopeček received the T. & A. Higuchi Memorial Lectureship Award from the Academy of Pharmaceutical Science and Technology, Japan and was elected Fellow, US National Academy of Inventors.

The latest research topics in the Kopecek Lab include:

- Treatment of brain malignancies. A drug delivery system able to cross the blood-brain barrier was designed and is being evaluated.
- In collaboration with HCI investigators the activity of drug-free macromolecular therapeutics on patient cells with various B cell malignancies was proven.
- New design of antibody-drug conjugates for the treatment of acute myeloid leukemia.
- Combination of anti-PD1 immunotherapy with macromolecular chemotherapy for the treatment of breast cancer.

Scientists from other countries continue their interest to participate in our lab research. Recent Visiting Scholars include:

- Susumu Hama, Ph.D., Assoc. Prof., Kyoto Pharmaceutical University, Japan, sabbatical 2017-2018
- Zhou Zhou, Ph.D., Assoc. Prof. Sichuan University, China, sabbatical, China Scholarship Council Fellow, 10/2018-10/2019
- Yachao Li, Ph.D. student, Sichuan University, China, China Scholarship Council Fellow, 10/2018-10/2019
- Sirima Soodvilai, M.Pharm., Ph.D. student, Silpakorn University, Thailand, Royal Golden Jubilee Ph.D. program, 10/2017-05/2018
- Kehinde Salako, M.Sc., Lecturer II, University of Lagos, Nigeria, Fulbright Fellow, 08/2019-04/2020 in biology and medicine.
- Christian Bode, Pharmacy student, GPEN Program, University of Marburg 11/2018-5/2019.

Dr. Jiyuan (Jane) Yang is a Research Professor in the Kopeček Lab. She received her Ph.D. in Biomedical Polymer Science from Peking University in 2001. She joined the lab in 2003 following a postdoctoral fellowship at the Department of Physical Chemistry, Institute Curie in Paris, France.

Kopeček lab enjoying festivities at the 2018 Departmental Holiday Party.

FACULTY SPOTLIGHT

Professor Carol S. Lim, Interim Chair (2016-present)

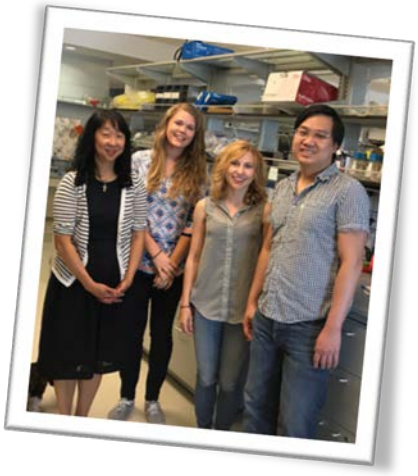
Dr. Lim served as Acting Chair of the department in spring of 2016, and was selected as Interim Chair and has served in this role since January 2017. Dr. Lim's main research interests are in biotechnology derived cancer therapeutics, with a current focus on ovarian cancer, liver cancer, and chronic myeloid leukemia.

Dr. Lim was one of three campus-wide recipients of the 2018 Catalyst Grants, funded by The Center for Genomic Innovation and the College of Pharmacy, UU. Catalyst Grants awardees study disease mechanisms and validate new therapeutic targets to treat many diseases, like cancer, leukodystrophy, and leukemia. Catalyst Grants support projects at the University of Utah Health that focus on the early stages of therapeutic development.

Dr. Lim was selected as one of the top THREE "Selected Highly Authors" of Molecular Pharmaceutics: a highly reputable journal published by ACS, in 2017.

Dr. Lim was awarded the P1 College of Pharmacy Teacher of the Year, as well as the Overall Distinguished Teacher of the Year during Convocation on May 5th, 2017. She was also the recipient of The Graduate School's Distinguished Mentor Award at the University of Utah. Three faculty per year are selected from all departments at UU. This award recognizes faculty who effectively guide graduate students and postdoctoral scholars throughout their professional training in a continuing, multifaceted partnership sustained by mutual respect and concern.

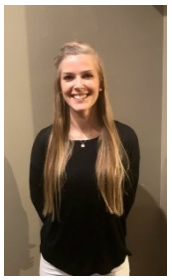
Dr. Lim's graduate students have garnered several awards. Katherine Redd-Bowman was the recipient of the Portland Chapter of the University of Utah Alumni Association Scholarship (2018); Erica Vander Mause was awarded The Ralph & Clara Rutledge Memorial Scholarship (2018) and the AFPE Pre-Doctoral Fellowship (2019); Phong Lu was the recipient of a Kuramoto Scholarship given by the College of Pharmacy (2017) as well as the Skaggs Research Fellowship (2018).



Lim lab, 2019. Dr. Lim, Katherine Redd-Bowman, Erica Vander Mause, and Phong Lu.

Both Katherine and Erica's research entails collaborations with researchers at the Huntsman Cancer Institute. Katherine collaborates with Dr. Kimberly Evason, M.D., PhD to conduct her mitochondrially targeted p53-BH3 gene therapy research for hepatocellular carcinoma using a zebrafish model. Erica collaborates with Djordje Atanackovic, M.D. and Tim Luetkens, M.D. on a cancer immunotherapy (CAR-T cell)/gene therapy combination therapy for ovarian cancer.

In late 2018, we welcomed Lisa Ahne from Univ. of Marburg who is doing research in our laboratory for 6 months. Lisa is a pharmacy student participating in the GPEN Program (Globalization of Pharmaceutics Education Network). Lisa is one of 5 GPEN students conducting research in our labs now.



The Lim Lab has trained ~150 students since 2000 ranging from PhDs, PharmDs, undergrads, and high school students. We strongly believe our research mission is closely tied to education and training the next generation of scientists.

FACULTY SPOTLIGHT

Professor John Mauger, Associate Vice President for Health Sciences Special Projects

Dr. Mauger served as Dean of the College of Pharmacy from 1994-2009 and has been a faculty member in our department. In 2018 he received the Dean Emeritus Award. He currently serves as the Associate Vice President for Health Sciences Special Projects.

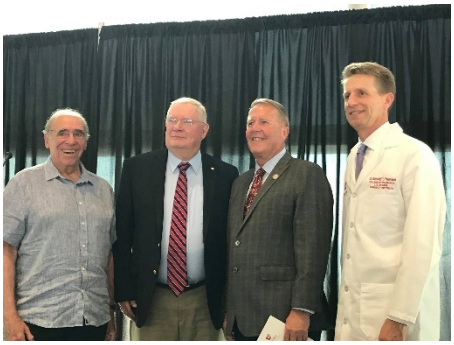
Dr. Mauger's professional interests include:

1) pharmacy education,

2) pharmaceutical research related to the physico-chemical characteristics of dosage forms,

3) service to organizations that address the world-wide need for quality medicines and foods, and

4) contributions of the arts and sciences to society.



4 deans (3 former) of the College of Pharmacy gathered together at the 2018 PharmD White Coat Ceremony: Hal Wolf, John Mauger, Chris Ireland, and current Dean Randy Peterson.

Warm regards to Dr. John Mauger for receiving the Dean Emeritus Award from the university for his years of service and dedication! We have been honored and privileged to have Dr. Mauger as a vital contributor in our department, and as a former dean of the College of Pharmacy.

We participate in "**One U**." "If you've heard President Ruth Watkins speak since becoming president last April, you've probably heard about the power of "One U." What this means, she explains, is that we have the opportunity to work together to solve big problems in society and also optimize our campus resources." (www.utah.edu)

GLOBAL RESEARCH- GERMANY

The GPEN Program (Globalization of Pharmaceutics Education Network) allows students from one member university to conduct research at other member universities. We currently have 5 GPEN students conducting research in our labs now for 6 months. The GPEN research exchange with Univ. of Marburg has been ongoing since 2001.

2018-2018 GPEN Students: Linus Wolf (Owen Lab), Lisa Ahne (Lim Lab), Sophia Uhlhorn (Grainger Lab), Laura Unverzagt (Ghandehari Lab), and Christian Bode (Kopecek Lab).

GPEN students often continue their research careers in science after completion of their internships. For example, Stelios Florinas (Kim Lab) and Karina Matissek (Lim Lab) returned to the University of Utah as graduate students in our department. Stelios is now a Senior Medical Science Liaison in Immuno-Oncology at Immunocore, the leading T Cell Receptor (TCR) biotech company (Germany), and Karina is a Medical Science Liaison in Oncology at Boehringer Ingelheim in the greater Boston area.

UNDERGRADUATE RESEARCH

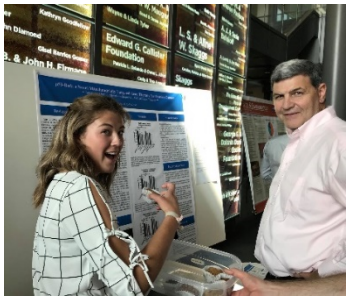
Zachary Barber, an undergraduate researcher in the Ghandehari lab received the UU 2018 Outstanding Undergraduate Student Researcher Award. Congrats, Zach!

HIGH SCHOOL PROGRAM

Our department and other departments in the College of Pharmacy are active in training the next generation of scientists and participate in the Juan Diego Catholic High School (JDCHS) Summer Research Program for high school students at JDCHS. Dr. Lim has been the Director of the program on the UU side, with Dr. Christine Celestino as the Director of the program at JDCHS.

The JDCHS Summer Program is generously funded by the ALSAM Foundation. The colleges takes 10-15 students per year (screened by Dr. Celestino), and the program runs from June-August culminating with a poster session presented in the College of Pharmacy, and often use the data for the science fair. The JDCHS students meet once a week with Dr. Celestino (from JDCHS) and receive lab training prior to coming to us. Dr. Celestino received the Utah Governor's Medal for Science and Technology in 2015 for her efforts in training the next generation of scientists.

Students in this program typically do very well in the science fair. This past year, Erin Garzella (Ghandehari Lab) won 4th place in the Materials and Biomedical Engineering category; Natalie Morgan (Owen Lab) won a $4000 scholarship to Westminster College; Madeline Joklik-McLeod (Lim Lab) was awarded 1st place in the Biology and Biochemistry, and was one of 5 students (among 721 projects), chosen to represent the State of Utah at the International Science and Engineering Fair this spring in Phoenix, AZ.



Madeline Joklik-McLeod, selected for 2019 Int'l Science and Engineering Fair.

2018 JDCHS Summer Program Students (with Dr. Lim)

See a KSL newsclip on the program:: https://www.ksl.com/article/35837769/teens-inspired-to-pursue-science-after-summer-of-research-at-the-u.

Spring Newsletter

Department of Pharmaceutics and Pharmaceutical Chemistry 2019

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Donor Opportunities

We welcome contributions to make a difference in our department. Please consider donating to the department in the following ways:

-**Graduate Student Emergency Health Fund**: Student health insurance is not adequate if students have a major health crisis, such as emergency surgery. One of our graduate students, Phong Lu, recently had emergency surgery, and his out-of-pocket costs even with insurance were $4000! We would like to have an emergency reserve fund available to students for catastrophic situations such as this.

- **Student Scholarships**: Please consider donating towards graduate student scholarships for exceptional students in our department.

-**Fox Award donations:** Each year, we honor the memory of Dr. Jeffrey Fox with this award. The award is intended to recognize an outstanding graduate student based on the recommendation of his or her peers. Award recipients are selected based not only on academic merit, but also on service to the Department, the University, and to fellow students.

-**Department development account:** funds to be used at the department's discretion.

-**Other donation opportunities**: Be creative in helping our department thrive! Please contact us if you have other donation ideas.

FOR MORE INFORMATION

Please contact us with your feedback!
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