

# The *Catalyst*

Department of Biochemistry

2017



New look • New perspectives • Change at the top

**PURDUE**  
AGRICULTURE



*Andy Mesecar, a 1988 graduate of Purdue, has led the university's Department of Biochemistry since August 2015. His academic and professional journey took him to the University of Notre Dame, the University of California, Berkeley, and the University of Illinois, Chicago. For more, turn to Pages 4 and 5.*

# Welcome

Dear alumni, students, staff, faculty and friends of the Department of Biochemistry:

*The Catalyst* is back after a brief hiatus that occurred during my transition into the department to take over as the new head. I want to sincerely thank Dr. Clint Chapple for all his help during this transition and especially for his service as department head for more than seven years. He handed me the reins to a wonderful and thriving department.

In August 2015, I joined the faculty in the Department of Biochemistry after spending five years in the Department of Biological Sciences. Prior to coming to Purdue, I was a faculty member for 11 years in the Department of Medicinal Chemistry and Pharmacognosy at the University of Illinois, Chicago. During my years at UIC, I became actively involved in drug discovery research involving plant-derived natural products, and I gained a deep appreciation for the impact of plants on human health. I became actively involved in multi-disciplinary collaborations between biochemists, chemists, structural biologists, ethnobotanists, phytochemists, molecular biologists, etc. Since the Department of Biochemistry has faculty in a number of these areas, I was honored to be approached about becoming the new head. Moreover, I was excited to join a group of highly accomplished and collaborative faculty with whom I had been working via the Center for Cancer Research, where I serve as the Deputy Director.

This edition of *The Catalyst* features stories and accomplishments from the past two years. For example, Dr. Jeremy Lohman joined the faculty in 2014 as a new assistant professor. He studies the biochemistry and structural biology of natural product biosynthetic enzymes for combinatorial biosynthesis. You can read more about Professor Lohman and his research on pages 2-3. We are also very proud of Mr. Quinton Nannet, who was awarded the 2016 G.A. Ross Award for Outstanding Senior at Purdue! Quinton is now attending the Indiana University School of Medicine. Read more about Quinton on the facing page.

Finally, we are giving *The Catalyst* a contemporary look and a more story-oriented format. We want to include news about you, so please send us your stories and updates. We hope you enjoy this edition of *The Catalyst*.

Andy Mesecar

# On the cover



Purdue's Department of Biochemistry has a long history of attracting the best and the brightest — outstanding undergraduates, graduate students who are passionate about everything from curing cancer to the development of sustainable biofuels, and faculty who are leaders in their fields.

The departmental laurels continue, courtesy of Quinton Nannet (B.S. 2016), who is featured on *The Catalyst* cover. In May he was named the winner of the 2016 G.A. Ross Award, given to a graduating male student who has demonstrated high standards of academic achievement, evidence of outstanding leadership, strength of character and overall contributions to the university. Nannet also received the 2016 France A. Córdova Award for Leadership in Action and the John Wooden Leadership Award.

The New Richmond, Indiana, native excelled not only in the classroom but outside as well. He was involved with the Old Masters program, Boiler Gold Rush and Mortar Board, was a resident assistant at Wiley Hall during his senior year, and was one of the Ag Ambassadors, who represent the college to prospective students and alumni. In 2013, Nannet co-founded a campus chapter of MEDLIFE (Medicine, Education and Development for Low-Income Families Everywhere). He also co-founded the Purdue Global Aid Committee to facilitate interactions between student organizations that promote global service opportunities.

Nannet started working in Dr. Joe Ogas' lab his sophomore year and continued throughout his college career. He also found time to study abroad.

Nannet is wrapping up his first year at the Indiana University School of Medicine.

Read more about Nannet and other outstanding Biochemistry students, staff, faculty and alumni in the pages ahead.

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# Helping antibiotics reach their potential

By Jeremy Lohman  
Assistant Professor  
jlohman@purdue.edu



## A brief history of antibiotic discovery

Most people have heard about the serendipitous discovery of penicillin, which is produced by a mold, by Alexander Fleming in 1928. The term “antibiotic” was coined by Selman Waksman, who discovered many antibiotics from *Streptomyces* species. The most important of these was streptomycin, which he identified in 1945, the first antibiotic effective against *Mycobacterium tuberculosis*. Those initial discoveries sparked efforts to mine nature for other microbes that produce antibiotics, and ushered in the “golden era of antibiotics.”

Until the 1970s, therapeutics from microbes were consistently discovered and applied toward not only microbial infections, but also cancer and other diseases. The *Streptomyces* species were especially fruitful, and are known as some of nature’s best chemists, producing molecules whose synthesis often baffle our best synthetic organic chemists. During the 1970s antibiotic discovery sharply declined once the most common molecules had been discovered. As a result, pharmaceutical companies turned away from microbial antibiotics in favor of combinatorial synthesis, but this approach largely failed to provide new therapeutics of value. To make matters worse, antibiotic-resistant pathogens like MERSA are gaining in prevalence.

## How I came to study antibiotic biosynthesis

I grew up on a small farm in Eastern Washington, where we raised cows and pigs. Whenever our animals became ill, although rarely, my dad would give them penicillin, and these instances were my first interactions with antibiotics. In my undergraduate studies at Washington State University, I worked with Dr. Lisa Gloss, who taught me about how enzymes fold and catalyze chemical reactions. It was at that time that I became interested in the relationship between the 3-dimensional structure of an enzyme and catalysis, the kind of chemistry that an enzyme can carry out. Upon starting graduate school at the University of Oregon, I received training in protein crystallography from Dr. S. James Remington and Dr. Brian Matthews.

My projects involved engineering a green fluorescent protein to measure oxidant/reductant balance in cells, and rational drug discovery for agents that would stop the growth of *Mycobacterium tuberculosis*. Near the end of my graduate studies, I thought about how I might combine protein engineering and drug discovery. At one point, I realized that I had been using microbially-derived antibiotics in the lab since my undergraduate days and even saw them used as a child and asked myself, "Can I use protein engineering to generate new antibiotics to overcome the growing problem of antibiotic resistance?" At that moment I decided to switch fields and join a laboratory studying how bacteria make antibiotics.

I joined the University of Wisconsin laboratory of Dr. Ben Shen, who had made seminal discoveries that revealed how many potent antibiotics are made, and had demonstrated the ability to produce new antibiotics by re-engineering bacteria to be antibiotic factories. Over a few years and a move with Dr. Shen from Wisconsin to the Scripps Research Institute in Florida, I learned the ins and outs of bacterial genetics and antibiotic isolation and purification.

## Reverse engineering antibiotic evolution to make analogs

When I first started my postdoc, we knew little about the DNA sequences (the so-called genomes) of *Streptomyces* strains. Technological innovations over the intervening years have made DNA sequencing cheaper and faster, and today we know the complete DNA sequences for a few hundred strains of *Streptomyces*. These sequences showed that very different strains of *Streptomyces* had relatively similar biosynthetic pathways and produced antibiotics that had small but important changes in structure. I realized that nature is already shuffling genes to generate new antibiotics!

Now my task is to reverse engineer the evolution of the enzymes that generate these potentially valuable antibiotic variants and generate new medicines that overcome the problem of antibiotic resistance or have improved pharmaceutical properties.



# ANDY MESECAR



## The new head has long Boilermaker ties

Andy Mesecar stepped into the role of Department Head on August 1, 2015, after a 30-year academic journey that began in West Lafayette.

He completed his B.S. in Chemistry degree at Purdue University in 1988. Dr. Mesecar earned a Ph.D. in Biochemistry under the direction of Professor Thomas Nowak in 1995 from the University of Notre Dame in South Bend, his hometown. Then, at the University of California, Berkeley, he completed a post-doctoral fellowship in structural enzymology and X-ray crystallography with Professor Daniel E. Koshland Jr.

In January 1999, he started his career as an assistant professor in the Department of Medicinal Chemistry and Pharmacognosy and the Center for Pharmaceutical Biotechnology at the University of Illinois, Chicago (UIC). There he initiated his research into the basic biochemical and structural mechanisms of how natural products and dietary molecules, such as resveratrol from wine and sulforaphane from broccoli, prevent cancer. In 2005, Professor Mesecar established a high-throughput screening facility for drug discovery at UIC and launched a series of structure-based inhibitor design projects on enzymes as drug targets for anti-infective and anti-cancer therapeutics. He continues that work today.

He rose through the ranks at UIC and was promoted to full professor in 2008. He served as the assistant head of the department from 2009 until the time he left for Purdue. In August 2010, Purdue recruited him to be the Walther Professor of Cancer Structural Biology. His lab works to decipher the atomic resolution structures of enzymes that are promising new drug targets.

While he continues his quest to find natural product-derived therapeutics that prevent cancer, his lab is searching for new anticancer agents to fight multiple myeloma, prostate and breast cancer. In addition, Professor Mesecar's lab is developing novel antiviral agents and attenuated vaccines that can be used to treat or prevent human respiratory infections caused by coronaviruses, such as the Severe-Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS), as well as animal coronaviruses that kill pigs (Porcine Epidemic Diarrhea Virus, or PEDV) and cats (Feline Infectious Peritonitis Virus, or FIPV).

He has authored more than 125 scientific publications and presented his research in over 150 seminars and poster presentations. His research is funded by grants from the National Institutes of Health, the Walther Cancer Foundation and the Department of Defense. Since 2010, Professor Mesecar has been serving as the Deputy Director of the Purdue Center for Cancer Research.

In his spare time, which seems to be sparse these days, he loves to cook, attend and watch college football games, throw tailgate and other parties, and just hang out with his daughters Monica, 18, who wants to be a biochemistry major in college, and Lauren, 13, and his wife, Gail. His hobbies include building and operating radio-controlled cars, boats and drones, and DIY repairs and remodeling around the house.



# Creating a new generation of biochemists



One of the goals of the College of Agriculture and the Department of Biochemistry is to expand the pool of elementary and high school students interested in natural sciences. To this end, the department engages in a number of outreach activities throughout the year, targeted at students ranging in ages from 6 to 18, and from diverse racial, cultural and socioeconomic backgrounds.

The **Purdue Agribusiness Science Academy** is specifically aimed at recruiting students from underrepresented populations with a multi-level program that is managed by the Office of Multicultural Programs and sponsored by Dow AgroSciences. The Department of Biochemistry has participated in this program for many years. In May each year, day-long events are held in Indianapolis and northern Indiana.

More than 200 middle school students are given the opportunity to learn about the programs offered in the College of Agriculture, including Biochemistry. In July each year, a two-week academy is offered for rising juniors and seniors to experience college life and gain a more immersive experience of the programs offered.

In 2002, Purdue University, along with the Indianapolis Public School system and local business community, pioneered a plan to increase diversity in STEM fields. Students are eligible to apply to **Science Bound** from sixth grade, and upon admission to Purdue and enrollment in a STEM major, are offered a 4-year scholarship. The program is designed to not only prepare students for life at Purdue, but also give them the resources they need to be successful, and a network of support on which they can rely while at

Purdue. The Department of Biochemistry is lucky to have enrolled a number of Science Bound students in its undergraduate program. Along with Dr. Orla Hart, Clinical Teaching Assistant Professor, the department offers a sample of biochemistry research to current Science Bound students who complete micro-projects, such as a forensic science-themed activity whimsically titled “Who Killed Peyton Manning?”

In mid-July every year, Purdue hosts **Experience Purdue**, a day-long event designed to showcase Purdue’s excellence to high-ability high school seniors. Students and their families spend the day learning about all Purdue has to offer. In the afternoon, Dr. Hart offers a hands-on, minds-on workshop, like the one titled “Getting the fuel out of biofuels: Mushrooms are more than just a pizza topping.” Students are exposed to practical biochemistry experiences and challenged to start thinking about societal problems that biochemistry may allow them to answer.

Known colloquially as the “Nobel Prize for Agriculture,” the World Food Prize has a special relevance to our college. We have the distinction of claiming two World Food Prize laureates, Phil Nelson in 2007, and Gebisa Ejeta in 2009. Each year Purdue invites Indiana high school students and their teachers to participate in the **World Food Prize Youth Institute**, a two-day event where they interact with and learn from experts in agriculture and other natural sciences related to global food security. During the event, five participants are selected to represent Indiana at the Global Youth Institute in Des Moines, Iowa. In addition, the Department of Biochemistry hosts a workshop where students get to explore a topic related to biochemistry and food/agricultural science. Recent alumna Courtney Orme (B.S. 2015) has spearheaded this event for the last two years, under Hart’s supervision, to rave reviews from students, teachers, and the coordinators of the World Food Prize Youth Institute in Iowa.

4-H is the nation’s largest positive youth development and youth mentoring organization. 4-H Career Exploration Day is part of **4-H Roundup**, a three-day event hosted each year by Purdue, which gives youth from all over Indiana an opportunity to experience life at Purdue and get hands-on experience in different disciplines. This year, the department offered a class investigating properties and analysis

and discussing the effects of consuming commonly used artificial food dyes, currently a very topical and controversial issue. The students attending showed a remarkable level of critical thinking and high skill level, using spectrophotometry, electrophoresis and chromatography techniques.

The **Purdue Biochemistry Club** is an undergraduate student organization and a student chapter of the American Society for Biochemistry and Molecular Biology. Outreach is a central part of the mission of the club, and members are involved in several activities throughout the year that reach in excess of 1,000 elementary school children, and which increase the visibility of the department both in the community and across campus. Some of the events in which they participate include a recurring educational program with local schools, external events such as Celebrate Science Indiana, and ongoing Purdue events such as B-Involved, ice cream socials, and Ag Week. These all culminate with Spring Fest, at which up to 700 visitors come through the department in two days, getting hands-on experience with a range of biochemical activities. The Biochemistry Club embarked on an exciting new venture by partnering with the Purdue Science Olympiad Club to host a regional Science Olympiad event on campus in February. The club mobilized approximately 100 volunteers to manage the logistics of running this event for over 500 high school students, teachers and parents. One of the benefits of being involved in this event was shining a spotlight on our department and the undergraduate program, and it is expected to have a significant impact in attracting high-ability students.

In addition to the efforts listed above, it is worth noting that many more students, staff and faculty in the department perform informal outreach (volunteering for speaking events at schools, science fair judges, etc.), thereby building the reputation and recognition of the department in the community. This reflects their passion for science and an understanding that it is our responsibility as part of a land-grant and publicly funded institution to effectively engage all areas of the public, and provide access and resources to those who wish to pursue a career in the life sciences. We continuously strive to recruit and engage the brightest minds, to perpetuate the work done by the people who have built the reputation of the Department of Biochemistry.

**Biochemistry:** The science that deals with the chemistry of living systems and their components; it deals with such areas as chemical composition, metabolism, nutrition, energetics, enzyme function, transfer of genetic information, membrane properties, cellular organization, and molecular diseases of living organisms. *Dictionary of Biochemistry & Molecular Biology, 2nd Edition. 1989, by J. Stenesh. John Wiley & Sons*



**Jay Akridge**

**Glenn W. Sample Dean of Agriculture**

Much of our college's work is focused on life science – animals, plants, ecology, biological engineering, food science, and more. We bring the life sciences to bear on some of our world's most challenging issues: food security, the environment, renewable energy, human health. Addressing these global challenges means we must unlock some of life's most complex mysteries. Our Department of Biochemistry, by exploring the basic molecular processes underpinning all life, provides the fundamental science that undergirds the translational and applied research of our College. The department is home to a superb undergraduate program that is training the next generation of scientists, physicians, and veterinarians. As a college, we could not be more excited about the work of the Department of Biochemistry!



**Scott Briggs**

**Associate Professor**

Research focus: Role of histone methylation in gene expression and oncogenesis.

The definition of biochemistry is constantly changing. Initially, I thought that biochemistry was a comprehensive study of how your favorite enzyme/protein functions. After nearly 25 years in the field, I have a much broader appreciation and viewpoint of biochemistry due to the advent of new technologies that permit us to do large-scale science and data analysis. Because of this, we can obtain vast amounts of information on one or more enzymes and determine how these proteins globally impact the biochemical and cellular function of an organism.



**Bob Stephenson**

**Assistant Researcher**

Research focus: Regulation of DNA replication in *Drosophila* by cell cycle regulatory proteins and histone-modifying enzymes.

Biochemistry is the way we, and all living things around us, work. It is the method by which our planet's resources accomplish processes related to life. For instance, cells have the need to store information, and nature's biochemical answer is DNA. The research we are doing in the Weake lab with *Drosophila* Cdc-7-Dbf4 could rapidly provide insight into conserved aspects of the human cell cycle, and therefore be applied to the development of novel cancer treatments.



**Peng Wang**

**Graduate student**

Research focus: Metabolic flux analysis and kinetic modeling of plant-specialized metabolism.

Biochemistry is moving away from the study of individual biochemical reactions and toward the investigation of systematic biochemical networks. We are utilizing mathematical tools to analyze various omics data in order to understand the dynamic biological process in the cells. The research I am doing in the Chapple lab with measuring and modeling the phenylpropanoid metabolic flux in *Arabidopsis* will directly impact biofuel production.



**Quinton Nannet**

**B.S. 2016**

Now at Indiana University School of Medicine

Biochemistry is a puzzle, with the pieces being molecules and processes. The experiences working in Dr. Ogas' lab have been invaluable in my studies and decision to pursue medicine. I see medical analyses and lab research to be similar in that you must determine the exact cause of the problem from a realm of infinite possibilities. The process has been challenging, yet invigorating, to apply classroom material to practical significance, especially with the potential to expand the frontiers of knowledge to improve and save lives.

# Standing on their shoulders

## Grateful alumni thank Biochemistry faculty for priceless memories

By Kelly Delp, Director of Development, College of Agriculture

Every university, college, and academic department believes it has great alumni. Purdue is no exception, and generous alumni play vital roles in supporting undergraduates, graduate students and the entire Department of Biochemistry.

Alumni offer up a range of reasons when asked why they have chosen to support Purdue Biochemistry. The one constant: They had great experiences in our department.

“What made Purdue wonderful for me was the camaraderie of the graduate students and faculty,” says Richard Sleight (Ph.D. 1981). “On Fridays at about 6 p.m., many students and faculty would go to Pizza Keg for pizza and beer. I learned more about faculty jobs, university politics, grants, NIH policies, and the expectations for successful scientists at these gatherings than anywhere else. I did not realize at the time that it was the best career counseling one could ever receive.”

Mark Fretz (B.S. 2001) says, “Dr. Klaus Herrmann was my favorite professor as he challenged me to think about molecules and their interactions. It has been a tool that has helped me in my career as I contemplate how organic molecules will interact in the metalworking process.”

Two professors — Roy Whistler and Joe Kuc — influenced Donald Weeks (B.S. 1963). “Dr. Whistler was an inspiring individual, especially to a naïve young student like me.” He recalls Kuc leading “a two-semester, graduate-level biochemistry course that was the toughest, most demanding course I took as a senior at Purdue. But this course also offered my first taste of what it is like to be a professional in science and to help unlock the mysteries of how life processes function.”

Like many alumni, Stephen Coburn (M.S. 1961, Ph.D. 1964) had a mentor in the Department of Biochemistry, and that relationship lasted long after Coburn left campus. Edwin T. Mertz often visited Coburn in Fort Wayne, Indiana. “He would have dinner at our home, and we would play music — him on the piano and me on the organ,” Coburn says. “We have a video of us playing at my daughter’s wedding reception at our home along with my father on the banjo and my wife’s father on the violin.”

Brad Sheares (Ph.D. 1982) became a Purdue graduate student because of another Purdue Biochemistry alumnus, Henry Moses, who taught Sheares as an undergraduate at another university. “He encouraged me to pursue a Ph.D. I had no idea where to go, and he said, ‘You should go to Purdue. That’s where I went.’ So I came to Purdue.” Sheares says he is grateful for the education and the guidance he received from the Department of Biochemistry.

There are great examples of support wherever you look in the Department of Biochemistry. Sleight and his wife, Dr. Barbara Sleight, support graduate students. “I would have never been able to attend graduate school and earn a Ph.D. without receiving full financial support,” he says. “Most of the wonderful opportunities and professional experiences I’ve had can be traced back to my time at Purdue.” A gift from the Sleights will fund a Biochemistry graduate student assistantship.

Mark Fretz began giving back to the department not long after graduating. “I contribute to the Biochemistry program exclusively. That is no accident,” he says. Shortly after leaving the university he realized how important the reputation of Purdue and the Department of Biochemistry are to him as an alum, he says, and he wanted to give back.

Coburn and Weeks both support Biochemistry through undergraduate scholarship support. Coburn and his wife, Charlotte, recently created an undergraduate scholarship “because we felt that Biochemistry offers a uniquely versatile career opportunity.” The inaugural scholarship recipient was selected in 2015. Weeks says he and his wife, Rita, “are very pleased to be able to provide a new scholarship opportunity to Purdue undergraduate students and to Biochemistry majors, in particular. My ability to attend Purdue was based in large part on the financial support provided by various scholarships I received during my undergraduate days.”

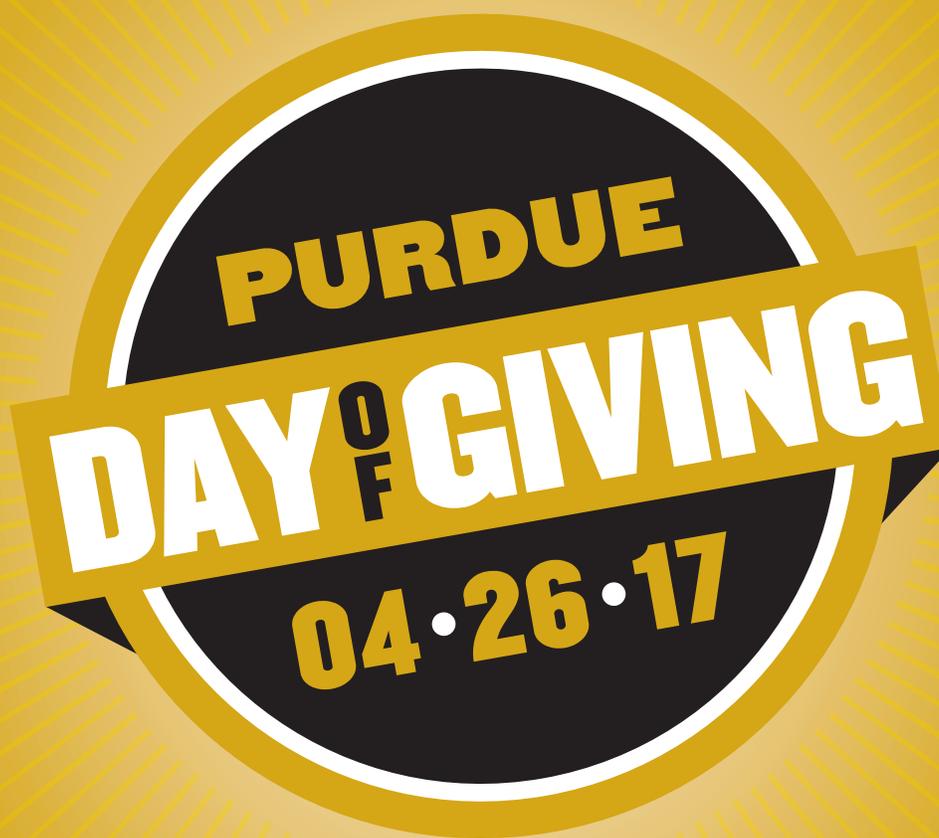
Dr. Sheares and his wife, Adrienne Simmons, tied a specific person and a specific achievement to their new annual award. “I wanted to recognize Dr. Henry Moses as a mentor of mine and give something to Purdue Biochemistry because it was important to me,” Sheares says. The award, named for Dr. Moses, was established to recognize a graduate student’s first publication. It was presented for the first time at the Department of Biochemistry’s 75-year anniversary celebration, and Dr. Moses was in attendance.

Each alumnus who contributes to the Department of Biochemistry does so for individual reasons that often come down to respect and deep appreciation for the Purdue Biochemistry education they received and the faculty and mentors they met along the way.

As Sheares says, “All of us are standing on the shoulders of those who paved the path for us, gave us guidance. I can’t think of two things I would like to recognize more.”



(From left): Dr. Brad Sheares, Ms. Adrienne Simmons, Dr. Henry Moses and Juan Martinez, the first recipient of the Henry A. Moses Award in October 2009. Martinez was recognized for his early career publication titled “Acm1 is a negative regulator of the CDH1-dependent anaphase-promoting complex/cyclosome in budding yeast.” (Martinez, J.S., D.E. Jeong, E. Choi, B.M. Billings and M.C. Hall. 2006. *Mol. Cell Biol.* 26:9162-9176.)



**Mark your calendar, set alerts, start your engines and get ready to Boiler Up — Purdue Day of Giving is right around the corner!**

On April 26, the Purdue community will work together to build the future of our University, paying forward the opportunities that make Purdue the shining example of education at the highest proven value. We have our work cut out for us — last year, in just 24 hours, the Purdue community generously gave a record-breaking \$18.3 million through 12,872 individual gifts!

Again this year, the College of Agriculture will have its own leaderboard. You can help the Department of Biochemistry get to the top of the leaderboard by making a gift to the general Biochemistry Scholarship fund. The general Biochemistry scholarship will be awarded in 2017-2018. Want to give to another fund in Biochemistry? You can do

that, too. Any gift to Biochemistry counts on the College of Agriculture Day of Giving leaderboard.

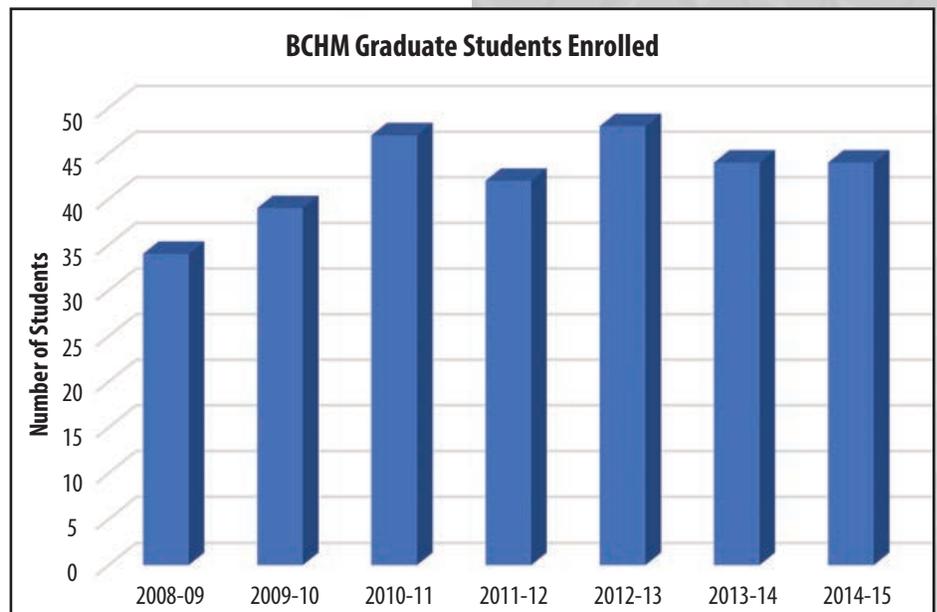
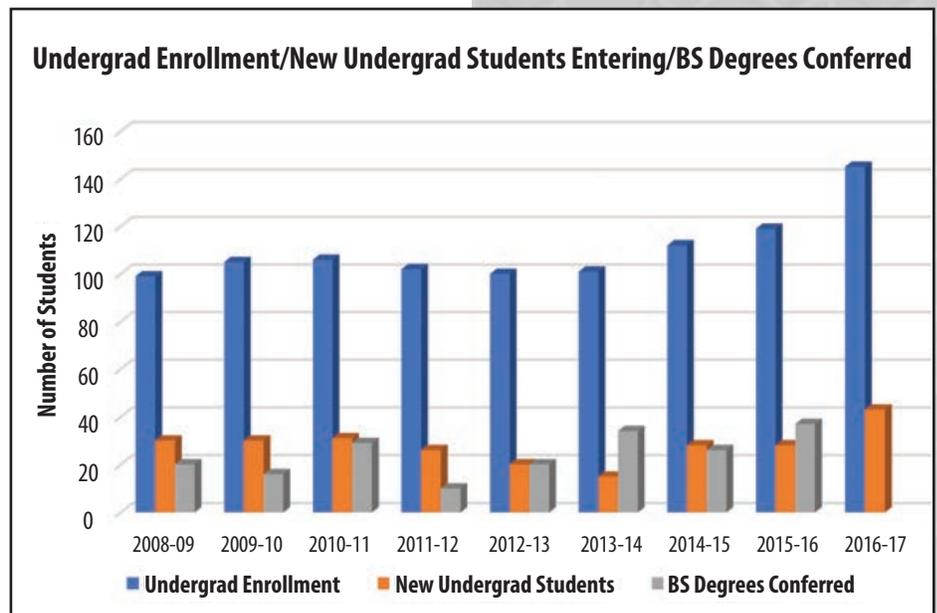
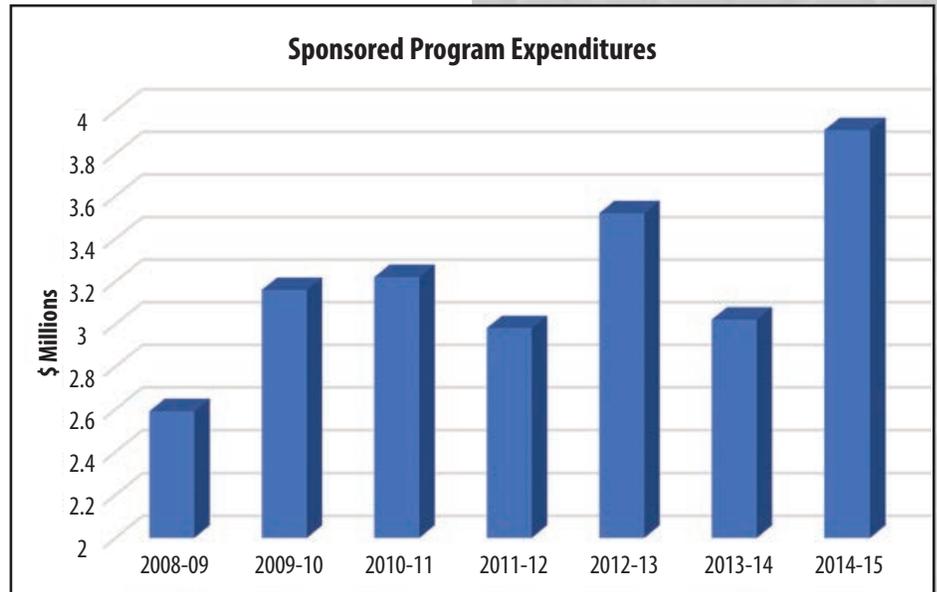
In 2017, we will also have more social challenges, bonus funds, and, of course, some good old-fashioned rivalry, with plenty of chances to push your favorite college, school, program, unit or student organization to the top.

In the meantime, help spread the word far and wide by sharing content using **#PurdueDayofGiving**. Together, we can grant opportunities that will shape Purdue for generations to come.

To donate to Biochemistry, please visit **[Giving.Purdue.edu/Biochem](http://Giving.Purdue.edu/Biochem)**.

# Year in review

There are a number of important metrics, such as faculty research grant expenditures and undergraduate and graduate student enrollment, that Purdue University uses to assess departmental progress. Such metrics are used in part for determining our departmental budget and the number of faculty positions. These charts give a snapshot of the past few years and show that we are well-positioned for continued growth.



# They've earned it

*Achievements, promotions, awards*

The **Biochemistry Club** was awarded an Outreach Seed Grant by the American Society for Biochemistry and Molecular Biology (ASBMB) in 2014 to expand the scope of their outreach goals in the coming year. The club is a chapter of the ASBMB's Undergraduate Affiliation Network. The proposal focused on expanding outreach activities in an efficient manner to middle- and high-school kids and includes an assessment strategy to measure impact.

Graduate student **Anwasha Sanyal** (Mattoo lab) was a 2014 recipient of a Yeunkyung Woo Achieve Excellence Travel Scholarship fund in the Department of Biological Sciences.

Undergraduate **Michael Busche**, double-majoring in biochemistry and plant genetics, participated in the 2014 Gulf Coast Undergraduate Research Symposium at Rice University. He presented a poster titled "Investigation of genes influencing protein digestibility in Sorghum bicolor" and placed first in the biochemistry and cell biology division. He was also one of three Purdue College of Agriculture undergraduate students chosen to participate in the new "PotashCorp Executive i2i Pathway to Excellence, 2015-16" program. The PotashCorp Executive i2i Pathway to Excellence is a program run in collaboration with Southern Illinois University and Purdue. Faculty members at SIU and Purdue University serve as mentors to PotashCorp Executive i2iPathway to Excellence students at their respective institutions.

Twice a year the department awards travel grants to postdocs and/or graduate students. The Henry Weiner Travel Award and the Beach Travel Award allow these individuals to defray costs to attend scientific meetings. Recent winners in the past two years include: **Zhiguo Li** (Liu lab), **Linna Wang** (Tao lab), **Brendan Powers** (Hall lab), **Laura Henry** (Dudareva lab), **Jeong Im Kim** (Chapple lab), **Chen Shao** (Liu lab), **Nina Serratore** (Briggs lab), and **Chris Petell** (Gowher lab).

**John Morgan**, Professor of Chemical Engineering, joined the department in November 2014 as a courtesy Professor of Biochemistry. Morgan is also the Director of Graduate Studies in Chemical Engineering and Associate Editor of *Bioprocess and Biosystems Engineering*.

**Pete Pascuzzi**, Assistant Professor of Libraries and Molecular Biosciences Information Specialist, joined the department in November 2014 as a courtesy Assistant Professor of Biochemistry.

**Stefan Paula**, Associate Professor of Practice, joined the department in January 2015 with a joint appointment with the Department of Chemistry, College of Science.

Three Biochemistry seniors (**Allison Norvil**, **Mitch D'Aloia** and **Kyle Robinson**) received 2014 Dow AgroSciences Research Awards.

**Kristi Trimble**, former Administrative Assistant, received the 2014 Eudoxia Girard Martin award. The annual award recognizes a staff member who is a full-time administrative assistant or level five secretary. The selection is based on the degree to which the recipient, in service to the university community, demonstrates qualities of heart, mind and spirit that evince a love for and helpfulness to students, faculty and staff. Trimble retired in February 2015 after more than 30 years with the university.

**Dr. Craig Peterson** from the University of Massachusetts Medical School, Program in Molecular Medicine, presented the 2015 Bernard Axelrod Lectures on March 24-25.

**Whitney Dolan** (Chapple lab) was selected as a participant in the ComSciCon June 2015 National Workshop. Out of over 970 applicants, Whitney was one of 50 students chosen for this highly selective workshop.

**Beth Tran** was promoted to Associate Professor of Biochemistry.

**Aamir Mir** (Golden lab) was awarded travel grants from both the RNA Society and the Purdue Graduate Student Organization. He used the awards to attend the RNA Society meeting in Madison, Wisconsin, in May 2015.

**Barb Golden** and **Beth Tran** serve on the RNA Society Board of Directors. Golden's term is from 2015 to 2017, and Tran's is from 2016 to 2018.

Graduate student **Ji Chen** (Golden lab) received an award for his poster "Engineering a ribozyme with tRNA synthetase activity" at the 20th Annual Meeting of the RNA Society. The \$200 cash award was sponsored by New England BioLabs and was for "general excellence in RNA research." Ten posters out of more than 530 were selected for poster awards at the meeting.

Graduate students **Long Chen** (Liu lab) and **Jesse Murphy** (Kappock lab) were 2015 recipients of one-year Purdue Research Foundation (PRF) Research Grants. These grants are provided by the College of Agriculture in conjunction with the Office of the Vice President for Research. Chen's research project is titled: Targeting chaperone system to enhance chemotherapy efficiency in cancer treatment. Murphy's research project is titled: Proton exchange without condensation in *Acetobacter aceti* citrate synthase.



The undergraduate student-run Biochemistry Club officer team for 2015–2016 was President: **Christina Smith**, Vice President: **Lauren Werner**, Secretary: **John Whitney**, Treasurer: **Elizabeth Amundson**, Outreach co-chairs: **Jacob Crosser** and **Abdias Rodriguez**, Ag Council Liaison: **Austin Dixon**. The 2016–2017 officers are: President: **Jacob Crosser**, Vice President: **Elizabeth Amundson**, Secretary: **Stephanie Price**, Treasurer: **John Whitney**, Outreach co-chairs: **Jackie Phipps** and **Abdias Rodriguez**, Ag Council Liaison: **Mary Witucki**

**Karyn Rodkey** (Manager of Research Services) received the 2015 Linda Siersema Staff Excellence Award; **Jo Cusumano** (Researcher and Lab Manager for the Chapple lab) was named the 2016 recipient. This award was established in 2013 and is given annually to a staff member who has demonstrated outstanding performance and service to the department.

**Kit Ma** (Tran lab) was the 2015 recipient of the A.K. Balls Award for outstanding graduate student; **Chen Shao** (Liu lab) received the award in 2016. This award is given annually to a graduate student who has demonstrated outstanding research potential, scholarship and intellectual curiosity.

**Chen Shao** (Liu lab) received the 2015 Henry A. Moses Award. **Laura Henry** (Dudareva lab) was the 2016 recipient. Established in 2008 by Biochemistry alumnus Dr. Bradley Sheares and his wife, Adrienne Simmons, to honor his mentor and fellow alumnus, Dr. Henry Moses, for his contributions to research, education and service, this award recognizes a graduate student for an early publication. It is given annually to a graduate student in Biochemistry approaching completion of their doctoral program who exhibits unusual potential for significant contributions to biochemical research.

Each year the department names an Outstanding Teaching Assistant (formerly the Hickory Stick Award). **Michael Melesse** (Hall lab) received the award in 2015 for his work in BCHM 100 for three consecutive semesters. **Nina Serratore** (Briggs lab) was named the 2016 award winner for her work in BCHM 465.

**Josh Widhalm** (then postdoc in the Dudareva lab) was the 2015 recipient of the Don Carlson Award. **Jeong Im Kim** (Chapple lab) received the award in 2016. This award is given annually to recognize a postdoctoral fellow, research associate or staff scientist for outstanding research accomplishments in the lab.

**Emily Erickson** (B.S. 2015) received the 2015 France A. Córdoba Award for Leadership in Action. This award honors a graduating student who has demonstrated exceptional leadership during his or her Purdue career. The student must have held successful leadership roles at Purdue, working in partnership with staff and faculty to move the university forward, while maintaining a minimum 3.0 grade point average. Erickson was also awarded the prestigious Churchill Fellowship. Only 14 students nationwide receive this competitive award, which funds a one-year graduate degree in science, engineering or mathematics at Churchill College at University of Cambridge in Great Britain.

**Courtney Orme** (B.S. 2015) was awarded the 2015 Woodrow Wilson Teaching Fellowship to pursue a Master's degree in Biology Education.



**Steve Broyles** was elected to the University Faculty Senate.

**Brian Dilkes** joined the department as an Associate Professor in August 2015.

**Natalia Dudareva** earned the 2016 Humboldt Research Award. This prestigious award is granted in recognition of researchers whose discoveries, theories or insights have had a significant impact on their discipline and who are expected to continue producing field-advancing achievements in the future.

**Jim Forney** was chosen as an education fellow for the American Society for Biochemistry and Molecular Biology.

**Jim Forney** was named a 2016 Trustees Teaching Award recipient for the Indiana University School of Medicine.

**Barbara Golden** was elected as a Dean's Fellow in the College of Agriculture.

**Humaira Gowher** and **Orla Hart** were part of a team that received a Diversity Transformation Award for their program, "Building Partnerships with Historically Black Colleges and Universities: Graduate Faculty Diversity Ambassador Program". The Diversity Transformation Award is the first initiative of its type at Purdue to tap the talents and creativity of faculty in addressing diversity issues.

**Dr. Wilhelm Gruissem**, Professor at the Institute of Plant Sciences, ETH Zurich, presented the Beach Lectures on Nov. 16-17, 2015.

**Orla Hart** was elevated to a Clinical Teaching Assistant Professor.

**Dr. Mark Hochstrasser** from the Yale School of Medicine, Molecular Biophysics and Biochemistry, presented the 2016 Bernard Axelrod Lectures on March 21-22, 2016.

**Xiaoqi Liu** was named the 2016 Outstanding Cancer Researcher by the Lafayette Lions Club for achievements in cancer research at Purdue.



**Xiaoqi Liu** and **John Morgan** were selected as 2016 University Faculty Scholars.

**Xiaoqi Liu** was promoted to Professor of Biochemistry on April 8, 2016.

**Aamir Mir** (Golden lab) and **Brendan Powers** (Hall lab) were awarded Bilsland Dissertation Fellowships. This competitive fellowship is awarded to Purdue Ph.D. candidates who have completed all degree requirements and are writing their dissertation.

Recent graduate **Quinton Nannet** (B.S. 2016) was the recipient of the 2016 G.A. Ross Award, given to Purdue's Outstanding Senior Male. This award is given to a graduating male student who has demonstrated high standards of academic achievement, evidence of outstanding leadership, strength of character and overall contributions to the university. Nannet also received the 2016 France A. Córdova Award for Leadership in Action and the 2016 John Wooden Leadership Award.

**Chris Petell** (Gowher lab), **Samantha Lee** (Golden lab), **Erin Sorlien** (Ogas lab), **Zachary Beck** (Tran lab) and **Elia Farah** (Liu lab) received Bird Stair Research Fellowships from the Department of Biochemistry. The purpose of the Bird Stair Fellowship is to promote the research success of students within the department and is to be used to support their graduate research.

**Sherry Pogranichniy** (Undergraduate Program Administrator) and **Bob Stephenson** (Research Assistant in the Weake lab) were promoted in Administrative Professional rank in 2016. Pogranichniy advanced to Level 6, and Stephenson advanced to Level 4.

**Anweshya Sanyal** (Mattoo lab) was awarded the Cancer Preventions Internship Program graduate fellowship for the 2015-16 academic year.

**Anweshya Sanyal** (Mattoo lab) received a PRF Research grant for her research titled "Fic-mediated adenylylation in regulating ER homeostasis in cancer". The funding for this grant is for the 2016-2017 academic year.

**Siwen Wang** (Tran lab) was named as the 2016 recipient of a one-year Purdue Research Foundation Research Grant. This grant is provided by the College of Agriculture in conjunction with the Office of the Vice President for Research. Siwen's research project is titled "Investigating the role of lncRNAs and RNA Helicase Dbp2 in transcriptional regulation of gene expression."

Professor **Lee Weith** retired and acquired Emeritus status on June 30, 2015, after 39 years at Purdue.

The following undergraduate students received the 2016 Department of Biochemistry Outstanding Student awards: **Stephanie Price** (freshman), **Abdias Rodriguez** (sophomore), **Kaelan Brennan** (junior) and **Quinton Nannet** (senior).

# And you? What's new?

*Hickory shafts and essays, startups and violins — and watching the river flow*

## 1950s

**Ken Kirby** (M.S. 1956 and Ph.D. 1958, Whistler) remains busy by playing in two bands, playing tennis and volunteering. He also finds time to write essays and stay up on the developments in Alzheimer's disease research.

**Donald Burns** (Ph.D. 1959, Parker) continues to enjoy retirement. He and his wife, Linda, continue to travel, visiting their children and grandchildren.

## 1960s

**Robert Saunders** (B.S. 1961) earned a Ph.D. in Pharmacology from Purdue in 1968. After 28 years in pharmaceutical research, he retired in 1996. He and his wife, Judy, reside in Florida and currently work part-time in local theme parks.

**R. Larry DeVault** (M.S. 1961, Jackson) has been busy for the last nine years doing research with his two autistic grandchildren. He studied their blood chemistry and determined they both needed L-Methionine added on a daily basis. He has also been reading research in the American Association for the Advancement of Science (AAAS) during the past nine years on biochemistry of the brain and located a method for getting Serine into the memory portion.

**Steve Robert Simmons** (B.S. 1968) completed his professorial career (Department of Agronomy and Plant Genetics, University of Minnesota) and is now undertaking personal essay writing in the spirit of his former Purdue Biochemistry mentor, Dr. Larry Butler. Steve's writings can be accessed at [steverobert.wordpress.com](http://steverobert.wordpress.com). He also is sprinkling in a healthy dose of golf using hickory-shaft golf clubs dating to the early 1900s. This has prompted him to seek out vintage (pre-1930) courses where his clubs feel right at home. Steve's most recent hickory exploits have taken him to the homeland of golf in Scotland.

**Ronald McCune** (M.S. 1964, Ph.D. 1966, Mertz) started his accomplished career with a postdoctoral assignment at the UCLA School of Medicine. He assumed a faculty position in biochemistry at Idaho State University, Pocatello, Idaho, in 1970, retiring (for the first time) in 2004 as Professor Emeritus of Biochemistry. During his time at Idaho State, his positions were located administratively, in succession, in Chemistry, Microbiology and Biochemistry (serving as chair of that department from 1972 to 1977), and in Biological Sciences. In addition to teaching and research in biochemistry, he helped establish an organized pre-health advising program (pre-med, pre-osteopathic med, pre-dental, pre-veterinary, pre-optometry, and pre-podiatry) for the campus. He chaired that program for 32 years until his retirement. After a year of retirement, he came back to Idaho State University in administration half-time for two years (2005-2006 and 2006-2007) as Vice President for Health Sciences and later Vice President for Medical Education. After retiring from his "second career" in 2007, he spent about two years as an informal consultant at Idaho State University in matters related to medical education. In retirement, he and his wife, Joan, (Ph.D. 1965 Biological Sciences, Microbiology) have remained quite active, including travel. They are involved with a Master Gardener summer travel program with the Department of Horticulture at Purdue, having traveled with that program to England (twice), France, and Italy to participate in studies of European gardens. In addition, they sing in a local choral group that has performed in Germany and Spain/Portugal. Most recently, they were a part of a choral group that performed the Verdi Requiem at Carnegie Hall in New York in June 2015. Dr. McCune has two daughters; one is an interior designer with an architectural firm in Seattle, and the other is director of a scientific writing team for a biotechnology support firm in San Francisco.

**Lyle Myers** (Ph.D. 1966, Jackson) had a very successful and rewarding research career at the Veterinary Research Laboratory (VRL), Montana State University, with his main research interest being calf and lamb scours. He retired from MSU as a full professor at the VRL after 26 years of full-time research. While at MSU, he developed (and patented — No. 4,338,298) an E. coli vaccine against calf scours which was produced and sold commercially for 10 years by Fort Dodge Laboratories, Fort Dodge, Iowa. Then, while studying lamb scours during the early 1980s, he discovered and named a previously unknown anaerobic bacterium (enterotoxigenic *Bacteroides fragilis*) (ETBF). He first showed this bacterium to be a cause of scours in calves, lambs, pigs and foals. Subsequent cooperative work with two researchers at Johns Hopkins showed that the bacterium also causes diarrhea in humans. At present, this bacterium has been studied worldwide and is now a presumptive cause of inflammatory bowel disease and colon cancer in humans. Myers retired from MSU in 1992 and now finds considerable enjoyment in following the ETBF story online. At the end of his career at MSU, he was named the outstanding researcher in the MSU Agricultural Experiment Station.

**Ted MacNintch** (Ph.D. 1965, Quackenbush) and his wife, Joan, have relocated to Fishkill, New York, about 65 miles up the Hudson River from Manhattan, to be closer to their eldest son. They still spend about five months of the year on Wellesley Island in the Thousand Islands in Upstate New York on the Seaway of the St. Lawrence River, where they relax by the water and enjoy their Sea Ray power boat and watch the river flow. They also participate in the Cape Vincent Poets and Writers Ink group on a weekly basis to polish their writing skills. In November 2016 he planned to travel to Dalhousie University in Truro, New Brunswick, Canada, for the 60-year reunion of the Class of 1956, of which he is Class President. This is the the junior college he attended before graduating from McGill University in Quebec.

## 1970s

**Mark Mamrack** (B.S. 1972) earned a doctorate degree from Baylor College of Medicine in Pharmacology. He is currently Associate Dean in the College of Science and Mathematics at Wright State University in Dayton, Ohio. He recently published “Exercise and Sport Pharmacology” with Holcomb and Hathaway, Publishers. The textbook deals with how exercise influences drug therapy for many common medical conditions.

**David Scheible** (B.S. 1978, MSIA 1979) recently retired from Graphic Packaging, where he had served as Chief Executive Officer and Chairman of Graphic Packaging Holding Company. He has now joined Clayton, Dubilier & Rice (CD&R) as an Operating Advisor.

**M. Kent Kemmerling** (B.S. 1971) earned M.S. degrees in Microbiology from Purdue in 1973 and Animal Sciences from Montana State University in 1982. He retired from Eli Lilly and Company in 2009 and currently provides technical consulting for the pharmaceutical industry.

**David Brink** (B.S. 1977) resides in Dothan, Alabama, and is retired from his radiology practice. He and his wife, Alison, (M.S. 1979, Foods and Nutrition) are the parents of two sons, Andrew and Matthew, and have two dogs.

## 1980s

**Michael Pape** (Ph.D. 1989, Kim) is Professor of Practice in the Department of Management within the College of Business Administration at the University of Central Florida, where he teaches and mentors students in entrepreneurship. Mike serves as director of the UpStarts Student Venture Accelerator within the Center for Entrepreneurial Leadership, which guides the most ambitious entrepreneurial students at UCF through the startup process.



**Jeffrey Dean** (Ph.D. 1986, Herrmann) moved from the University of Georgia in August 2014 to accept a position as head of the Mississippi State University Department of Biochemistry, Molecular Biology, Entomology and Plant Pathology. In the year immediately prior to his departure from UGA, he served as the Interim Director of the Institute of Bioinformatics at UGA and was named to chair the scientific advisory boards for two large forest genomics projects in Canada – the TAIGA Forest Health project at the University of British Columbia, funded by Genome Canada, and the NSERC-funded TRIA-Net project, at the University of Alberta, on the mountain pine beetle.

**Susan Smith** (B.S. 1982) has relocated from the University of Wisconsin-Madison to the University of North Carolina at Chapel Hill, where she is Professor of Nutrition at the Nutrition Research Institute in the School of Public Health. Her husband, **George Flentke**, (B.S. 1982) continues as senior scientist in their research partnership, which was recognized with a MERIT award from the National Institutes of Health. They are excited to continue their research into the molecular mechanisms of fetal alcohol exposure.

**Michael R. Pins** (B.S. 1985) graduated from Rush Medical College, Chicago, Illinois in 1989. His post-graduate training included a residency in Pathology and a fellowship in Surgical Pathology at Massachusetts General Hospital (MGH). Dr. Pins was on staff at MGH and had an appointment at Harvard Medical School before returning to his native Chicago in 1996, when he assumed a position at Northwestern Memorial Hospital and Northwestern University Medical School in the Department of Pathology. In 2007, Dr. Pins joined the staff at Advocate Lutheran General Hospital (ALGH) in Park Ridge, Illinois. He is currently Chair of Pathology at ALGH, Chair of Pathology at Chicago Medical School and Clinical Professor of Pathology at Chicago Medical School. He has authored or co-authored over 70 papers and book chapters. He is the proud parent of a Purdue graduate (Kathryn Pins, College of Liberal Arts, B.A., 2012) and a current student (Michael A. Pins, Mechanical Engineering Technology).

### 1990s

**Scott Renshaw** (B.S. 1995) and his wife, Becky Wooden-Renshaw, welcomed their first child, Oliver Jax Renshaw, in February 2014. Scott is currently an Assistant Professor in Clinical Family Medicine at the Indiana University School of Medicine, and in 2014 he was named the Director of Medical Student Education in the Department of Family Medicine.

**Hao Wu** (Ph.D. 1992, Rossmann) is currently the Asa and Patricia Springer Professor in the Department of Biological Chemistry and Molecular Pharmacology at Harvard Medical School, and Senior Investigator in the Program in Cellular and Molecular Medicine at Boston Children's Hospital. She was recently elected to the National Academy of Sciences.

**Kirsten Nielsen** (B.S. 1996), an Associate Professor at the University of Minnesota, was named a Fulbright Senior Scholar.

### 2000s

**Taichi (Endo) Takasuka** (M.S. 2005, Kirchmaier) finished his Ph.D. in 2009 with Professor Arnold Stein in Purdue's Department of Biological Sciences. Afterward, he completed postdoctoral work in the Department of Biochemistry at the University of Wisconsin-Madison. In fall 2014, he joined the Research Faculty of Agriculture at Hokkaido University in Sapporo, Japan, as a tenure-track assistant professor. In his laboratory, he is interested in searching for the enzymes that can improve biofuels technology as well as productions of biocommodities. For information, please visit his website at [http://www.agr.hokudai.ac.jp/takasuka/index\\_en.html](http://www.agr.hokudai.ac.jp/takasuka/index_en.html).



**Michael Thompson** (M.S. 2002, Chapple) is the founding director of Broader Impacts in Research (BIR) at the University of Oklahoma (<http://bir.ou.edu/>). BIR is one of the first offices of its kind in the nation that demonstrates how and why Broader Impacts (BI) should be conceptualized, operationalized, and institutionalized for and beyond the requirements of Agency and the BI National Science Foundation (NSF) Criterion. With supporting faculty, he is developing and implementing a Broader Impacts Conceptual Framework (BICF) for how BI can be applicable for all faculty, students, staff, and administrators in the university.

**Damon Jones III** (B.S. 2006) graduated from medical school at the University of Texas at Houston in 2012 and completed his pediatrics residency at Emory University in Atlanta, Georgia. He is now a pediatric hospitalist at Children's Healthcare of Atlanta at Scottish Rite.

**Nicole Mock** (B.S. 2009) earned a DVM degree from Purdue University in 2014 and began practicing at a small animal clinic (Lake Station Pet Clinic) in her hometown of Hobart, Indiana, shortly afterward. She recently signed on to stay another year with the intent of becoming a partner next year. She purchased a house last year and recently became engaged to her boyfriend.

**Adam Henry** (B.S. 2009) is in his final year of residency at Indiana University, specializing in internal medicine and pediatrics. In August 2017 he will begin working at an IU Health primary care office in Mooresville, Indiana. He and his wife, Becca, reside in Indianapolis with their two young daughters, Adelyn (September 2013) and Brielle (October 2015).

**Julie Chaney** (B.S. 2007) is now working in Research and Development at Siemens Healthcare Diagnostics in Elkhart, Indiana, following a postdoc at the University of Oklahoma in Norman, Oklahoma.

**Mark Fretz** (B.S. 2001) earned an MBA from Isenberg School of Management in 2013 and is currently working in business development for RSC Bio Solutions, a manufacturer of biodegradable lubricants in North Carolina. He and his wife, Deborah, had a son, Samuel James Fretz, who was born and also passed away on Oct. 1, 2015.



## 2010s

**Wanyu Huang** (B.S. 2015) returned to China after graduation and continued to pursue her passion with music. She was a violinist at Beijing International Chamber Orchestra in the 2014-2015 season. She also published a series of articles regarding “balancing successful violin learning and good academic grades” for Chinese high school students. In fall 2016 she began work on a master's degree at The Ohio State University through the Environmental Science Graduate Program.

**Mitch D'Aloia** (B.S. 2015) recently started his first year of medical school at Ohio University's Heritage College of Osteopathic Medicine.

**Nadia Atallah** (B.S. 2011) received her Ph.D. (2015) in Plant Biology, along with a certificate in Computational Life Sciences, from Purdue and accepted a position as a Bioinformatician for the Purdue University Center for Cancer Research in June 2015.

**Nickolas (Nick) Anderson** (Ph.D. 2014, Chapple) and **Yi Li** (Ph.D. 2015, Chapple) are both research scientists at Heartland Plant Innovations in Manhattan, Kansas. Nick works on wheat, and Yi focuses on sorghum. They welcomed a baby girl, Autumn Li Anderson, on June 4, 2016.

**Zach Anderson** (B.S. 2011) is currently an analytical chemist with SABIC Corporation.

# Prepared to move ahead

## 2014-2015 Ph.D. Graduates

### Nickolas Anderson (Ph.D.)

Next Stop: Postdoctoral Research, Heartland Plant Innovations

### Brett Bishop (Ph.D.)

Next Stop: Postdoctoral Research, Purdue University

### Kayla Harmeyer (Ph.D.)

Next Stop: Postdoctoral Research, University of Pennsylvania

### Keerthi Jayasundera (Ph.D.)

Next Stop: returning to his home country of Sri Lanka

### Amjad Nasir (Ph.D.)

Next Stop: Postdoctoral Research, Washington University School of Medicine

### Kelly Sullivan (Ph.D.)

Next Stop: Postdoctoral Research, University of Louisville

### Qianyi Yang (Ph.D.)

Next Stop: Postdoctoral Research, Washington University School of Medicine

## 2014-2015 M.S. Graduates

### Meng-Chieh (Claire) Chen (M.S.)

### Wenjie Zeng (M.S.)

## 2014-2015 B.S. Graduates

### Dane Anderson

Next Stop: Research Associate, AgReliant Genetics

### Iris Archer

Next Stop: Ph.D. in Immunology, Oregon Health and Science University

### Mitchell Ayers

Next Stop: Study Technician, Covance

### Puja Banerjee

Next Stop: Master's degree, University of Sydney

### Zachary Beck

Next Stop: Ph.D. in Biochemistry, Purdue University

### Mitchell D'Aloia

Next Stop: Ohio University College of Osteopathic Medicine

### Stephen Dilk

Next Stop: Marian University of Osteopathic Medicine

### Emily Erickson

Next Stop: Master's in Pathology, University of Cambridge

### Adam Fessenden

Next Stop: Doctor of Veterinary Medicine, Purdue University

### Jessica Gabbard

Next Stop: Associate Campus Minister, Purdue Christian Campus House

### Ryan Gandy

Next Stop: Master's of Science in Medical Physiology, Loyola University

### Nyema Harmon

Next Stop: Ph.D. in Chemistry, University of Iowa

### Nyemade Harmon

Next Stop: Master's in Biostatistics, University of Illinois, Chicago

### Wanyu Huang

Next Stop: Research Assistant, China Agricultural University

### Mercedes LaLand

Next Stop: Lab Technician, Bindley Biosciences Center

### Ryan Louer

Next Stop: Indiana University School of Medicine

### Peter Mercado-Reyes

Next Stop: Lab Technician, Columbia University

### Allison Norvil

Next Stop: Master's in Biochemistry, Purdue University

### Ashley Ochs

Next Stop: Doctor of Veterinary Medicine, Purdue University

### Courtney Orme

Next Stop: Master's in Biology Education, Purdue University

### Samuel Schaffter

Next Stop: Ph.D. in Chemical and Biological Engineering, Johns Hopkins University

### Cody Schnur

Next Stop: Doctor of Veterinary Medicine, Purdue University

### MacKenzie Schultz

Next Stop: Doctor of Veterinary Medicine, Purdue University

### Yu Xue

Next Stop: applying to graduate school

### Ziyan Yuan

Next Stop: Masters of Public Health, George Washington University

## 2015-2016 Ph.D. Graduates

### Ji Chen (Ph.D.)

Next Stop: Postdoctoral Research, National Center of Biomedical Analysis, Beijing, China

### Long Chen (Ph.D.)

Next Stop: Currently seeking employment

### Wai Kit Ma (Ph.D.)

Next Stop: Postdoctoral Research, Cold Spring Harbor Lab

**Michael Melesse (Ph.D.)**

Next Stop: Postdoctoral Research, University of Tennessee, Knoxville

**Jessie Murphy (Ph.D.)**

Next Stop: Principal Chemist, Ecolab

**Brett Bishop (Ph.D.)**

Next Stop: Postdoctoral Research, Purdue University

**2015-2016 M.S. Graduates****Aurelie Chuong (M.S.)**

Next Stop: Project Specialist, DrugDev TrialNetworks

**2015-2016 B.S. Graduates****Lucas Banter**

Next Stop: Medical Scribe, Ortho Indy; applying to medical school, Fall 2017

**Michael Berna**

Next Stop: Doctor of Pharmacy, Manchester University

**Michael Busche**

Next Stop: Ph.D. in Plant and Microbial Bioscience, University of California, Berkeley

**Duncan Eccles**

Next Stop: Lab Technician, Covance

**Mokunfope Fatukasi**

Next Stop: Professional Science Master's in Biotechnology, University of Delaware

**Arizona Fox**

Next Stop: Environmental Engineer, Arcadis

**Breanna Frailey**

Next Stop: Master's in Forensic Science, Indiana University-Purdue University, Indianapolis

**Scott Gentry**

Next Stop: Laboratory Technician, Purdue Animal Disease Diagnostic Laboratory

**Allyson Grasso**

Next Stop: Master's in Chemistry Education, University of Virginia

**Josef Herkert**

Next Stop: Veterinary Assistant, Southport Animal Hospital

**Jiahao Huang**

Next Stop: applying for Master's in Biomedical Engineering for Fall 2017

**Antonia Hur**

Next Stop: Lab Technician, Beckman Coulter

**Emma Lendy**

Next Stop: Ph.D. in Interdisciplinary Life Science (PULSe), Purdue University

**Irene Li**

Next Stop: Medical Assistant

**Ge Lin**

Next Stop: Master's in Public Health Nutrition, New York University

**Jordyn Lucas**

Next Stop: Ph.D. in Biochemistry, University of Missouri

**David Miller**

Next Stop: Lab Technician, Evonik

**Quinton Nannet**

Next Stop: Indiana University School of Medicine

**Marcos Navarrete**

Next Stop: seeking employment

**Robert Painter**

Next Stop: Indiana University School of Medicine

**Katelyn Parsons**

Next Stop: Clinical Research Assistant, Medpace

**Chintankumar Patel**

Next Stop: applying to medical school for Fall 2017

**Kayla Reinagle**

Next Stop: Accelerated Bachelor of Science in Nursing, Indiana Wesleyan University

**Kelsey Roe**

Next Stop: seeking employment

**Lindsey Saari**

Next Stop: Sample specialist, Eurofins Lancaster Laboratories

**Kyle Schulz**

Next Stop: Master's in Chemistry Education, Purdue University

**Madeline Sheeley**

Next Stop: Ph.D. in Nutrition Science, Purdue University

**Christina Smith**

Next Stop: Doctor of Veterinary Medicine, Purdue University

**Theresa Spall**

Next Stop: Biochemist, Eurofins Lancaster Laboratory

**Brooke Wamsley**

Next Stop: Study Technician, Covance

**Yi Wen**

Next Stop: Ph.D. in Biological Engineering, Purdue University

**Lauren Werner**

Next Stop: Master's of Public Health, Purdue University

**Colin White**

Next Stop: Quality Inspector, Stratosphere Quality

**Lanchen Wu**

Next Stop: Associate Engineer, Eli Lilly Suzhou Pharmaceutical Group

**Hannah Yen**

Next Stop: Study Technician, Covance

**Emory York**

Next Stop: applying to physician's assistant programs for Fall 2017

**Elizabeth Ziga**

Next Stop: Process Engineer, J.M. Smucker Co.

# Recognizing their potential

## 2015-2016

### Department Scholarships

#### Dr. Stephen P. and Charlotte A. Coburn Scholarship in Biochemistry

Matthew Nordland, Abdias Rodriguez

#### Ray Fuller Scholarship in Biochemistry

Kaelan Brennan

#### Patrick C. Matchette Scholarship

Emma Lendy

#### Edwin T. Mertz Memorial Scholarship

Lucas Banter, Michael Busche, Madeline Sheeley, Brooke Wamsley, Yi Wen, Emory York

#### David & Mary Scheible Scholarship

Peyton Spreacker

#### Kwok Yip Tso Scholarship

Lauren Werner

#### Donald and Rita Weeks Scholarship

Amy Cox

#### Zygmunt Family Scholarship in Biochemistry

Elizabeth Amundson, Logan Colwell, Breanna Frailey, Sarah Gutman, Kevin Lin, Jacqueline Phipps, Logan Richards, John Whitney, Mary Witucki

### College Scholarships

#### Agriculture Scholarship Award of Excellence

Thomas Ault, Sarah Innis, Paige Lippens, Madison Smith, Daniel Wesenberg, Ryan Wollensak

#### Agriculture Study Abroad Scholarship

Thomas Ault, Paige Lippens

#### Alva R. Bryant Ag Alumni Scholarship

David Miller, Matthew Nordland, Zachary Zelten

#### Keller E. Beeson Alumni Scholarship

Matthew Dawson

#### Leonard B. Clore Scholarship

Kaelan Brennan

#### Norm and Phyllis Coats Ag Scholarship

Evan Adams

#### Marion Lewis Cooper Scholarship

James Ford

#### Diverse Leaders in Agricultural Sciences Scholarship

Adetoro Koleosho

#### Gordon J. Graham and Wayne P. Rothgeb Scholarship

Madeline Sheeley

#### Gruel Memorial Scholarship

Michael Busche, Breanna Frailey, Quinton Nannet, Robert Painter, Brooke Wamsley

#### Rex Hall Memorial Scholarship

Elizabeth Amundson, Shelby Cummings, Rebecca Donnelly, Sarah Gutman, Jacqueline Phipps, Logan Richards, Abdias Rodriguez, Peyton Spreacker, Kirsten Westerhouse, Kyle Wettschurack, John Whitney, Emory York, Kylie Zehner

#### John and Emily Huie Scholarship

Lisa Miller

#### Hurst Perpetual Scholarship Fund

Paige Lippens

#### Samuel B. Lutz Scholarship

Madeline Sheeley

#### Marquardt Alumni Scholarship

Jacqueline Phipps, Madeline Sheeley

#### Milligan Agricultural Scholarship

Shelby Cummings

#### MSP Multicultural Education Scholarship

Adetoro Koleosho

#### Kelly and Margaret O'Neal Scholarship

Kristen Hendricks, Emma Lendy, Lisa Miller, Stephanie Price, Logan Richards

#### Herbert and Dortha Parker Scholarship

Sarah Gutman

#### Walter Pugsley Scholarship Fund

Luke Garner, Stephanie Price

#### Luther and Huldah J. Rice Scholarship

Austin Dixon, Lisa Miller, Chintankumar Patel, Christina Smith, Elizaveta Yurovich

#### O.B. Riggs Memorial Scholarship

Lanchen Wu

#### Runkle Scholarship

Sarah Gutman, Lisa Miller, Logan Richards, Kylie Zehner

#### Hafele-Stinson Purdue Agricultural Scholarship

Abigail Gress

#### Henry William and Matilda Marie Sailer Schroeder Memorial Scholarship

Austin Dixon

#### Lloyd and Gene Sellers Scholarship

Logan Colwell

#### Pearl W. Smith Scholarship

Stephanie Price

#### Van Scoy Scholarship in Agriculture

Kristen Hendricks, Emma Lendy

#### Henry Andrew and Ida Sophia Sailer Wedeking Memorial Scholarship

Elizabeth Ziga

#### Mauri Williamson Agricultural Scholarship

Quinton Nannet

#### Rich and Helen Willsey Scholarship in Agriculture

Kelsey Bullens, Abdias Rodriguez, Kylie Zehner

#### Robert J. Woods Scholarship

Robert Painter

#### Ralph and Winifred Woodward Scholarship

Matthew Dawson

#### Brenta H. Wykoff Memorial Scholarship

Paige Lippens

### University Scholarships

#### Steven C. Beering Scholarship

Mark Gee

#### Big Moves Study Abroad Scholarship

Benjamin Anderson, Thomas Ault, Michael Berna, Breanna Frailey, Charles Hawthorne, Josef Herkert, Paige Lippens, Stephanie Price, Blake Reid, Kayla Reinagle

#### Mitchell and Cheri Daniels Scholarship

Stephanie Price

#### Diversikey Global Scholarship

Adetoro Koleosho

#### Emerging Leaders Scholarship

Charles Hawthorne, Joseph Nigh

#### Marquis Scholarship

Evan Adams, Wyatt Baysinger, Kaelan Brennan, Matthew Dawson, Sarah Gutman, Hailey Lloyd, Madeline Sheeley, Collin Taylor, Brooke Wamsley, Zachary Zelten

#### Presidential Scholarship

Benjamin Anderson, Amy Bowman, Kelsey Bullens, Patrick Bustamante, William Collier, Breanna Frailey, Abigail Gress, Katelyn Huff, Emma Lendy, John Petroskey, Peyton Spreacker, Julia Weeder, Kirsten Westerhouse, Mary Witucki, Ryan Wollensak, Aaron Zych

#### Science Bound Scholarship

Charles Hawthorne, Guyia Muhammad

#### Trustees Scholarship

Adam Hoehn, Michael Busche

# In Memoriam

**Xiaochun Luo** of New City, New York, passed away Jan. 21, 2015. She earned a Ph.D. in Biochemistry from Purdue University in 1990. Dr. Luo worked at Procter & Gamble in various capacities in Cincinnati, Ohio, before joining Avon Products in Suffern, New York, rising to Group Vice President and Chief Scientific Officer for Avon's Global R&D. During her career, Xiaochun was a tireless advocate for increasing participation of women in STEM and a passionate community leader. She served as the founder president for the Chinese American Cosmetics Professional Association (CACPA) and president of the Westchester-Hudson Valley chapter of the Organization of Chinese Americans. She was honored as one of "100 Women Leaders in STEM" by STEM Connector, and served as a role model for all.

**Ronald Eugene Chance** of Westfield, Indiana, passed away on Saturday, April 11, 2015, at Magnolia Springs Senior Living at Bridgewater in Carmel, Indiana. Dr. Chance earned four degrees from Purdue University: master's in Animal Nutrition in 1959; Ph.D. in Biochemistry in 1962; and an honorary doctorate in 1999 from the Department of Biochemistry. He was a member of Kappa Delta Rho social fraternity. Dr. Chance was a Lilly Research Fellow with Eli Lilly and Co. in Indianapolis, the latest appointment in a 36-year tenure which began as a senior scientist in 1963. Dr. Chance made major contributions to the scientific understanding of insulin biochemistry and therapeutics, and revolutionized the treatment of diabetes. He published widely in scientific and medical journals, and held nine patents on insulin and insulin-related technology. Dr. Chance and his wife, Carolyn, established the Edwin T. Mertz Memorial Scholarship in 2001 in memory of Professor Emeritus of Biochemistry Edwin Mertz.

**Hussein Sadek Ragheb** passed away on Wednesday, Jan. 13, 2016, at The Springs of Lafayette, Indiana. Dr. Ragheb graduated with bachelor and master's degrees from Cairo University and a Ph.D. degree from Michigan State University. He was a Professor of Biochemistry at Purdue University for 54 years until his retirement in February 2015. He authored numerous publications, was awarded grants, received honors and was well respected for his professional work.

**David Krogmann** passed away on Friday, Jan. 22, 2016. After rising through the ranks in the Department of Chemistry at Wayne State University and two years (1966-1967) as a Program Director for Molecular Biology at the National Science Foundation, Dr. Krogmann joined Purdue's Department of Biochemistry faculty in 1967 as a full professor. His research program focused on the fundamentals of photosynthesis. In 1977-78, he served as the Program Manager for the Photosynthesis, Competitive Research Grants Office, at the USDA. He also served on policy committees for the NSF and was Head of the Competitive Research Grants Office at the USDA from 1979 to 1982. He served on the editorial boards for Plant Physiology, Bioenergetics and Archives of Biochemistry and Biophysics. He also served on a number of departmental and college committees and national grant review panels. Professor Krogmann retired from the Department of Biochemistry in 1997 after 30 years of service and continued as an Emeritus Professor.

**David Andrews** passed away at Athens Regional Medical Center on April 18, 2016. He earned bachelor (1984) and doctoral (1990) degrees from Purdue University and Texas A&M University, respectively. He continued work at Texas A&M before moving to the Department of Plant Pathology at the University of Georgia (UGA) in 1998. Dave worked for 18 years at UGA, first as a Research Coordinator (Fungal Genetics) and later as a Research Professional (Plant Virology). His vast knowledge and extensive experience in molecular biology and scientific instrumentation made him the 'go to' person for many students learning these skills.

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