

**School of Science Highlights Report**  
**July 1, 2014-June 30, 2015**  
<http://science.iupui.edu>

**Introduction:** The School of Science at IUPUI provides outstanding science education for all IUPUI students, education in depth for students in our School, and engages in fundamental and applied research in the physical, biological, mathematical, and psychological sciences to increase knowledge and advance the development of the life sciences at IUPUI and in the State of Indiana.

**I. The Success of our Students**

1. [New summer program encourages more women to pursue science](#) (7/14/14) Female faculty members are inspiring the next generation of female scientists by a new summer internship program between the IU School of Medicine Biomedical Gateway Program (IBMG) and the IUPUI Women in Science Program, supported by the National Science Foundation (NSF).
2. [Alumna Sandra Resnick Helps People with Psychiatric Disabilities Live Successful Lives](#) (7/14/14) As associate director of the Veterans Health Administration's VA Northeast Program Evaluation Center, Sandra is dedicated to helping people with psychiatric disabilities lead productive, healthy lives through vocational rehabilitation programs.
3. [A Focus on Research Offered Perfect Match for Doctoral Studies](#) (7/22/14) Alumnus Kyle Sloop now serves as Research Advisor in the Endocrine Discovery Division of Lilly Research Laboratories in Indianapolis, investigating molecular mechanisms that control glucose action.
4. [With a Heart for Service, Biology Student Volunteers in Community and on Campus](#) (8/29/14) Recent alumna Sarah Flores, currently at the IU School of Medicine, is a Sam H. Jones Community Service Scholar, and an active volunteer with the Latino Youth Collective.
5. [Geology Alumna Deb Peters Becomes a Trailblazer for Women in the Field](#) (9/30/14) In 1996 Peters founded the Indianapolis-based Quality Environmental Professionals Inc. QEPI provides environmental health, safety, and quality management services and has major contracts with the Department of Defense and the Environmental Protection Agency (EPA). Peters was honored with [the 2014 Outstanding Alumna Award from the School of Science Alumni Association](#).
6. [Goldwater Scholar Prepares for Career Bridging Research with Patient Care](#) (10/12/14) Devin Bready has earned recognition for his academic success and undergraduate research. Devin is currently an MD/PhD Student at the New York University School of Medicine.
7. [Math Assistance Center's Answers Adding Up](#) (10/15/14) Kevin Berkopes took over the MAC in February 2013, when the annual number of visits was approximately 18,000 per academic year. Less than two years later, the center is on pace to attract over 80,000 visits this year.
8. [Mentoring Helps Student Pursue Goals](#) (10/31/14) Tiffany McIntire has started her career at Eli Lilly and Company as a human factors engineer, where she examines scientific literature to best inform her research to ask the right questions and improve the group's research methods.

9. [Forensics Student Lands Summer Internship with DEA Forensics Lab](#) (11/20/14) Forensic and Investigative Sciences program undergraduate Jessica Bosse landed a prestigious internship at the Drug Enforcement Administration's (DEA) North Central Laboratory in Chicago.
10. [Experiential Learning Shifts Student's Perspective](#) (11/25/14) Marina Sharif, with dual citizenship in Canada and the US, and familial ties to Pakistan, is familiar with exploring ideas from the perspectives of different cultures. To expand her understanding of the world she recently studied abroad in Swaziland. This fall, Sharif will enter the IU School of Medicine.
11. [Neuroscience Student Inspires IUPUI with Research](#) (2/3/15) For Darryl Watkins, being a non-traditional student does not mean missing out on any part of the IUPUI experience. Watkins has excelled at IUPUI and was recently featured in the [#InspireIUPUI](#) campaign.
12. [Ivy League Alums Find Perfect Match as IUPUI Undergrads](#) (2/15/15) Bepko Scholars Igor Minevich and Natasha Arora experienced research opportunities and faculty mentorship at IUPUI, shaping both students' careers and passion in academia. The couple married in graduate school and now live in Boston, where Arora is a post-doctoral fellow at Massachusetts Institute of Technology (MIT) and Minevich is a visiting assistant professor at Boston College.
13. [Alumna Excites Jagiversity Through Multicultural Center](#) (2/27/15) As a School of Science alumna, Khalilah Shabazz is guiding students across campus as the director of the IUPUI Multicultural Center and as a School of Science Alumni Association Board member.
14. [Mentoring Peers Leads Student to Meaningful Experiences in Mathematics](#) (2/27/15) Competing in the High School Math Contest convinced Stacy Abshire to pursue a degree in applied mathematics. Since arriving at IUPUI, Abshire has found purpose in helping others to better understand mathematics while working at the Math Assistance Center (MAC).
15. [Science Alum Rocks for Riley](#) (4/2/15) The transition from undergrad to medical school can be a daunting prospect, but Ashley Riley (2014 B.S. Chemistry, FIS) is finding time in her first year of medical school to give back with Rock For Riley.
16. [School of Science Honors the Class of 2015](#) (5/10/15) The IUPUI School of Science awarded 664 degrees during its commencement ceremony on Sunday, May 10. The class of 2015 consists of 486 bachelor's degree recipients, 152 master's degree recipients and 26 doctoral degree recipients. [Senior biology student Corinne Blackburn was named IUPUI's 2015 most outstanding female student, with 41 science students named to Top 100; 9 Science students honored with the 2015 Plater Medallion, and 8 Science graduate students were named to IUPUI's inaugural Elite 50.](#)
17. [Pediatric Cardiac Surgeon Makes Connection Through Mathematics](#) (5/15/15) After earning his bachelor's degree in mathematics in 1978, John Kupferschmid attended the IU School of Medicine. Today he is a pediatric cardiac surgeon for Methodist Hospital in San Antonio TX.
18. [Computer Science Student Prepares for Job at Google](#) (5/21/15) After graduating this May with a B.S. degree in computer science and minor in mathematics, Samuel Beckman will join the new Engineering Residency Program at Google's second largest office in New York City.

19. [Psychology Undergraduate Uses Experiences to Serve Students](#) (6/10/15) Alicia Quash, the School of Science student commencement speaker, is an unstoppable force on campus, simultaneously working, going to school, being involved in numerous school organizations, raising a child, and creating a forum for diverse student perspectives in the School of Science.
20. [IU Commencement speaker Brandi Blakley Uses Experiences to Become an Effective Advocate](#) (6/22/15) Giving the 2015 commencement speech came naturally to Blakley; in fact, it was one of more than 125 speeches she's given over the last 4 years as a motivational speaker.

## **II. Advances in Health and Life Sciences**

1. [IUPUI School of Science, IU School of Medicine partner to offer graduate degree programs to Lilly employees](#) (7/15/14) The LGRAD (Lilly Graduate Research Advanced Degrees) program helps Lilly employees obtain advanced degrees in the existing graduate programs from the School of Medicine or School of Science with the goal of fostering collaborative relationships.
2. [IUPUI mathematician receives prestigious NSF early career development award](#) (7/24/14) Roland Roeder, Ph.D., will receive \$460,000 over the next five years from the National Science Foundation's Division of Mathematical Sciences to support his research in pure math and the training of students from the graduate to high school levels.
3. [IUPUI Awarded National Science Foundation Instrumentation Grant to Enhance Interdisciplinary Research Profile and Strengthen STEM Education](#) (8/19/14) The NSF has awarded IUPUI a \$374,989 grant to purchase an advanced X-Ray Diffraction (XRD) system, through the Major Research Instrumentation Program supporting interdisciplinary discovery.
4. [School of Science Researcher Receives \\$200,000 Grant to Research Fetal Alcohol Spectrum Disorder \(FASD\)](#) (9/9/14) Jim Marrs, Professor of Biology, has spent the last decade researching FASD, mentoring high school students, undergraduate researchers, graduate students and postdoctoral scientists to determine what stages of embryonic development are most sensitive to alcohol and which organs are most affected during developmental windows.
5. [Department of Earth Sciences Receives over \\$2.8 Million in Awards to Fund a Wide Range of Research Capability](#) (10/13/14) Faculty in the Department have been awarded more than ten grants this year, including seven from the NSF. These projects span global and local topics, ranging from glacial deposits in Antarctica, sediments in high altitude lakes, magmatism in the Pacific and Sierra mountains, and the Eagle Creek watershed in Indiana.
6. [Mimics do not substitute for the "real thing" for bomb-sniffing dogs](#) (11/25/14) In training dogs how to detect explosives, John Goodpaster and colleagues have determined that dogs trained with "pseudo-explosives" can not reliably sniff out real explosives in practice (and vice versa).
7. [IUPUI biophysicist is devising a way to count proteins as they group](#) (12/22/14) Steve Presse and colleagues report on an innovative theoretical methodology to solve "the counting problem," a key to understanding how proteins group and perform vital functions in cells, and [how proteins survive the extreme heat they create](#) when they rapidly catalyze reactions.

8. [Forensic geneticist awarded \\$1.1 million grant to develop tools to predict physical appearance from DNA](#) (1/15/15) Susan Walsh, assistant professor of Biology, has been awarded a National Institute of Justice grant to develop "DNA intelligence" tools to identify unknown persons. Her work was featured with a [front-page story in the New York Times](#) (2/23 15).
9. [\\$2.2M grant examines depression-cardiovascular disease link in HIV patients](#) (1/29/15) Jesse Stewart, associate professor of psychology, received an NIH grant to investigate links between depression, treatment and cardiovascular disease in adults with HIV.
10. [IUPUI biologist receives NIH grant to study how glaucoma develops in stem cells](#) (2/19/15) Jason Meyer, assistant professor of biology, has received a National Institutes of Health grant to study how glaucoma develops in stem cells created from skin cells genetically predisposed to the disease. The five-year, \$1.8 million grant is funded by the NIH's National Eye Institute.
11. [How alcohol hijacks brain's reward system: \\$545,000 award funds IUPUI investigation](#) (3/6/15) With the support of the three-year grant from the National Institute on Alcohol Abuse and Alcoholism, Alexey Kuznetsov, mathematical sciences, and neuroscientist Christopher Lapisch in Psychology are conducting research on how the brain's reward system is hijacked by alcohol.
12. [IUPUI Chemist Receives Early Career Development Award from NSF](#) (4/2/15) Haibo Ge, Ph.D., assistant professor in the Department of Chemistry and Chemical Biology, is the recipient of a 5-year, \$600,000 award to fund research that may contribute to drug discoveries.
13. [IUPUI Mathematician to collaborate on two newly funded interdisciplinary projects](#). Assistant Professor Yaroslav Molkov and colleagues received a [\\$1.4 NIH grant to study the neuroscience underlying obstructive sleep apnea](#), and a separate [\\$1.2 million collaborative award to model Huntington's Disease](#).
14. [IUPUI chemist earns grant to improve drug screening in forensics](#) (5/31/15) Nicholas E. Manicke received a \$273,826 award from the U.S. National Institute of Justice to improve the speed and accuracy of mass spectrometry for detecting drugs and poisons in blood samples.
15. [Earth Sciences researcher Bill Gilhooly invited to Indonesian-American Kavli Frontiers of Science Symposium](#) (6/2/15) The symposium gives distinguished young scientists an overview of cutting edge science in a wide-ranging set of disciplines. Attendees are nominated and selected by a committee of U.S. National Academy of Sciences NAS members.

### **III. Contributions to the Well-Being of the Citizens of Indianapolis, the State of Indiana, and Beyond.**

1. [Earth Sciences Professor is One of Just 13 Jefferson Science Fellows in the Country](#) (8/12/14) Gabriel Filippelli is one of just 13 scientists and engineers from across the U.S. to serve as a Jefferson Science Fellow, a program that connects American universities with the U.S. State Department on matters related to the climate and the environment.
2. [High School Physics Researcher Wins National Contest](#) (8/28/14) Carmel High School senior Rishabh Kumar, who spent his summer doing research with the physics department has won a

national award with the Biophysical Society's Biophysics: Changing Our World contest. Kumar worked in Horia Petrache's lab on statistical analysis of biological ion channel measurements.

3. [Through Project SEED Program, Bright Students Test The Field Of Scientific Research](#) (10/10/14) For more than 30 years, Project SEED has been providing rewarding summer research experiences to high school students, working with numerous IUPUI scientists.
4. [Physics Chair Receives Distinguished Service Citation from American Association of Physics Teachers \(AAPT\)](#) (11/10/14) The AAPT announced that Andrew Gavrin will receive the association's Homer L. Dodge Citation for Distinguished Service to AAPT in February 2015.
5. [School of Science Welcomes IU First Lady Laurie Burns McRobbie for Women in Science Forum](#) (11/25/14) Hosted by the School of Science, the Women in Science Forum sparked important conversations about the future of women in breaking barriers for STEM careers.
6. [Student ambassador program featured in university publication](#) (12/12/14) Nicole Amonette, Associate Director of Undergraduate Recruitment, coordinates the Science Ambassador Leadership Team (SALT) in efforts to bring new undergraduates to the School of Science.
7. [New York Times op-ed: Room for Debate: Keep the Drinking Age High](#) (2/10/15) Psychology faculty Tamika Zapolski advocates a higher legal drinking age along with programs to communicate the risks, harm and disapproval of alcohol use among young people.
8. [School of Science Dean Rhodes honored as a campus champion of diversity](#) (2/17/15) Chancellor Bantz conferred the Joseph T. Taylor award to Dean Simon J. Rhodes, who created the School of Science Diversity Council, influential in shaping the school's strategic plan.
9. [Neuroscience Faculty Help Local Student Thrive at National Brain Bee Competition](#) (4/8/15) After a victory at the 2014 Indianapolis Brain Bee, hosted by the School of Science, Michaela Breach, a Fishers High School senior, placed 2<sup>nd</sup> in the national competition.
10. [Abramovich family honored with prestigious award](#) (4/23/15) The IUPUI Spirit of Philanthropy Award was presented to generous benefactors on April 14 at the 2015 Spirit of Philanthropy luncheon and ceremony, honoring the Abramovich Family with this year's award.
11. [Math department hosts annual high school math contest](#) (5/8/15) Faculty volunteer more than 100 hours to judge entries based on the student's elegance of solution and correctness. Two winners earned a full four-year academic scholarship to the School of Science at IUPUI.
12. [Conference seeks to inspire high school girls' interest in STEM careers](#) (5/29/15) More than 100 high school girls from 10 Midwestern states attended an inaugural conference at IUPUI, co-sponsored by the School of Science, designed to inspire them to pursue a STEM career.
13. [Researchers examine how to minimize drought impact on global food crops](#) (6/10/15) Lixin Wang and Pierre-Andre Jacinthe in Earth Science, published research findings to help agricultural planning and management to minimize drought-induced yield losses worldwide.