Our Vision

- To be known in the state of Indiana and nationally as the destination of choice for students seeking the highest quality science education.
- To be recognized in the state of Indiana, nationally and internationally as a major contributor of the highest quality fundamental and applied scientific research.
- To excel at providing an environment that is supportive to a diverse population of students, faculty and staff.

Our Mission

The School of Science at IUPUI is dedicated to conducting fundamental and applied scientific research and providing the highest quality undergraduate education and graduate training. In both our research and teaching, we promote an understanding of basic science and interdisciplinary approaches for addressing scientific questions, an appreciation of academic values, and translation of scientific findings to our communities. We foster an environment where students can access faculty for personalized mentoring and instruction, and where they can be meaningfully engaged in research and scholarship. The School is committed to providing the state of Indiana and beyond with graduates who possess deep knowledge of modern science and who are fully equipped to be future leaders impacting science, industry, schools and communities.

Our Values

The School of Science at IUPUI will achieve its mission through outstanding teaching, innovative research, strong commitment to diversity among faculty and students, relentless pursuit of academic excellence and dedication to IUPUI’s vision as an urban research university with national and global impact.
We will strengthen our position as leaders in life and health sciences, in computational and mathematical approaches, and in STEM education and service. We will be internationally recognized leaders in generating new scientific and mathematical knowledge, including in basic research, applied research, teaching and service.
A cross-disciplinary collaboration of researchers in the School of Science at IUPUI explores the neural synchrony between circuits in the brain and their behavior under simulated drug addiction. The two-year study could have broad implications for treating addiction and understanding brain function in conditions such as Parkinson’s disease. (pictured below L to R: Christopher Lapish, Ph.D., assistant professor of psychology, Leonid Rubchinsky, Ph.D., associate professor of mathematical sciences, Sungwoo Ahn, Ph.D., post-doctoral fellow in mathematical sciences)  

science.iupui.edu/COLLABORATE
Foster Research Productivity and Collaboration

**ACTION**
» Better train and mentor new investigators.
» Build/acquire laboratory space.
» Increase faculty membership in academies.
» Develop interdisciplinary areas of strength.

**OUTCOME**
» Increase the average number of peer-reviewed research products per tenured/tenure-track faculty.
» Increase the percentage of tenured/tenure track faculty who annually produce peer-reviewed research products.
» Increase invitations to deliver external talks.
» Increase the number of externally-funded School-based research centers.
» Increase the number of School-based large grants.

Enhance Our Ability to Secure Research Funding

**ACTION**
» Make external funding a cultural expectation across the School.
» Improve support services for grant proposal development.
» Help faculty diversify their funding sources by seeking support from foundations, industrial partnerships and non-federal agencies.

**OUTCOME**
» Increase the percentage of tenured/tenure track faculty submitting external grant proposals.
» Increase the percentage of tenured/tenure track faculty who are externally funded.
» Increase annual funding expenditures.
» Increase research support from foundations and philanthropy.
The Institute of Mathematical Modeling & Computational Science (iM2CS), a cross-departmental School-level unit, promotes interdisciplinary research and educational activities, integrating mathematical and computational approaches to address problems arising in various areas of science, engineering and medicine. Giovanna Guidoboni (above, right), Ph.D., co-director iM2CS, is leading the Institute’s parallel mission to train a new generation to identify and solve the scientific issues with which they will be faced. Since its creation in 2012, iM2CS research has addressed diverse research such as blood flow in the eye and its relation to glaucoma, brain circuitry of Parkinson’s disease patients, fetal alcohol syndrome diagnosis and flooding in watersheds. science.iupui.edu/MODELS
Michelle Salyers (right), Ph.D., psychology professor, has dedicated her work as a clinical psychologist and researcher to the severely mentally ill. She is a national leader in evidence-based treatment services focused on recovery, and the overarching goal of her work is to help adults with severe mental illness live meaningful lives in the community. Salyers is leading the way as co-director of the ACT Center of Indiana—a collaboration of academic and community partners, including researchers, administrators, clinicians, consumers and family members who share an interest in recovery-oriented, evidence-based practices. The ACT Center has been working since 2001 to conduct research and provide training and consultation that supports recovery in adults with severe mental illnesses. Some of the models of care include Assertive Community Treatment (ACT) and Illness Management and Recovery (IMR) programs, which seek to enhance services that support people with mental illness to lead productive lives in their own communities rather than accessing jail, homeless shelters and more costly medical care.

science.iupui.edu/SalyersACT
Expand Our Contribution to Best Practices in STEM Education

**ACTION**

» Launch a science teaching forum.
» Improve support to faculty for developing and implementing best practices such as course-based undergraduate research experiences.
» Expand programmatic collaboration with centers such as the Center for Teaching and Learning (CTL), the Center for Research and Learning (CRL) and the STEM Education Research Institute (SERI).
» Expand awards for development and expansion of modern approaches for classroom/lecture periods, labs, recitations, online and hybrid courses.
» Enhance interaction between associate faculty and the School.
» Increase space for teaching.
» Improve mechanisms to reward and recognize teaching.

**OUTCOME**

» Increase the number of refereed publications related to STEM education.
» Increase the number of presentations at STEM-related conferences by 10%.
» Increase the level of internally and externally funded proposals in alignment with the overall goals of the School.
» Increase the number of partnerships between the CTL and individual School faculty.
» Increase education support from foundations and philanthropy.

**INNOVATION AND EXCELLENCE IN EDUCATION**

*Discovering While They Learn*

*Distributed Drug Discovery (D3)* is a pioneering education and research program that allows students in the classroom to make molecules that may lead to treatments for such devastating diseases as malaria and tuberculosis. *(Right: students in D3 Lab)*

[science.iupui.edu/D3](http://science.iupui.edu/D3)
EDUCATE

We will enhance our position as leaders in undergraduate STEM education where students gain real-world experience as scientists and leaders. Our undergraduate and graduate programs will be internationally recognized for students who have a deep appreciation of their areas of study, substantially expand the School’s research abilities, are optimally prepared to shape its future and have the needed expertise for our state and nation.

WE GRADUATE SUCCESS STORIES.
While working at Eli Lilly as an associate scientist, Kyle Sloop, 2001 Ph.D. in biology, started taking courses in the School of Science. That's when he discovered a program and faculty that fit what he wanted for his doctoral studies.

“The best thing about the School of Science experience for me was that the curriculum in the program was and is very focused on a research-oriented degree,” Sloop said. “This allows the student to be trained in the basic sciences and then to apply that learning to real hypothesis testing. That is sometimes not always found with other programs.”

Sloop now serves as Research Advisor in Endocrine Discovery for Lilly Research Laboratories.

cience.iupui.edu/Sloop
Position Graduate Programs to Attract Top Students

ACTION

» Establish Indiana Commission for Higher Education site-approved Ph.D. graduate programs in each of the School’s disciplines.
» Increase recruitment efforts.
» Evaluate, improve and, where appropriate, expand the size and number of doctoral programs.
» Develop innovative and novel graduate programs and interdisciplinary master’s programs.
» Increase graduate education support from foundations and philanthropy.

OUTCOME

» Increase the average number of Ph.D.s awarded annually by the School.
» Shorten the time to graduation while maintaining the quality of education.
» Increase the average annual number of publications with graduate students.
» Independent doctoral programs in each of the School’s disciplines.

Sandra Resnick (right), 2001 Ph.D. in clinical rehabilitation psychology, is dedicated to helping people with psychiatric disabilities live as people. She evaluates national vocational rehabilitation programs as associate director of the Veterans Health Administration’s VA Northeast Program Evaluation Center. The graduate psychology program at IUPUI was the perfect fit for Resnick because it allowed her to focus on her interest in psychological rehabilitation. “It was pretty clear that nobody else was doing this in psychology,” she said.

Her knowledge in supported employment and the tools she used to objectively measure programs during her research at IUPUI quickly made her an asset when implementing these practices for the Veterans Health Administration. science.iupui.edu/Resnick
Cultivate a Supportive and Collaborative Learning Environment

ACTION

» Build on the success of the Central Indiana – STEM Talent Expansion Program (CI-STEP).
» Expand and improve programs to increase the quality, quantity and diversity of our students.
» Optimize the science curriculum alignment to address the changing needs of students and the workforce and ensure there are no gaps that may impede academic progress.
» Evaluate and expand the use of best practices for all student services.
» Develop a School Honors Program to provide enhanced learning opportunities for Science majors who were not able to join the IUPUI Honors College.
» Maintain the quality and rigor of our courses and programs.

OUTCOME

» Increase retention and persistence of First Time–Full Time freshman.
» Increase four-year and six-year graduation rates.
» Increase of 10% in undergraduate graduates annually.

Each week, about 1,000 IUPUI students visit the Math Assistance Center (above), where student mentors are tasked with making math more accessible, enjoyable and achievable. These student mentors help their peers overcome fears and challenges in math while also learning how to best solve complex problems in a teaching environment. science.iupui.edu/MAC
Funded by a $2 million National Science Foundation grant, CI-STEP targets STEM student success at IUPUI through a coordinated effort involving 17 departments in the School of Science and the School of Engineering & Technology. The program expands on successful efforts for undergraduate student success at IUPUI such as the Freshman Work Program, the Life-Health Science Internship (LHSI), and the many CRL research opportunities for Science undergraduates. The program also includes improved coordination with Ivy Tech. (Pictured above in lab during LHSI program: Tomás Meijome, 2013 B.S. chemistry, currently an M.D./Ph.D. student at University of Pennsylvania Medical School and Kathryn DelaCruz, 2012 B.A. biology, currently a student at IU School of Dentistry)  science.iupui.edu/STEM

MEETING THE DEMAND FOR A STEM-EDUCATED WORKFORCE
IUPUI faculty are national leaders in developing new methods of teaching STEM subjects in ways that engage and excite students, while holding them to high standards and stressing critical and analytical thinking. Students become leaders by teaching others through programs such as Peer-led Team Learning, Structured Learning Assistance and Peer Advising.

science.iupui.edu/EDUCATE

School of Science alumni John and Jordan Skomp met as freshman chemistry majors in 2008 in the Windows on Science class. The pair married a few years later and embarked on similar career paths as each were selected as Woodrow Wilson Teaching Fellows, a national program geared to support future teachers of STEM disciplines. They both have completed their master’s degrees in secondary education and are now sharing their passion for science as they teach chemistry and physics in Central Indiana high schools.

“We are looking forward to long careers in high school education,” Jordan Skomp (pictured right) said. “It is a blessing to encourage students to be independent, life-long learners. I couldn’t ask for a more rewarding and special job.”

science.iupui.edu/TEACHERS
Extend Learning beyond the Classroom

ACTION
» Identify and promote short-term and summer study abroad programs.
» Expand School-associated study abroad opportunities.
» Continue our significant undergraduate research opportunities.
» Emphasize the central role of career services in the success of undergraduate students.
» Continue programs such as GK-12 that place the School’s graduate and undergraduate students in K-12 classrooms.

OUTCOME
» Increase the number of Science students participating and completing two or more Research, International, Service and Experiential (RISE) initiatives, especially international study abroad programs.
» Increase the number of students obtaining direct placement into the professional program or career of choice.
» Increase the number of students using the services of the Science PREPs Office (Pre-Professional and Career Preparation).
» Increase the number of Science undergraduate internships.

OUR STUDENTS GRADUATE WITH THE SKILLS, EXPERIENCE AND KNOWLEDGE TO SUCCEED IN GRADUATE SCHOOL, PROFESSIONAL SCHOOL AND THE WORKFORCE.
ENGAGE

We will provide educational and research programs that best serve our community. We will facilitate relationships and beneficial partnerships with members of the community.
Since fall 2013, the Center for Earth and Environmental Science (CEES), established in 1997, has helped students in third through sixth grade at Indianapolis Public Schools’ Joyce Kilmer Academy School 69 (below) and James Russell Lowell School 51 explore the science of the environment. The students’ excitement for science has been encouraged by the joint efforts of CEES’ Discovering the Science of the Environment (DSE) program and the Felege Hiywot Center, which serves Indianapolis children by teaching gardening, science, engineering and environmental stewardship. The teams have partnered with the principals, teachers and students at the schools to deliver hands-on inquiry-based science. The IUPUI team includes environmental science experts who are recent alumni and current undergraduates. DSE’s work with IPS schools has been developed with generous programmatic investment in STEM from Dow AgroSciences.

science.iupui.edu/ENGAGE
Encourage and Support a Deep Interest in Science among the Indianapolis Community

**ACTION**
- Continue and seek ways to expand initiatives that support K-12 teachers in the classrooms such as the IUPUI Urban Educator/GK-12 partnerships.
- Collaborate with local museums.
- Develop interactive science educational displays in public places.
- Host annual science speakers who are publicly popular and nationally recognized.
- Explore ways to facilitate re-entry of veterans and current workers from local industry into our undergraduate and graduate programs.

**OUTCOME**
- Increase the number of educational collaborations in the community.

Facilitate Teaching and Research Collaborations with Community Partners, Employers and Industry

**ACTION**
- Expand internship and co-op arrangements with local industry and organizations.
- Develop interdisciplinary graduate programs that align with industry needs.

**OUTCOME**
- Increase funding opportunities for graduate programs.
- Increase the number of internships/co-ops, with opportunities in each department.
- Increase research support from industry.

Engage Our Alumni to Support Their Continued Success and Expand Their Impact on the School

**ACTION**
- Establish processes and tools to continue to gather and maintain alumni contact data.
- Explore and implement improved communications and engagement activities.
- Provide clear avenues for alumni to give back to the School through recruitment, career services, development and outreach.

**OUTCOME**
- Improve the quality and quantity of alumni contact data.
- Increase the number of alumni donors and alumni involved in School programming.
DEVELOP

We will nurture the development of faculty and staff to ensure the highest quality education experience for our students and to generate meaningful and impactful research. We will employ the highest quality staff and faculty to ensure that we improve our ability to recruit, educate and retain students, perform the best research, secure funding and operate efficiently.
Ensure the Development, Promotion and Retention of Exceptional Faculty and Staff

**ACTION**
- Identify training opportunities for new investigators.
- Establish career development programs for mid-career and senior level faculty.
- Develop mentoring programs, including a mentoring plan for each new faculty member.
- Hold chairs accountable for making mentoring available to all faculty.
- Clarify promotion standards for faculty.
- Ensure consistent processes for annual faculty reviews.

**OUTCOME**
- Increase the number of full professors.
- Increase the number of mentoring relationships.

Enhance Staff Development and Professionalism to Attract and Retain the Highest Quality Workforce

**ACTION**
- Develop mentoring programs, including a mentoring plan for each new staff member.
- Ensure consistent HR practices.
- Connect staff to career development opportunities.
- Develop a training policy for School staff.
- Evaluate staff and resource allocation to ensure appropriate support and effectiveness.
- Ensure consistent processes for annual staff reviews.

**OUTCOME**
- Increase the number of mentoring relationships.
- Increase staff satisfaction survey scores.

Michael Yard (above), biology senior lecturer, is known for his ability to inspire students as he opens their eyes to career opportunities in science. He does this through his involvement in the Health Professions Themed Learning Communities, where he helps freshman navigate the college experience. Yard has been recognized with several honors including the Indiana University Trustees Teaching Award and the IUPUI Chancellor’s Award for Excellence in Teaching.
The School’s newly established Office of Pre-Professional and Career Preparation (PREPs) has five staff members who engage students in intentional academic and career planning to make professional goals a reality. Director Willow King-Locke (left) leads the PREPs team.  

As executive director of research and graduate education, Mary Harden (above with professor and associate dean David Skalnik) helps researchers identify and secure grants. School of Science researchers are currently funded by external grants from the National Institutes of Health, National Science Foundation, NASA, U.S. Department of Education, the American Cancer Society, as well as other research agencies, foundations and commercial organizations.
Cultivate an Environment in which a Diverse Population of Students, Staff and Faculty Can Succeed

**ACTION**

» Continue to support the School of Science Diversity Council and its activities.
» Assess climate and culture.
» Ensure student and faculty recruitment initiatives are designed to increase representation of Underrepresented Minorities (URMs) and women in specific departments/areas and ranks.

**OUTCOME**

» Increase the percentage of URM students attending and graduating from the School.
» Increase the number of tenure-track female faculty.
» Increase the number of female full professors.
» Increase the number of URM faculty.
» Improve student, staff and faculty climate perceptions.
We seek to accurately communicate who we are to the local and broader communities, to increase discourse among ourselves, and to disseminate our research and teaching advances. Enhanced communication will support all aspects of the plan objectives by improving understanding and awareness about our research and educational programs; strengthening our ability to recruit the best students, staff and faculty; bolstering our ability to garner collaborators and grant support for our research; and facilitating partnerships in all aspects of our mission.
IUPUI Strategic Plan

Although developed independently of the IUPUI strategic plan, the goals and plans of the School of Science are strongly in accord with all aspects of IUPUI’s strategic plan, especially in the goals to promote undergraduate student learning and success; optimize enrollment management; increase capacity for graduate education; leverage strengths in health and life sciences; enhance the well-being of the citizens of Indianapolis, the state of Indiana and beyond; accelerate innovation and discovery through research; deepen the commitment to community engagement; strengthen internationalization efforts; promote an inclusive campus climate; and to develop our faculty and staff.  strategicplan.iupui.edu

IU Principles of Excellence

The School of Science strategic plan also reflects and acts upon the Indiana University President’s Principles of Excellence. The School of Science plan strives for An Excellent Education with the best academic programs, academic success and completion, access and affordability for Hoosiers, high quality student life, and innovative teaching; An Excellent Faculty with an outstanding, diverse, and inclusive faculty; Excellence in Research with increased and collaborative research that is recognized as excellent through national and international peer comparisons; an increased level of international engagement (The International Dimension of Excellence); Excellence in the Health Sciences and Health Care in our research, teaching, clinical, and collaborative activities; Excellence in Engagement and Economic Development by supporting the health, economic, and social development of Indiana, the nation, and the world, by translating innovation into practice, and by partnering with our communities.  science.iupui.edu/POE
This strategic plan for the IUPUI School of Science was developed by faculty, staff, students, alumni and advisors in collaboration with our community partners. We are grateful for the unique learning and innovation environment in the School and at IUPUI. We are proud of the remarkable impact of our graduates and our research in Indiana and globally. Together we will build on this success to achieve the goals described in this plan.

Thank you for your support,
Dean Simon Rhodes

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