

**COLLEGE
OF PHARMACY
CHICAGO
ROCKFORD**



Research Strategic Plan 2016 – 2021

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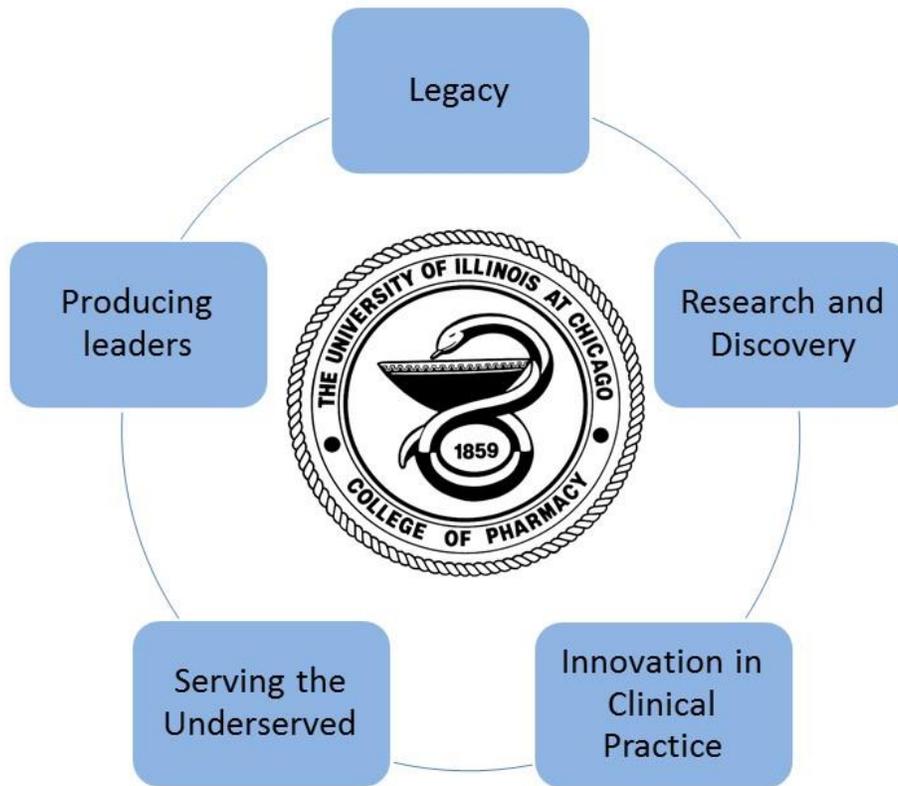
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University of Illinois College of Pharmacy Research Strategic Plan

College Mission:

The College of Pharmacy produces global pharmacy leaders through its unique contributions and excellence in professional, residency, fellowship and graduate educational programs, research programs, clinical pharmacy practice programs in multiple practice settings, and community engagement in urban and rural environments.



College Vision:

The University of Illinois College of Pharmacy will be a global leader in improving human health and benefiting society through pharmaceutical education, research, service and entrepreneurial activity. We aim to be recognized as the best college of pharmacy in the world.

Research Preamble, 2015:

Abraham Lincoln said, “The best way to predict the future is to create it.” The UIC College of Pharmacy’s (CoP) scientists create the future every day through an interdisciplinary approach to research. Whether it’s cancer, Alzheimer’s or public policy, research at the College of Pharmacy has touched every corner of the health care field, as well as every corner of the world. Here is a short list of some of our laudable achievements.

- In 1950, Dr. Sol Roy Rosenthal developed the Bacillus Calmette-Guerin (BCG) Tice strain. In 1998, the FDA approved the BCG vaccine for the treatment of bladder cancer and UIC partnered with Organon (now Merck) to produce the strain. The BCG Tice strain is one of the most widely used strains for bladder cancer immunotherapy.
- In 1975 Professor Norman Farnsworth, a founding member of the American Society of Pharmacognosy, developed the world’s first computerized database of medicinal natural product information featuring more than 20,000 species of plants and related ethnobotanical information.
- As part of a large collaborative effort to test natural products, CoP researchers identified the potent anti-cancer compound known as Silvestrol and took steps to develop it into a lead compound for further testing with the NCI Next Program.
- CoP researchers developed a new medical device that can detect circulating tumor cells, a device that can detect spreading tumor cells and provide information on recurrence.
- Scientists in the College of Pharmacy synthesized a new drug that shows signs of reversing memory impairment, a promising discovery for treatment of Alzheimer’s disease and dementia.
- UIC researcher Dr. Donald Waller and a team of investigators from Rush University Medical Center developed a topical contraceptive lubricant called Amphora, a FDA approved compound that uses lactic acid to create an environment that is inhospitable to reproduction.
- CoP researchers have been at the forefront of women’s health with a focus on the safety and mechanisms of natural products used by menopausal women, including botanicals like black cohosh, red clover, and hops.
- College of Pharmacy researchers, in collaboration with Northwestern University, engineered the first artificial ribosome which has the potential to create new drugs and next-generation biomaterials.
- COP researchers are world leaders in developing novel nanomedicines that can be targeted to solid tumors and inflamed tissues, resulting in high drug activity with significantly decreased side effects
- Faculty at the College of Pharmacy were among the trailblazers in the emerging field of comparative effectiveness research (CER), and the College remains top among pharmacy schools in CER and pharmaceutical outcomes research.

The College continues to be committed in maintaining the strength of its research mission. The purpose of this document is to outline the research strategic plan for the next 5 years.

Strategic Research Plan Objectives

The UIC College of Pharmacy is dedicated to training researchers who will contribute to the understanding of disease states and develop new therapies through multidisciplinary and translational methods. More than 50 tenure track faculty and over 100 research and clinical faculty conduct research and provide training to nearly 150 graduate students and postdoctoral trainees, as well as over 700 professional students.

The College continues to excel in areas of drug & target discovery through synthetic chemistry and natural sources and therapeutic outcomes in oncology, infectious diseases, women's health and CNS disorders.



In order to build on the current successes, the college must advance the level of basic and applied scientific research in emerging areas of pharmaceutical sciences in order to become one of the world leaders in scientific innovation. The additional evolving areas of research the college intends to build upon include drug delivery, human translational research, clinical pharmacy implementation science, and health disparities.

The college's research strengths are built on the core belief that collaboration is key to research success. Within the college, this collaboration is evident based on the number of co-investigator grants as well as the multi-disciplinary research centers housed within the college; the college centers and institutes are the nucleus for developing and sustaining collaborative opportunities. The college values collaboration with colleagues in other on-campus departments, colleges/schools, campuses, university and other organizations, and private sector partners.

To achieve continued success in these research areas indicated above, the college will continue to focus on educating and training pharmacists and researchers in the fields of pharmacy practice; pharmacy systems, outcomes & policy; medicinal chemistry; pharmacognosy; and biopharmaceutical sciences. Not only is this a critical element to the College of Pharmacy's research endeavor, but this impacts the student's educational experience and expands traditional training for undergraduate, graduate, and professional pharmacy students. This will allow the college to maintain its strong reputation and achieve its dominance in pharmaceutical research.

The College's Primary Strategic Goals for the next five years include:

Research Excellence

1. Pursue the approval and funding of a new College of Pharmacy facility that will be used to further develop public-private partnerships and promote entrepreneurial activities (e.g. further develop translational and basic discoveries).
2. Define the focus and size of the research program and graduate student programs in Rockford such that it is sustainable in terms of research dollars and opportunities for training and education.
3. Evaluate current research themes and strategically assess areas of opportunistic expansion. Areas of expansion will include drug delivery, human translational research, clinical pharmacy implementation science, and health disparities.
4. Support the specific aims grant proposal review service program to provide prospective feedback on extramural grant proposals, access to professional scientific editors, and improve funding success. The goal is to increase research funding by 10% in each of the next 5 years.
5. Evaluate and propose the development of joint PharmD/MS degrees for Rockford students. These new programs will enable Rockford professional students to follow careers in academia and industry that require research experience and expertise.

Collaboration

6. Explore a research shared services group to provide efficiencies in research administrative support and improve support for grants management. Shared services should act as a support mechanism for departments and research centers. Models will be evaluated to identify college-wide collaborative opportunities (i.e. development and management of training grants). The goal is to identify and implement models that realize financial savings by at least 20%.
7. Enhance support and evaluate the faculty mentor program to assist junior faculty in achieving research, teaching success, and tenure by establishing multiple and collaborative mentors to ensure 100% success rate for promotion and tenure at the 3rd year review and with the goal of 90% success at the final tenure review within the college. New faculty candidates will be interviewed by members of multiple departments to ensure adequate mentors, collaborators, and equipment are available for long-term success.
8. Encourage academic synergies and evaluate the opportunity to merge certain basic science graduate programs with the goal of strengthening all the disciplinary graduate efforts. The focus would be to build on the prominence of the current basic science researchers and provide a focused academic program that all Ph.D. candidates will benefit from.

Financial and other resources

9. Identify new funding sources to provide strategic bridge funding. A more vigorous effort to identify supplementary resources is needed to ensure faculty salary and programmatic support is available for all researchers. These new funding sources, coupled with the use of current programs such as the Vahlteich Award, will be used to provide a call for proposals for bridge funding and the college will track the productivity of researchers to determine the success of bridge funding.
10. Pursue additional financial support for research, including additional endowments for professors and chairs to increase the funds by 5% annually. Specifically, marketing materials and the CoP website, which highlight the research strengths of the faculty, will be developed to facilitate communication and partnership opportunities with private donors and pharmaceutical companies. The goal will be to maintain a website that highlights the college as a first class research institution that will attract potential collaborators.
11. Evaluate space resources to determine if they are adequate and identify working environments that need to be modernized or renovated to ensure all laboratories continue to be safe and efficient.
12. Create an inventory of research resources (equipment, support services, etc.) in the college and develop college plans for shared equipment maintenance and service contracts.
13. Explore strategic information technology infrastructure, services, and partnerships to benefit the CoP research portfolio. Strategies will focus on areas where technology can aide in conducting research more effectively or efficiently. Examples of such technologies include high performance computing, statistical analysis tools, visualization, modeling, data repositories and research collaboration services. These technologies and services will create advantages, by developing areas of research such as drug repurposing and bioinformatics, to support the college's strengths and further advance the aspirational areas of research.

Student Experiences

14. Support programs that provide research opportunities for students, including programs such as the Pre-Doctoral Education for Clinical & Translational Scientists (PECTS), the Summer Undergraduate Research Fellowship program (SURF), and the David J. Riback Research Pre-doctoral fellowships. These programs should enhance the number and quality of students entering Ph.D. and PharmD/Ph.D. programs in the college and increase the number of students seeking GPPA, fellowships, and joint pharmacy degrees.
15. Increase connections between alumni/industry and students to provide additional research opportunities and career development opportunities that will ultimately increase the number of Ph.D. students completing a summer internship to 15% and increase the number of research fellowships in the college by 5% over the next 5 years.