#7
PHARMACY PROGRAM
U.S. News & WORLD REPORT

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PHARMACY PROGRAM
Pharmacy Technician Review

#3
GRADUATE PROGRAM
Academic Analytics
FACULTY EXCELLENCE HIGHLIGHTS

FACULTY PERFORMANCE COMPARED TO PEERS

- 4th Total Sponsored programs funds
- 3rd US Patents filed
- 3rd Faculty elected fellows
- 4th Board certified faculty

College SPS Awards

FY11 FY12 FY13 FY14 FY15
STUDENT SUCCESS HIGHLIGHTS

PharmD Program

- 96% employed at graduation
- Average salary $113,911
- 42% of PharmD graduates are pursuing postgraduate training
- 22% debt free
  - Lowest debt in Big Ten

Implemented an E-text initiative that saves students $1,800

Employment

- Residency: 36%
- Fellowship: 5%
- Continuing Education: 1%
- Community - Chain: 42%
- Hospital: 5%
- Industry: <1%
- Long Term Care: <1%
- Nuclear Pharmacy: <1%
- Military: <1%
- Consulting: <1%
- Other Area: <1%
- Not Specified: 3%
- Seeking/Undecided: 4%

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Average salary $113,911

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Purdue College of Pharmacy
**ORGANIZATIONAL EFFICIENCY**

- Asst to Dean
- Dir. Financial Affairs
- Dir. Alumni Rel & Special Events
- Director of Communications
- Dir. Purdue Pharmacy
- Dir. CMSA
- Dir. Cont Ed
- Head, Industrial & Physical Pharm
- Head, Med Chem & Mol Pharmacol
- Head, Pharmacy Practice
- Director of Advancement
- Sr Assoc Dean
- Assoc Dean for Research
- Assoc Dean for Grad Programs
- Assist Dean for Experiential Programs

**FTEs Devoted to Associate/Assistant Deans**

- **Purdue**: 1 FTE
- **Iowa**: 2 FTEs
- **Ohio State**: 3 FTEs
- **Michigan**: 4 FTEs
- **Minnesota**: 5 FTEs
- **UIC**: 6 FTEs
- **Wisconsin**: 7 FTEs

*Lowest FTEs devoted to administration in Big Ten despite highest student enrollment*
KEY OPPORTUNITIES

NATIONAL PROBLEMS WE ARE POSITIONED TO ADDRESS

Medical Errors

~100,000 patients die annually from medical errors
Our Center for Medication Safety Advancement has become a national leader and is strongly positioned for further growth

Medication Adherence

~50% patients do not take medication as prescribed
We are currently developing comprehensive research and educational strategy
Access to Care - Need for Team-based Solutions

67 million people lack access to primary care

Pharmacists are the most accessible of all healthcare providers. Our priority is to prepare graduates for expanded roles for pharmacists.

Cost/Time in Pharmaceutical Development

$1-4 B cost and up to 14 years to bring a drug to market

Faculty hires in Drug Discovery:

• 2 faculty for Board approval today
• 2 faculty in each of next 4 years
KEY CHALLENGES

BARRIERS TO INTEGRATING INTERPROFESSIONAL EDUCATION WITHIN THE DIDACTIC CURRICULUM

- **GEOGRAPHIC**
  - Distance from academic health center

- **DEMOGRAPHIC**
  - Student enrollment differences

- **STRUCTURAL**
  - Space limitations

- **CURRICULAR**
  - Highly specific content
KEY CHALLENGES

UNFUNDED STRATEGIC PRIORITY – NEW FACILITY

• Faculty and staff currently distributed across 7 buildings on campus and rental space in Research Park.
• Pedagogical constraints due to lack of flexible teaching space.
• Lack of living space for students.
• Insufficient laboratory space.
EDUCATIONAL PROGRAMS

- BS in Pharmaceutical Sciences
- Doctor of Pharmacy
- MS/PhD
- Fellows
- Residents
- Continuing Education
  RPh, MD, RN, RT

College of Pharmacy

Purdue College of Pharmacy
STUDENT SUCCESS

UNDERGRADUATE STUDENTS

Retention rate

94%

Majority of students enrolled in pre-pharmacy

1-Year Retention

2010 2011 2012 2013 2014
STUDENT SUCCESS

PROFESSIONAL STUDENTS (PharmD)

Retention rate

99%  

4-Year graduation rate

96%  
(2011 cohort)

Retention & Graduation Rates

1-Yr Retention  
4-Yr Graduation

2010 2011 2012 2013 2014

96% (2011 cohort)
STUDENT SUCCESS

GRADUATE STUDENTS

52%

Increase in extramural awards to graduate students since 2009

Most MS students have been enrolled part time in a professional MS program in regulatory sciences
Experiential and international experience

**Experiential hours**

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours</th>
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<tbody>
<tr>
<td>P1*</td>
<td>30</td>
</tr>
<tr>
<td>P2</td>
<td>160</td>
</tr>
<tr>
<td>P3</td>
<td>160</td>
</tr>
<tr>
<td>P4</td>
<td>1600</td>
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**Current Locations:**

- Kenya
- England
- Tanzania

Experiential education represents about one-third of our professional curriculum. Each of our PharmD students rotates through our on-campus retail pharmacy during their first professional year.

Accreditation requirements preclude our students from taking required coursework overseas.

Note: In 2012-13 we intentionally reduced the portion of the year students were sent to Kenya due to their national elections, which can be a volatile period in the country.

*P1 designates first professional year, P2 second, etc
**STUDENT SUCCESS**

**EMPLOYMENT:**

**PharmD May 2015 (Data August 2015)**

<table>
<thead>
<tr>
<th>Employment Type</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Residency</td>
<td>36%</td>
</tr>
<tr>
<td>Fellowship</td>
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<td>Continuing Education</td>
<td>1%</td>
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<td>4%</td>
</tr>
</tbody>
</table>

- 50% remained in Indiana
- Average salary $113,911
- 42% of PharmD graduates are pursuing postgraduate training

**BSPS May 2015 (Data May 2015)**

- 63% Employed/continuing education at graduation
- $44,000 Average salary

Licensing Board pass rates for our graduates consistently exceed national average.
STUDENT SUCCESS

STUDENT DEBT:

UNDERGRADUATE (BSPS)

45% debt free

$24,908 3rd lowest of all Purdue colleges

GRADUATE

79% debt free

$26,114 lowest of all Purdue colleges

PROFESSIONAL (PharmD)

22% debt free
Lowest debt in Big Ten

Self reported debt on receiving PharmD degree (Class of 2015)
INSTITUTIONAL EXCELLENCE

FACULTY RESEARCH

Sponsored Programs Expenditures FY14 (in millions)

- Total Sponsored programs: 4th

SPS Awards

FY11 FY12 FY13 FY14 FY15
INSTITUTIONAL EXCELLENCE

FACULTY RECOGNITION

# of Professional Fellows

Purdue  | Arizona  | Iowa   | Michigan | Ohio State | UCSF  | UNC  | Washington | Wisconsin

# Board Certified

Purdue  | Arizona  | Iowa   | Michigan | Ohio State | UCSF  | UNC  | Washington | Wisconsin

3rd Faculty elected fellows

4th Board certified faculty
INSTITUTIONAL EXCELLENCE

FACULTY EXCELLENCE: ENTREPRENEURIAL ACTIVITY

Recently formed companies

US Patents filed (FY14)

Purdue  Arizona  Iowa  Michigan  Ohio State  UCSF  UNC  Washington  Wisconsin

3rd US Patents filed
INSTITUTIONAL EXCELLENCE

FACULTY HIRES IN DRUG DISCOVERY

Dr. Danzhou Yang
Martha and Fred Borch
Chair of Cancer Therapeutics

Dr. Zhong-Yin Zhang
Head, MCMP
Director, Chemical Genomics Core, Drug Discovery
Distinguished Professor
Anderson Chair of Pharmacology

Expected Drug Discovery Hires

<table>
<thead>
<tr>
<th>Years</th>
<th>Hires</th>
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<tbody>
<tr>
<td>2016-17</td>
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<tr>
<td>2017-18</td>
<td>2</td>
</tr>
<tr>
<td>2018-19</td>
<td>2</td>
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<tr>
<td>2019-20</td>
<td>2</td>
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INSTITUTIONAL EXCELLENCE

FACULTY EXCELLENCE: NATIONAL LEADERSHIP

Dr. Steve Scott
President-Elect
American Association of Colleges of Pharmacy

Dr. Eric Barker
Editor
Pharmacological Reviews

Dr. Jo Davisson
Chair, Synthetic and Biological Chemistry B Study Section, NIH
Pharmacy professors say flipping classrooms is about making time for active learning

Professors Animesh Aditya’s and Marc Loudon’s medicinal organic chemistry class, required for pharmacy students, occasionally lacks something many other classes have – lectures, at least in class. What it doesn’t lack for is learning.

The flipped classroom model the two use is just one example of the transformative learning models being implemented through Purdue’s IMPACT program. The campus-wide initiative, which is currently seeking faculty interested in redesigning classes, helps rebuild foundational courses around active, participatory, student-centered teaching and learning. Applications for the program and more information are available here.

Standing at the front of the large lecture hall, Aditya (or Dr. A, as his students call him) scans the 250 students seated in front of him, when suddenly a hand pops up. He nods, then sprints up the steps, eager to address the question.

Across the room, Loudon is surrounded by a group of five students, who are listening intently as he explains how to solve a complex medicinal chemistry problem.

For 30 minutes, the two professors and a handful of teaching assistants circle the classroom, answering questions, chatting with students and assessing how well everyone is mastering the concepts before them.

They won’t teach from the lectern during the entire class period. The students have already sat through today’s lecture – at home, on the bus, anywhere they can connect a device to the Internet. They come to class, Aditya says, to apply the concepts they have learned.

Purdue-developed Convoy app houses various course materials in single, easy-to-use interface

Eric Barker has been an early adopter of instructional technology since he started working for Purdue in 1998. Back when lectures were recorded on audio cassettes, the professor of medicinal chemistry and molecular pharmacology and his team became the first group on campus to stream the audio, and then video, online.

Technology has changed, but Barker’s mission to help students learn by making course content easily accessible hasn’t. So when Barker heard students complain about the difficulty of navigating online textbooks, he turned to his own experience with an iPad and began to envision a solution. His vision led to a new app from ITaP, called Convoy, which faculty will be able to pilot test in the fall.

“I was trying to use an online textbook in my class, but students were frustrated because they had to go to various Web pages and sections of the book to locate the appropriate information,” says Barker, a 2012-13 recipient of the Charles B. Murphy Outstanding Teaching Award. “Students’ frustrations became a barrier for the adoption of technology, so we wanted to find a better way to make content accessible and seamless within a course, within a given lecture.”

Eric Barker, professor of medicinal chemistry and molecular pharmacology, holds an iPad displaying Convoy, the latest technology available in a suite of teaching and learning applications by Purdue Studio.
Experiential Education impacts every region of the State

Dollars Saved by PharmD Student Interventions (in millions)

PharmD students save health care institutions $1.6 to $2.8 M annually
Purdue University Pharmacy manages TB drug distribution for 91 of Indiana’s 92 counties
Created through the Lilly Endowment grant, this self-sustaining unit is a recognized leader in patient safety

>15,000 health professionals trained
50 states impacted
8 countries impacted
84 health systems collaborators
41 student externships/internships
E-Text Initiative

- Piloted Spring 2013
- 2 publishers cover 50% of required texts in required courses
- Implemented Fall 2013
- Savings of at least $1,800 per student
- Allows faculty to select optimal chapters