University of Georgia
Pharmaceutical and Biomedical Sciences

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Director, B.S. Program in Pharmaceutical Sciences

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I. Welcome
II. How do you choose a major?
III. BS Pharm Sci Course Curriculum
IV. Faculty introductions
V. Questions
VI. Reception
Popular Majors at UGA

**MAJOR DECISIONS**

The top 10 most popular degree majors for UGA undergraduate, graduate and professional students in fall 2017:

- **Biology** = 2,472
- **Psychology** = 1,709
- **Finance** = 1,499
- **Computer Science** = 1,254
- **International Affairs** = 893
- **Marketing** = 770
- **Accounting** = 649
- **Pharmacy** = 585
- **Management Information Systems** = 606

Source: 2017 UGA Fact Book

**MAJOR DECISIONS**

The top 10 most popular degree majors for UGA undergraduate, graduate and professional students in fall 2018:

- **Biology** = 2,561
- **Psychology** = 1,715
- **Finance** = 1,487
- **Computer Science** = 1,316
- **International Affairs** = 864
- **Political Science** = 812
- **Marketing** = 752
- **Accounting** = 722
- **Management Information Systems** = 671
- **Pharmacy** = 664

Source: 2018 UGA Fact Book
Academic Programs

- Undergraduate Degree
  - Bachelor of Science in Pharmaceutical Sciences
- Double Dawgs BS/MS Degree in 5 YR
- Professional Degree
  - What is the Difference Between a Pharmaceutical Scientist and a Pharmacist?
- Graduate Program in Pharmaceutical and Biomedical Sciences
  - Masters
  - PhD
Pharmacist vs Pharmaceutical Scientist

- Design and develop new safe and effective medicines
- Drug discovery & Drug delivery
- Experts in chemistry and biology

- Provide advice on the safe and effective USE of medicines
- Patient care, Pharmacies, Hospitals
Is a Career in the Pharmaceutical Sciences Right for Me?

How Do I Know If a Career in the Pharmaceutical Sciences is Right for Me?

- Do you enjoy science and want to pursue a science-based career?
- Do you like to work hands-on in a laboratory setting?
- Do you have a desire to contribute to the health and well-being of society through the development of medicines and therapies?

If so, a career in pharmaceutical sciences may be a good choice for you!
Background

✓ replace the old B.S. Pharmacy program as an entry level degree for industry

✓ provide a more appropriate and interdisciplinary background for advanced degree(s) focused on drug development

Objective

✓ prepare students with broad training in mathematics and basic sciences with a strong emphasis on the pharmaceutical sciences

✓ graduates will be able to integrate their knowledge with significant research experience to enhance career path development
Major in Pharmaceutical Sciences

- Started in 2013
- 1st BS PS 2015
- 1st BS/MS Class
  Started 2018
  Graduated 2019

Numbers represent – Pre-Pharmacy and Pharmaceutical Sciences major students
Structure of Program

- Two years of math and basic sciences
- Fulfill GA general education core requirements
- Final two years at the College of Pharmacy
  - Courses and labs in Pharmaceutical Sciences
  - Undergraduate Research
  - Major Electives

Admission Statistics

2022: A Competitive Class

99% 3800 285

99% took at least one course at an advanced level such as AP, IB, or Dual Enrollment.
More than 3800 have a core high school GPA of 4.00 or higher.
More than 285 graduated first or second in their class.
<table>
<thead>
<tr>
<th>Core Area</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>ENGL 1101, ENGL 1102, MATH 2250</td>
</tr>
<tr>
<td>II</td>
<td>CHEM 1211+L, BIOL 1107+L</td>
</tr>
<tr>
<td>III</td>
<td>PHYS 1211 or PHYS 1211+L</td>
</tr>
<tr>
<td>IV</td>
<td>World Language and Culture, COMM 1110 or COMM 1500</td>
</tr>
<tr>
<td>V</td>
<td>History and 2 Social sciences</td>
</tr>
<tr>
<td>VI</td>
<td>CHEM 1212+L, CHEM 2211+L, CHEM 2212+L, STAT 2000</td>
</tr>
</tbody>
</table>
### Freshman Year

#### Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1101</td>
<td>Eng. Comp. I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1211</td>
<td>Fresh. Chem. I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1211L</td>
<td>Lab</td>
<td>1</td>
</tr>
<tr>
<td>MATH 2250</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>Gen Elective</td>
<td>Area IV or V</td>
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</tr>
<tr>
<td>FYOS 1001</td>
<td>Odyssey Sem.</td>
<td>1</td>
</tr>
<tr>
<td>Semester</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

#### Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1102</td>
<td>Eng. Comp. II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1212</td>
<td>Fresh. Chem. II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1212L</td>
<td>Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 1211/L</td>
<td>Prin. of Physics</td>
<td>4</td>
</tr>
<tr>
<td>COMM 1110</td>
<td>Intro. Pub. Sp.</td>
<td>3</td>
</tr>
<tr>
<td>Semester</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

- **For Full HOPE / Zell Miller Scholarships**: 15 credit hours is reqd per semester
### Sophomore Year

**Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2211</td>
<td>Org. Chem. I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 2211L</td>
<td>Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 1107</td>
<td>Prin. of Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 1107L</td>
<td>Lab</td>
<td>1</td>
</tr>
<tr>
<td>PE Elective</td>
<td>Phys. Education</td>
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<tr>
<td>Gen Elective</td>
<td>Area IV or V</td>
<td>3</td>
</tr>
<tr>
<td>Gen Elective</td>
<td>Area IV or V</td>
<td>3</td>
</tr>
<tr>
<td>Semester</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

### Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2212</td>
<td>Org. Chem. II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 2212L</td>
<td>Lab</td>
<td>1</td>
</tr>
<tr>
<td>STAT 2000</td>
<td>Intro Stats</td>
<td>4</td>
</tr>
<tr>
<td>PMCY 2020</td>
<td>Pills, Potions and Drugs in Modern Med.</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>Area IV or V</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>Area IV or V</td>
<td>3</td>
</tr>
<tr>
<td>Semester</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>
 Admission Requirements

- Cumulative GPA of 2.5 or higher (60 Hours)
- ENGL, MATH, BIOL, CHEM, PHYS, Courses
- Grade of “C” or better
- “Intended Pharmaceutical Sciences Major”
- STUDENT ADVISING
Student Advising / Questions

- Franklin College Advising Office (Years 1 & 2)
  - Ilya Winham or Samantha Pattillo

- College of Pharmacy (Years 3 and 4)
  - Leslie Standridge

- Make appointments using SAGE

- Website www.rx.uga.edu
  - Program information
  - Scholarships / Internships information
## Junior Year

### Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCMB 3100</td>
<td>Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>PMCY 3000</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PMCY 3500</td>
<td>Pharm. Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2260</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>Semester</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

### Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMCY 3200</td>
<td>Pharm. Sci. I</td>
<td>3</td>
</tr>
<tr>
<td>PMCY 3300L</td>
<td>Pharm. Tech.</td>
<td>1</td>
</tr>
<tr>
<td>PMCY 3800</td>
<td>Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>PMCY 4300</td>
<td>Med. Chem.</td>
<td>3</td>
</tr>
<tr>
<td>Major Elective</td>
<td>PMCY, BIOL,.</td>
<td>3</td>
</tr>
<tr>
<td>Gen. Elective</td>
<td>Area IV or V</td>
<td>3</td>
</tr>
<tr>
<td>Semester</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

- Other courses may be selected depending on total credit requirements
- For Transfer Credits [www.admissions.uga.edu/transfer](http://www.admissions.uga.edu/transfer)
# Senior Year

## Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMCY 4200</td>
<td>Pkinetic &amp; P’dynam</td>
<td>3</td>
</tr>
<tr>
<td>PMCY 4500/L</td>
<td>Pharm Drug Dev.</td>
<td>4</td>
</tr>
<tr>
<td>PMCY 4960</td>
<td>Pharm Research I</td>
<td>2</td>
</tr>
<tr>
<td>ENGL 3590W</td>
<td>Tech Writing</td>
<td>3</td>
</tr>
<tr>
<td>Major Elective</td>
<td>PMCY, BIOL,…</td>
<td>3</td>
</tr>
</tbody>
</table>

Semester: 15 credits

## Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMCY 4600</td>
<td>Biological Therapeutics</td>
<td>3</td>
</tr>
<tr>
<td>PMCY 4510/L</td>
<td>Adv Drug Dev</td>
<td>4</td>
</tr>
<tr>
<td>PMCY 4970</td>
<td>Pharm Research II</td>
<td>2</td>
</tr>
<tr>
<td>Major Elective</td>
<td>PMCY, BIOL,…</td>
<td>4</td>
</tr>
</tbody>
</table>

Semester: 13 credits
Experiential Learning (EL)

- PMCY 4960 Pharmaceutical Sciences Research I
- PMCY 4960 / 4970 (2 Credits each)
- Approved Research Courses – BIOL 3110L, GENE 4210L / 4220L / 4230L / 4240L
- CURO Res Assistantship / Summer Fellowship $$$
- INTERNSHIPS ($$$)
  - Pharmaceutical Companies, UGA I-Corps
  - Study Abroad

‘Learning by doing’

April 2015

UGA to become one of largest public universities in US to require experiential learning for undergraduates
Major Electives

- Total of 9-10 credit hours required

- Electives can be chosen to meet professional school admissions requirements
  - Pharmacy School (PharmD), Medical School
  - Physician Assistant, Nursing, Public Health
  - Sales/Marketing

- BIOL, CHEM, PHYS, STAT, PMCY Courses

- At least 2 courses must be at 3000 / 4000 level

- All Major electives must be completed with a “C” or better
Minor in Pharmaceutical Sciences

- Total of 15 credit hours required
- 9 hours of PMCY courses (3000 or above)
- 6 hours from the major electives list
- Area VI courses can be counted for your minor

MAJORS - Biology, Chemistry, Marketing

MAJORS - BioChemical Engineering
Ambitious and Motivated Students

AP Credits ~ 30 credits

Competitive Advantage

Career Placement – jobs

Graduate / Medical Programs

Interdisciplinary Education

MS Tracks
  - Pharmaceutical Sciences
  - Regulatory Sciences

New Tracks – Proposed
  - Public Health, Engineering, Management, Pharmacy, Law
  - Bio fermentation (Biotechnology)
QUALITY & RIGOR

GRADUATE LEVEL COURSES taken while earning an undergraduate degree benefit the student and the quality of the degree program.

4-Year Undergraduate Program

Increased academic rigor through GRADUATE LEVEL COURSES

1-Year Master’s Program

provides a strong foundation for graduate student success.

Because graduate-level courses taken during an undergraduate degree program count toward a master’s degree, students can finish both degrees in 5 years rather than the traditional 6 years.

THE UGA ADVANTAGE: Double Dawgs
Excellent Gateway for

- Professional Schools
  - Pharmacy, Medical, Nursing,
  - Dental, Veterinary, Physician Assistant

- Graduate Studies
  - MS, PhD Pharmaceutical & Biomedical Sciences
  - Regulatory and Clinical Programs

- Career & Job Opportunities
  - Pharmaceutical, Biopharmaceutical
  - Government, Research Universities
  - Medical Devices, Nutraceuticals, Cosmetics
“I could have gone into medicine and become a doctor and maybe helped thousands of people in my lifetime, but if you develop a drug, you can help millions.”
—Rick Shimkets

Kirby Alton (BS ‘74, PhD ‘81), far left, and Rick Shimkets (BS ‘93) are leaders of Abcome, a biotech startup incubated through Innovation Gateway, UGA’s technology transfer program. The company focuses on creating antibodies targeted to autoimmune diseases.

http://ugamagazine.uga.edu/issue/september-2016