

Pre-Physician Assistant

Chemistry and Biochemistry

Biochemistry Major

Entry level for a Physician Assistant is a Master's Degree. PA schools accept students with a Bachelor's degree in any major as long as a student has all prerequisite courses. Admission to PA programs is highly competitive. A minimum 3.0 GPA is typical with the average GPA being higher than 3.0. PA programs are graduate programs so students must take the GRE although the MCAT is acceptable for some programs. Course requirements in common across programs include: BIOL121/122 and 375/376, CHEM261/262 and 353/354, MATH241, PSY201 and 261 or 322, HP 115. Sometimes required coursework must be completed by the time of application although a completed Bachelor's is not required at that time. As little as a few shadowing experiences to as many as 2000 hours of direct patient care experience are required depending on the program; more hours with a PA are better. You must check specific programs for up to date requirements. The following courses are a typical course of study for a biochemistry major interested in Physician Assistant school:

| Fall Year 1 | | Spring Year 1 | |
|--|----------|--|----------------|
| General Chemistry I (CHEM 261) | 4 | General Chemistry II (CHEM 262) | 4 |
| Principles of Biol (BIOL 141) | 4 | Botany (BIOL 151) or Zoology (BIOL 152) | 3 |
| Calculus I (MATH 230) | 3 | Intro to Public Speaking (CMST 101/107) | 3 |
| Rhetoric & Composition I (ENG 101) | 3 | Rhetoric & Composition II (ENG 201) | 3 |
| 1st Year Experience (UNIV 101) | <u>1</u> | Principles of Statistics (STAT 241) | 3 |
| | 16 | | 16 |
| Fall Year 2 | | Spring Year 2 | |
| Organic Chemistry I (CHEM 353) | 4 | Organic Chemistry II (CHEM 354) | 4 |
| Botany (BIOL 151) or Zoology (BIOL 152) | 3 | Cell Biology (BIOL 334) | 3 |
| General Physics I (PHYS 175) | 4 | General Physics II (PHYS 176) | 4 |
| Intro to Psychology (PSY 201) (<i>Core</i>) | 3 | Quantitative Analysis (CHEM 321) (or Summer) | <u>4</u> |
| Chemistry Seminar (CHEM 218) | <u>1</u> | Quantitative 7 mary 515 (chem 521) (of Summer) | <u>.</u> 15 |
| | 15 | | |
| Fall Year 3 | | Spring Year 3 | |
| Biochemistry I (CHEM 431) | 4 | Biochemistry II (CHEM 432) | 4 |
| Chemistry Seminar II (CHEM 318) (or year 4) | 1 | Chemistry Seminar III (CHEM 418) (or year 4) | 1 |
| Animal Physiology (BIOL 333) (BIOL elect) | 4 | *Intro to Research (CHEM 499/BIOL 499) | 1 |
| Lifespan Developmental Psychology (PSY 261) or | | Genetics (BIOL 382) | 4 |
| Abnormal Psychology (PSY 322) | 3 | Human Anatomy and Physiology (BIOL 122) | 4 |
| Human Anatomy and Physiology I (BIOL 121) | 4 | Hamair Anatomy and Thysiology (Sioc 122) | <u>.</u> 14 |
| | 16 | | |
| Fall Year 4 | | Spring Year 4 | |
| Survey of Physical Chemistry (CHEM 361) | 4 | CHEM Elective | 4 |
| Instrumental Analysis (CHEM 421) | 4 | Microbiology (BIOL 375) + Lab (BIOL 376) | 5 |
| *Intro to Research (CHEM 499/BIOL 499) | 1 | Concepts in Wellness and Fitness (KIN 192) | 1 |
| Core Electives | 6 | Core Elective x2 | 6 |
| Medical Terminology for the Health Profession | S | | 16 |
| (HP 115) | 2 | | |
| | 16 | | |

This is a <u>suggested</u> sequence of courses. There is some flexibility in this schedule. Courses taken in first year depend on math placement. In order to graduate, you must fulfill 39 credit hours at 300/400 level. *Research courses can be taken in any semester, two are required for the degree

DEPARTMENT FACULTY RESEARCH INTERESTS

Dr. Brian Bohrer (Ph.D. Analytical Chemistry, Indiana University)

Environmental analysis of water samples aiming to detect the presence of agricultural and pharmaceutical pollutants using chromatography and mass spectrometry instrumentation

Dr. Shelly Blunt (Ph.D. Organic Chemistry, University of Iowa)

Synthesis of quinoline alkaloids as breast cancer target agents and nucleosides as HIV/AIDS target agents and asymmetric epoxidations to form chiral drug targets

Dr. Jeannie Collins (Ph.D. Biochemistry, University of Southern Mississippi)

Cytoskeletal proteins involved in motility, structural support, organelle transport and intracellular communication, DNA replication of both slime molds and plants

Dr. Priya Hewavitharanage (Ph.D. Photochemical Sciences, Bowling Green State University)

Synthesis of fluorescent molecules for biological applications such as photodynamic therapy for the treatment of cancer

Dr. Mark Krahling (Ph.D. Analytical Chemistry, University of Wisconsin-Madison)

Elemental analysis using atomic spectroscopy, solid phase extraction & gas chromatography—mass spectrometry, and electrospray ionization mass spectrometry

Dr. Jacob Lutter (Ph.D. Inorganic Chemistry, University of Michigan)

Synthesis of metallacrowns that sensitize emission from trivalent lanthanide ion guests introduced into the macrocyclic core as potential imaging agents, energy upconvertors, and other applications

Dr. Evan Millam (Ph.D. Physical Chemistry, University of Minnesota)

Electronic spectroscopy, ab initio computational chemistry, first principles determination of vibrationally resolved molecular electronic spectra, transition state calculations, calorimetry

Dr. Ken Walsh (Ph.D. Organic Chemistry, University of Bristol)

Synthesis of carbohydrates and analogs, organocatalysis and organic synthesis, adaption of modern synthetic techniques for the teaching laboratory