Biomedical Informatics, PhD

ESBMIPHD

As a doctoral graduate, you'll be set up for success in the growing and innovative field of biomedical informatics through your depth of knowledge and unique skill set.

Program description

Degree awarded: PHD Biomedical Informatics

The PhD program in biomedical informatics enables students to develop expertise in areas such as bioinformatics, clinical informatics, population health management and imaging science.

The biomedical informatics program fosters collaborations among academic researchers, health care providers and industry partners to apply new developments in informatics theory to clinical practice, biomedical research and public health. Students may also explore cross-cutting areas such as data science and artificial intelligence.

Students learn at the leading edge of the field through specialized coursework in an area of focus and independent research. The program fosters strong collaborative relationships with a variety of healthcare organizations, the bioscience industry and governmental agencies, providing an unparalleled opportunity for doctoral students to explore and contribute to advances in informatics.

Students should note that some courses and faculty offices are located at the Health Futures Center building in North Phoenix.

At a glance

- **College/School:** College of Health Solutions
- **Location:** Tempe

Degree requirements

84 credit hours, a written comprehensive exam, an oral comprehensive exam, a prospectus and a dissertation

Required Core (22 credit hours)

BMI 502 Foundations of Biomedical Informatics Methods I (3)

BMI 504 Introduction to Clinical Environments (3)

BMI 505 Foundations of Biomedical Informatics Methods II (3)

BMI 515 Applied Biostatistics in Medicine and Informatics (3)

BMI 540 Problem Solving in Biomedical Informatics (3)

BMI 560 Teaching in Biomedical Informatics (2)

BMI 570 BMI Symposium (2)

BMI 601 Fundamentals of Health Informatics (3)

Electives (32 credit hours)

Research (18 credit hours)

BMI 792 Research (18)

Culminating Experience (12 credit hours)

BMI 799 Dissertation (12)

Additional Curriculum Information

Students entering the doctoral program with a master's degree in a related discipline may count up to 30 credit hours from the master's degree toward the total credit hours, with program approval.

Admission requirements

Applicants must fulfill the requirements of both the Graduate College and the College of Health Solutions.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of their first bachelor's degree program, or applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

All applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. statement of purpose
4. educational background essay
5. resume or curriculum vitae

6. three references (academic or professional)
7. proof of English proficiency

Additional Application Information

An applicant whose native language is not English must provide proof of English proficiency regardless of their current residency.

Prior bachelor's or master's degrees in biology, computer science, engineering or statistics, or postbaccalaureate training as a health professional in medicine, nursing or pharmacy is preferred. Applicants who have earned degrees in other unrelated fields with appropriate academic backgrounds are also considered.

All applicants must have basic competencies in general biology (BIO 181 or equivalent), statistics (HCD 300 or STP 226 or equivalent) and computer programming (BMI 110 or CSE 110 or equivalent).

The statement of purpose should be one to two pages and indicate the applicant's interest in the program, knowledge of the field and career plans. Applicants are encouraged to connect with program faculty who could be potential research mentors and include this information in their statement if it is available at the time of application.

To accommodate students' diverse backgrounds, the applicant is asked to describe their educational and professional background in the following areas: computer science, decision sciences, artificial intelligence, statistics and mathematics, biological sciences and health sciences. This essay should be no longer than one page.

Contact information of three references is required. References will be contacted via email to submit a letter of recommendation and respond to a series of questions about the applicant.

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about ASU tuition and financial aid options to find out which will work best for them.

Application deadlines

Fall

expand

Program learning outcomes

Program learning outcomes identify what a student will learn or be able to do upon completion of their program. This program has the following program outcomes:

- Generate designs to solve biomedical informatics problems.
- Apply theories, typology, frameworks, representations, methods, and processes used in different contexts of biomedical informatics

- Create new knowledge, including theories, typologies, frameworks, representations, methods, and processes, to address biomedical informatics problems

Career opportunities

Professionals with advanced training in biomedical informatics are in high demand across a variety of sectors and industries, including academic institutions, not-for-profit research institutes, and governmental and public health agencies and health care organizations, as well as the information technology, biotech and pharmaceutical industries.

Career examples include:

- bioinformatics scientist
- biostatistician
- data scientist
- deep learning engineer
- public health informatics scientist
- research scientist
- senior analyst
- software engineer
- university faculty

Contact information

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