University of Colorado Anschutz Medical Campus

Anschutz

GRADUATE SCHOOL

Biomedical Informatics, Modeling, and AI (PhD)

LEARN MORE

The Biomedical Informatics, Modeling, and AI (BIMA) PhD program, formerly **Computational Bioscience (CPBS)**, trains computational scientists for biomedicine's AI era. Informatics covers the data foundation, modeling the mechanistic understanding, and AI the scalable intelligence.

Our students work across the biological-to-clinical spectrum, from molecules and neural circuits to imaging and clinical care. A six-course core follows the lifecycle of computational science: scientific question, biomedical data, AI models, scientific reasoning, validation, and translation. Students build expertise by hand first, then learn to direct and verify AI, defending every analytical choice. Each student specializes in one of four tracks: 1) **Bioinformatics & Computational Biology**, 2) **Computational Neuroscience**, 3) **Imaging Informatics**, or 4) **Clinical Informatics**. Dissertations can follow one (or a combination) of **five pathways** (discovery, methods, clinical translation, entrepreneurship, or open science), each producing a different evidence of impact, evaluated under one standard of rigor.

> *During an internship on campus in my undergraduate career, I was exposed to various professors in different departments. [This] program stood out for its diversity of research and the incredibly cooperative community. Being in Denver was a huge plus for me as well.*
>
> **— Dr. Sofia Colorado, recent PhD graduate**

Program Structure

Year 1

Four core courses alongside three lab rotations, plus writing and critique workshops. A scientific reasoning qualifying exam in June; join your dissertation lab by July 1.

Year 2

Two core courses, a specialization elective, and Research Studios on real-world problems & datasets.

Year 3 and Beyond

Comprehensive exam and pathway declaration, dissertation research, a required research internship, and the dissertation defense.

Instructional Type

In-person

Time for Completion

Approximately 5 years

Cost

None. All admitted students receive full tuition, health and dental insurance, and a stipend of **$44,290 per year** for living expenses.

Application Deadline

December 1

Prerequisites

A bachelor's degree or higher (minimum 3.0 GPA) in a quantitative, computational, or biomedical field. Expected preparation: calculus, probability and statistics, programming, and track-specific background. Equivalent preparation through advanced coursework, research, or professional experience counts. Applicants from nontraditional backgrounds are encouraged to apply.

How to Apply

See specialization-specific requirements and apply at
cuanschutz.edu/graduate-programs/biomedical-informatics-modeling-and-ai/admissions

Contact Us

Email us at
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