Institute for Quantitative Biomedicine

Mission:
To foster a vibrant, cohesive community of Rutgers basic, applied, and clinical scientists committed to collaborative quantitative biomedical research
To develop next generation quantitative researchers for work at the interface with biology and medicine
IQB’s Graduate Program: Quantitative Biomedicine

- Interdisciplinary graduate program encompassing the Physical, Computational, Mathematical, and Life Sciences
- Teams of basic and clinical scientists working to educate students and develop the tools for tomorrow’s discoveries
- Modeling of new paradigms of learning that demands team work and hands-on learning
- 120 faculty from 34 departments
The Joint PhD Program

A unique, interdisciplinary program that partners QB with the different STEM and medical programs at Rutgers, including:

- Biomedical Engineering
- Molecular Biosciences:
  - Biochemistry
  - Cell & Developmental Biology
  - Cellular & Molecular Pharmacology
  - Microbiology & Molecular Genetics
  - Physiology & Integrative Biology
- Chemistry & Chemical Biology
- Computer Science
- Ecology & Evolution
- Electrical & Computer Engineering
- Materials Science and Engineering
- Mathematics
- MD/PhD Program (with Princeton University)
- Neuroscience
- Physics
- Statistics & Biostatistics

Provides deep knowledge in the student’s core discipline as well as interdisciplinary and collaborative training.
The Joint PhD Program

• A “Joint Ph.D. degree” is a single Ph.D. degree that involves training in two areas. This differs from a “dual Ph.D. degree” which consists of two degrees.

• A customized *joint degree track* is designed collaboratively with the student to meet their unique educational and training needs.

• Primary degree program requirements

• 2-3 additional courses to complement traditional graduate program, including:
  • Immersive hands-on Interdisciplinary Quantitative Biology Boot Camp
  • Interdisciplinary seminar requirement

• Professional development
Interdisciplinary Quantitative Biology Boot Camp

IQB hosts annual 1-2 week immersive boot camps to augment the interdisciplinary education offered at the interface of the quantitative and biological sciences (for students, staff, faculty, individuals in industry).

- The curriculum includes:
  - Lectures
  - Hands-on exercises (sometimes with a wet laboratory component; with *in silico* workshops)
  - Collaborations involving data gathering and sharing, quantitative analyses
  - Networking and career mentoring
  - A final student-led presentation
Interdisciplinary Quantitative Biology
Boot Camp (Cont’d)

Multiple Boot Camps are offered on an evolving basis:

- Drug Discovery and Development (2016)
- Cryo-Electron Tomography (2018)
Contacts

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