Computational and Mathematical Biology Minor

The minor in Computational and Mathematical Biology, housed in the Biology Department, provides students with interdisciplinary training to address biological questions using the tools and concepts from computer science, mathematics and/or statistics. Students who complete this minor will appreciate the important role that quantitative sciences now play in biology, and also recognize that biology is leading to exciting advances in these quantitative fields.

Minor Prerequisites: BIO 201 (Foundations of Biological Inquiry), CSC 220 (Computer Science I: Computational Problem Solving), MAT 127 (Calculus A), and MAT 128 (Calculus B) or STA 215 (Introduction to Statistical Inference), or permission of Computational and Mathematical Biology group.

Courses Satisfying Minor: Students will take 5 course units to complete the minor. All students are required to take the *Foundations of Computational Biology Course.* The remaining 4 courses can be chosen from the list of options below. Note that students can only count one course (plus one semester of a research course) that is in their major Department, and as per TCNJ policy, at most one course unit can double-count between a student's major and minor.

Required

- *Foundations of Computational Biology*

Options

- BIO 352 – Biostatistics
- BIO 471 – Genomics and Bioinformatics
- CHE 470 – Computational Biochemistry (Special Topics)
- CSC 470 – Algorithms in Computational Biology (Special Topics)
- MAT 330 – Mathematical Biology
- PHY 336 – Biophysics
- Research in computational or mathematical biology, with approval
- Non-Biology majors can count either:
    - BIO 221 – Ecology, or
    - BIO 231 – Genetics, or
    - BIO 370 – Systematic Biology)
- Biology majors can count up to one course in the Mathematics & Statistics or Computer Science Department that is not on the above list, with approval.