What I Wish I’d Known When I Was a Bioinformatics Major

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We are bioinformaticians, that's what we do.

Sample preparation

Sequencing

Raw data

[Gene identification
Novel genes
Discoveries...etc]

STUFF
Bioinformatics

the application of statistics and computer science to the field of molecular biology
What does this mean for you?

- it is the thread that will weave through all fields of biology and medicine in the next half century
- bioinformatics can lead you to a wide variety of academic and career choices
- Where do you want to go?
What is Bioinformatics?

Bioinformatics Major

Resources

How to Be Successful

Contact

Bioinformatics Major

algorithms  alignment  bayesian  bioethics  bioinformatics  biology
chemistry  computational  data structures  evolutionary  gene  general chemistry
bioinformatics  genomics  microarray  molecular  organic chemistry  phylogenetic tree
programming  protein  sequence alignment  statistics

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# Learning Objectives

## Biology and Programming

Demonstrate a fundamental knowledge of biology and computer programming skills.

## Research and Inquiry

Acquire the inquiry skills and tools necessary to answer bioinformatics research questions.

## Research Collaboration

Collaborate in bioinformatics research at the university.

## Professional Preparation

Bioinformatics skills and knowledge will help secure employment or advancement toward higher education.
Bioinformatics Major

- interdisciplinary program offering substantial training in both biological and the physical and mathematical sciences
- program emphasizes the integration of computer science with genetics and molecular biology
- consists of taking classes from a variety of disciplines: biology, computer science, chemistry, statistics, etc.
Requirements

- University Core Requirements
  (general education and religion courses)
- Baccalaureate Degree Requirements
  (gpa and minimum credit hours)
- Major Requirements
  (bioinformatics major)
John Kauwe is the Program Director for the Bioinformatics major. He is the reigning authority on major requirements, class substitutions, and the person who certifies that you can graduate.
the academic advising for all College of Life Science students

you have to go through them to switch majors (which you would never do), figure out 4 year plans, etc.

lets be honest, they don’t know anything about bioinformatics (seriously). They probably think Perl is “a hard object produced within the soft tissue of a living shelled mollusk.”
Run perl script...
How to Be Successful

- Complete your computer science core classes early
  - CS 142: Introduction to Computer Programming
  - CS 235: Data Structures and Algorithms
  - CS 240: Advanced Programming Concepts
  - CS 360: Internet Programming

Then decide your direction from there. If you want to go to professional school focus more on molecular biology. If you want to do more of a pure bioinformatics career focus on statistics and computer science.
• Take calculus first and take bayesian statistics soon after
• Hate biology and need help with biology core? Check out Life Sciences Learning Center (113 HRCB)
• Get into a lab!! If you can't manage to get paid initially, volunteer first and tried to get paid for subsequent semesters
• Complete a summer internship! Regardless of your experience there are 100s of internships to fit any experience level. If you can do an internship every summer.
Let your imagination run wild!

if you are interested in Cotton work, there is someone on campus that does cotton. if you are interested in insects find someone who publishes papers on insects.

Find your passion and odds are good that there is a professor on campus that shares the same one.
Have fun!

Develop a bioinformatics friend. Two heads are much better than one.
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Life Science Student Services: 380 WIDB

Life Science Learning Center:
113 HRCB
http://tinyurl.com/lifesciencelearning