

## Disciplinary Communication in Bioinformatics

### 1. Educational Objectives

The educational objectives for disciplinary communication in Bioinformatics are based on the interdisciplinary nature of the audiences for both written and oral presentations---we almost always face audiences that are split between those trained in biology or chemistry and those trained in computer science or statistics.

#### Writing

Students learn to

- 1) present biological problems and information clearly to an audience who are not trained in biology,
- 2) present programs and algorithms clearly to an audience not trained in computer science,
- 3) document programs clearly for ease of maintenance by future programmers,
- 4) use library and web resources for finding biological data and prior research to use,
- 5) use the writing conventions of bioinformatics, including data presentation, algorithm description, citation conventions, and paper organization.

#### Speaking/presentation

Students learn to present research results verbally, with accompanying computer projection.

Students learn to present research results in poster format.

### 2. How the educational objectives are met in the curriculum

The disciplinary communication requirements are spread out through several courses, with the highest concentration in two required class: CMPE 185 (Technical Writing for Computer Engineers and Scientists) and BME 205 (Bioinformatics: Models and Algorithms). The capstone course (any of several graduate classes in bioinformatics) also provides an important component.

The CMPE 185 course alone exceeds the 25-page guideline, and substantial writing is required in BME 205 and graduate capstone classes.

We expect to see at least

2 written papers involving some library research into biological questions. One of these papers (generally about 5-10 pages) is required for BME 205, the other for the graduate capstone class. Both papers also require interpretation of results from bioinformatic analysis of data, not just library research.

1 written paper describing a computer program or algorithm. This is generally met by one or more of the CMPE 185 writing assignments.

1 oral presentation (CMPE 185 and some capstone classes)

1 poster presentation (CMPE 185 and some capstone classes)

1 written paper involving own research (grad capstone class)

1 resume (CMPE 185)

1 fellowship application (BME 205)

several documented programs (BME 205)