**Incorporating Bioinformatics Into the Undergraduate Biology Curriculum**

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**Background and Objectives**

Bioinformatics is a fundamental skill in biomedical research and core requirement for future workforce development. Informatics training within biology is challenged by three factors. First, most faculty do not have this training as part of their education. Second, the pace of data generation and analytical developments have outstripped the “organic” evolution of those skills. Third, the “command line” environment, fundamental to bioinformatics, is terse and challenging to beginners.

**Methods**

To overcome these challenges, we have developed a set of resources to support core bioinformatics training in the context of a typical biology curriculum offered at virtually every institution of higher education. The experience is discovery based with each student sequencing and annotating a microbe they isolate. Curriculum support includes: online active learning tutorials, dedicated computer infrastructure, and teaching guides.

**Results**

The curriculum has been established at several institutions across multiple states engaging hundreds of undergraduates. The fundamental remaining issue is the lack of experience among faculty in biology programs necessary to deliver this curriculum. We have recently established a faculty-training course focused on providing educators with the necessary bioinformatics skills.

**Discussion and Conclusions**

By achieving these goals we expect to train hundreds of faculty to incorporate bioinformatics competencies into their biology curricula during early undergraduate experiences. The ultimate target is the vast numbers of students that participate in these undergraduate programs and become the biomedical workforce for the future.

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