The BioCore Guide: A Grassroots Approach to Curriculum Development

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Introduction

Biology as a discipline has expanded dramatically. As we begin to acknowledge that we cannot possibly teach everything in an undergraduate biology curriculum, we struggle to come to consensus about what is most important for a biology major to know and be able to do by the time they graduate. The report Vision and Change in Undergraduate Biology Education (AAAS, 2011) offered a starting point for this process by identifying five core concepts on which to focus. However, these concepts are extremely broad (e.g. evolution) and have different meanings for the various sub-disciplines of biology.

Research Aim

Use a grassroots approach to create a set of general principles and specific statements that elaborate each of the five core concepts outlined in Vision and Change and can be used to guide curricular design.

Vision and Change: A Call to Action: Focus on Five Core Concepts

Grassroots Process to Articulate What a General Biology Major Should Know By the Time They Graduate

BioCore Guide (Excerpt)

Uses for BioCore Guide

- Strengthen connections between course-specific learning goals and the core concepts from Vision and Change.
- Align a curriculum with the BioCore Guide to identify gaps
- Help undergraduates see “the big picture” of biology
- Provide a “measuring stick” for accreditation
- Provide a basis for developing diagnostic programmatic assessments

Next Steps:

Develop a multiple T/F test aligned with the BioCore Guide that could be used to track changes in students’ ways of thinking as they progress through a biology curriculum.

This test is being developed in collaboration with University of Colorado at Boulder, University of Maine, Arizona State University and University of Nebraska. We plan to pilot the test in Fall 2014.

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