

Department of Chemistry and Molecular Biology
Biochemistry Education Candidate Seminar
January 28, 2008
4:00 pm in Dunbar 152

“Growth in Science Faculty Teaching: The Relationship Between Thoughts and Action”

Erika G. Offerdahl
Department of Biochemistry and Molecular Biophysics
The University of Arizona

Abstract

Upon entering academic positions, science faculty members are often well prepared for their research roles. Yet most have received little, if any, formal training on the teaching and learning of science to prepare them for their roles as instructors. Despite this inadequate preparation in teaching, colleges and universities are under increased pressure to shift the focus of undergraduate education from one on teaching to a focus on student learning¹. In order to change the focus from teaching to learning, and to support academic scientists in their growth as teachers, we need to have a more complete understanding of teaching at the university level.

Only within the past 20 years has there been a significant amount of research examining the teaching beliefs and practices of university academics². One implication of this research is that changes in teaching practice are likely related to changes in thoughts, judgments, or decisions related to teaching. Yet there has been little research that closely examines the nature of university academics' thoughts about teaching, how their thoughts develop as university instructors, or how thoughts are related to teaching practice in the university classroom.

The research presented will be the results of a two year investigation of “instructor thinking” (defined as an instructor's thoughts, beliefs, and attitudes about teaching, students, and learning) of biochemistry faculty members engaged in teaching upper-level, large-lecture biochemistry courses. Factors associated with faculty members' growth in thinking about teaching were identified, and the relationship between this growth and teaching practice was investigated. Implications for university science teaching will be discussed.

¹ Barr, R. B., & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education. *Change*, 27(6), 13–25

² Kane, R., Sandretto, S., & Heath, C. (2002). Telling half the story: A critical review of research on the teaching beliefs and practices of university academics, *Review of Educational Research*, 72(2), 177-228.