

PFF Fellow Profile



Fellow Name: **Bob Riggs**

Degree program / disciplines: Curriculum and Instruction (Coordinating Unit) Physics and Mathematics Co-disciplines

Courses taught: General Physics I & II, Secondary Math Methods, College Algebra, Calculus I, Differential Equations, Discrete Mathematics, Intermediate Algebra

Teaching interests:

All teaching begins with building relationships. Regardless of the subject matter, you can't teach until a safe, trusting environment is established in the classroom. I have found this to be true, whether I'm working with inner-city kids who have been thrown out of the regular high schools because of chronic behavior problems to include, drugs, gangs, and physical violence, to pre-med students taking my algebra-based physics course. Both sets of students need to know that you care about them, first as humans, then as students. It is the connections we make with our students that open the pathways to learning.

Research Interests:

- Integrating ethnomathematics into the classroom to enhance the learning of mathematics to underrepresented segments of the population. Study of equity and justice in the urban classroom. This is accomplished by introducing an ethnomathematics framework into the classroom. If students believe that *their* culture has contributed to the body of mathematical knowledge and not just Western thought, they are more receptive in believing they can learn "required" mathematics. Equity and justice issues are also examined by introducing data collection and statistics into the mathematics classroom.
- Preparing underrepresented pre-service teachers to successfully take mandated high-stakes tests (Praxis I & II, etc.) in order to remove a stigmatized barrier from them to enter the classroom.
- Curricular treatments in math and science that is effective with holistic learners; primarily, at-risk African American students living in generational poverty.
- Study of constructivist learning in opposition to the sociocultural norms of teaching mathematics and science.
- Using latest best practices models informed by Physics Education Research to promote a deeper understanding of physics and science.

Career Aspirations: Prepare future teachers for the math/science classroom. Find innovative ways of getting our teachers of underrepresented minorities into the classroom. Continue to research ethnomathematics and curricular treatments that make mathematics relevant to the urban learner. Stay at a research institution.

PFF Expectations: Continue to have thought provoking sessions with our PFF counterparts. Learning about and rubbing shoulders with other departments and disciplines is a lot of fun.

PFF Goals:

1. Develop a research topic and thesis: Still a work in progress. I have narrowed my research down to Ethnomathematics—math in various cultures and how we can use that to improve the achievement of our marginalized students of color at the K-12 level. So, I have the topic. Now I need to hone it down to a topic sentence/abstract to begin the dissertation.
2. Make contact with Lincoln University (HBC) and Haskell College (Native American College) to arrange a visit. In progress. Will be complete by the beginning of next semester.