

# Preparing Future Physics Faculty at the University of Colorado at Boulder

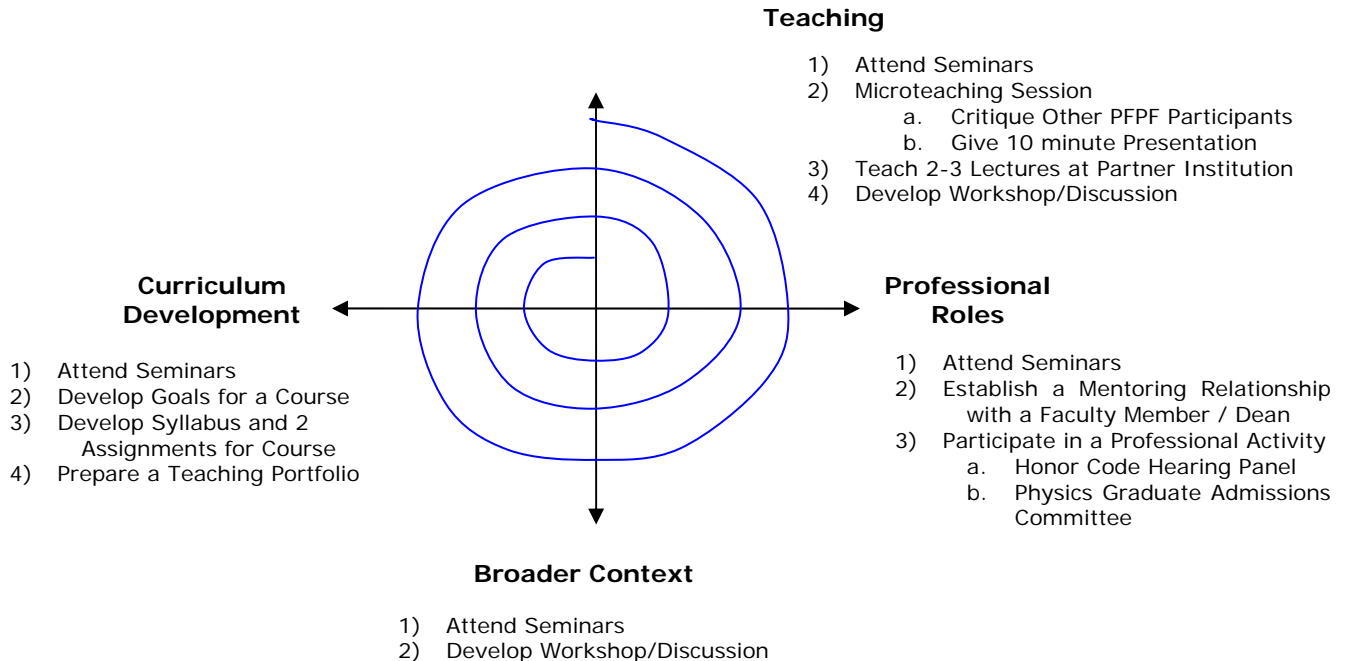
Sponsored by the Department of Physics, Colorado PhysTEC, and the LEAP Initiative

## Motivation

The Preparing Future Physics Faculty (PFPF) program augments traditional CU physics graduate and postdoctoral student preparation. Typically, graduate students and postdocs finish their programs with excellent research skills, but little idea how to teach a class, write a grant, or apply for a job. PFPF has several goals: First, to create a community where grads and postdocs (and interested faculty) can discuss issues beyond research. Second, to create a generation of faculty that is aware of recent research in physics education that provides insight into the shortcomings and possible improvements in intro physics courses. Third, since most physics Ph.D's will end up working outside the research intensive universities (i.e., major research schools like CU), PFPF seeks to raise awareness of the needs and opportunities at different institutions. Finally, PFPF gives physics graduate students training in useful career skills such as conducting a job search and writing grant proposals.

## Frame Work

CU PFPF participants can engage with various levels of commitment. This tiered system provides increasing levels of participation and involvement in four different themes: teaching, curriculum development, professional roles, and broader context. Minimal level involvement will include attending seminars and workshops without much time commitment. As the program evolves, participants will take on more and more responsibilities and duties to direct and sustain the program. This model can be graphically represented by a spiral circling four different axes.



## **Workshops Seminars Topics for discussion:**

### **Teaching**

- Cognitive Issues in Teaching Physics
- Peer Instruction
- Effective Lecturing
- Instructional Technology

### **Professional Roles**

- Perspectives on Different Academic Institutions
  - High School
  - Community College
  - Liberal Arts College
- Teaching Portfolio and CV Preparation
- Grant Writing

- Post-Graduate Job Market
- The Post-Doctoral Position

### **Curriculum Development**

- Intro to Physics Education Research
- The Role of Assessment
- Writing a Course Syllabus

### **Broader Context**

- Political and Social Issues in Physics
- Gender Issues in Physics
- Corporate and University Interactions