Presentation Outline

1. Engineering Teaching Portfolio Program (ETPP) Description
2. ETPP Design Principles
3. Qualitative Research
4. Case Studies (2)
5. Preliminary Results
Engineering Teaching Portfolio Program

Participants agreed to:

• Meet weekly for 8 weeks
• Receive & provide peer feedback
• Practice active & collaborative learning
• Provide researchers with feedback
ETPP Product

Teaching Portfolio Draft

- Teaching philosophy statement
- Diversity statement
- 2-3 annotated artifacts

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The Engineering Professional Portfolio - A collection of evidence, artifact generation, and overarching statements that a learner uses to communicate understanding and preparedness to perform engineering work.

Sample Portfolios - These samples suggest the varied nature in which artifacts, annotations, and overarching statements that may be included in the Engineering Professional Portfolio.

Portfolio Construction as a Promising Intervention - According to the theory proposed by Brown et al. (2004), effective learning occurs when the learner can construct knowledge that is personally meaningful and relevant to their context.

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Philosophy

An educator and scholar, I am committed to inclusive teaching and research and I firmly believe that we have a responsibility to be representative, both typically and potentially, of the growing number of women in STEM. As educators, we influence how our profession can develop through decisions about course content and selection of research topics. The exclusion of women and minority groups in STEM, whether through course content or institutional policy, is a serious issue that is both unethical and nonsensical. It is important to recognize and address this issue as we develop the next generation of engineers.

Institutional Change

I have helped increase awareness of diversity issues at the departmental and institutional levels through my work with faculty and TAs. Helping instructors create more inclusive courses has encouraged me to reexamine my own teaching and to explore diversity issues at a wider level. For example, I have started a teaching and learning group that meets regularly to discuss ways to make our courses more inclusive.

Public Outreach

I am very involved in public outreach work, such as creating and delivering workshops for high school students and parents. I also volunteer as a mentor for young women who are considering engineering careers. I believe it is important to inspire and encourage young women to pursue STEM careers.

Exercise

Current engineering educational practices modularize knowledge through distinct courses. Both research and practice show, however, that expert engineers hold a broad and deep integrated conceptual structure of their discipline.
ETPP Motivation

1. National need to improve engineering student learning
2. Improving engineering teaching is one strategy to improve learning
3. Engineering faculty and grads receive relatively little preparation to teach
4. Engineering grads are interested in learning more about teaching
ETPP Design Principles

• Customized for Engineers
• Peer-Focused
• Diversity
ETPP Qualitative Research

- Field Notes
- Post-program Group Interview
- Individual Interviews
- Questionnaire
Participant Case Studies

For each we will discuss:

- Individual characteristics, background & teaching experience
- Key aspects of their process
- Self-identified significant impacts
Preliminary Results

- Most participants completed their portfolios
- Participants perspectives about teaching changed
- Participants developed a network of peers interested in teaching
- Participants with little teaching experience successfully participated
Participant Feedback Themes

Most Challenging:
- Teaching or diversity philosophy

Most helpful:
- Peer-review process & structure

Other Impacts:
- ETPP structure borrowed/transferred
- Search committee feedback, “strongest application packet ever seen”
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ETPP  http://www.engr.washington.edu/caee/sot_etpp.html
CAEE  http://www.engr.washington.edu/caee/
ETPP Design Principles

Customized for Engineers
- product oriented
- material format language, & examples

Peer-Focused
- rotating leadership
- peer-review
- sustainable

Diversity
- participants
- diversity statements