Using Self-Study To Recruit And Retain Nontraditional Learners Into STEM Careers

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STEM EQUITY PIPELINE & THE NEW LOOK PROJECT

5 Step Improvement Process
Why STEM Equity?

“In the last 50 years, more than half of America’s sustained economic growth was fueled by engineers, scientists and advanced-degree technologists.”

---The Talent Imperative, www.bestworforce.org

The National Bureau of Labor Statistics projects that our greatest needs will be in computer-related fields that propel innovation across the economy.

---The Talent Imperative, www.bestworforce.org

Twenty-five percent of our scientists and engineers will reach retirement age by 2010.


“By the year 2050 85% of the entrants into the workforce will be people of color and women”

---Sisyphus Revisited, www.cpst.org
Why STEM Equity?

“As a consequence of lack of diversity . . . We pay an opportunity cost, a cost in designs not thought of, in solutions not produced.”

--Dr. Bill Wulf, Past President, National Academy of Engineering

“If we do not engage women and minorities in the engineering enterprise, we are ignoring more than 50% of America’s intellect.”

--Bostonworks.com
The SEPP 5-Step Process

STEP 1: Document Performance Results

STEP 2: Identify Root Causes

STEP 3: Select Best Solutions

STEP 4: Pilot Test and Evaluate Solutions

STEP 5: Implement Solutions
The New Look Process (SEPP Process)

**Step 1:** Partner

**Step 2:** Self-Study (Document Performance Results)

**Step 3:** Study Research (Identify Root Causes/Select Best solutions)

**Step 4:** Set Goals

**Step 5:** Perform Activities (Pilot Test)

**Step 6:** Review & Evaluate (Evaluate Solutions)

**Step 7:** Disseminate (Implement Solutions)
Round Table Introductions

**Introductions at tables**

- **5-Second Introduction**
  - Name
  - Institution
  - Title

- **2 Sentence “What”**
  - What do you hope to learn about at this session?

**Report back to group**

- **Write # of each**
  - Administrator
  - Counselor
  - Instructor
  - ‘Other’

- **Prepare to share**
  - Top 2 “Whats” (non-duplicative)
Read
Discuss question in your group
Record results on worksheet

What performance data should they review to help them identify their problem?

(STEP 1: Document Performance Results)
STEM Case Study—Problem

- Read
- Discuss question in your group
- Record results on worksheet

What self-assessment strategies should they implement to discover the root causes for the problems they have discovered?

(STEP 2: Identify root causes)
STEM Case Study—Root Causes

Take with you for further exercise

What strategies could they implement to increase participation of females in the PLTW Program at the high school and pre-engineering program at the community college?

(STEP 3: Select best solutions)
So . . . How can YOU do this?

**National & State Resources for**

- Collecting/reviewing performance data
- Identifying root causes
- Selecting the best solutions
Resources for collecting/reviewing performance data:

- STEM Equity Pipeline Project (SEPP) Guide to Program Improvement Document
- PLTW Self-Assessment
- Data and Results from “True Outcomes” Annual Assessment
- *The New Look Online Self-Study*
Resources for self-assessment:

- **The New Look Online Self-Study***
  - Bias in Materials Checklist
  - Counselor’s Checklist
- “Root Causes” Document
- **Women and Men in Engineering (WIE) Assessment Tools**
  - Tools free online
  - Webinar on SEPP website
New Look Online

http://www.icsps.iistu.eau/projects/index_newlook.html
## New Look Online

### Current Version
- Introductory survey
- Staff surveys
- Directed questions
- Root causes research
- Effective practice research
- Goal-setting

### FY10 Version
- Partner planning
- Activity suggestion
- Assessment
- Review & evaluation
- Dissemination
- Feedback loop
Resources for selecting solutions:

- *The New Look Online Self-Study*
- ICSPS/New Look Showcase
- “Root Causes” Document
- National Girls Collaborative Project
- Nontraditional Careers Tool Kit
- SEPP Website with resources
  - 5-Step Process Training
  - National Speakers
  - Printable Resources
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Where do you fit in?