Retaining Undergraduates in Computing through Mainstreamed Interventions

February 15, 2011

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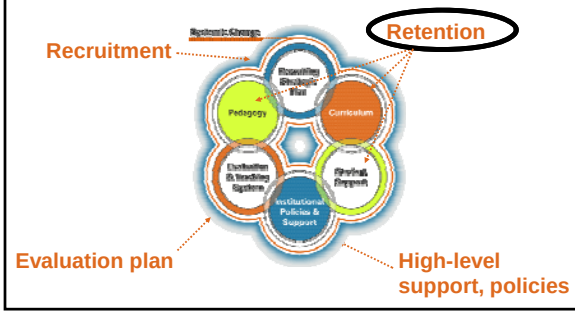
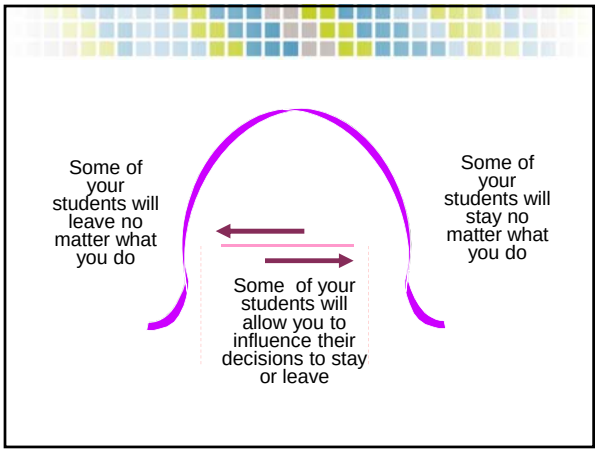
Creating a Retention Plan Using the NCWIT ES-UP Reform Model

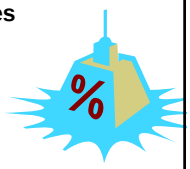




Engaged in using best practices?

Poll

What percent of the faculty in your department would you say are now *actively engaged* in intentionally using best practices to improve retention of women undergraduates in computing?



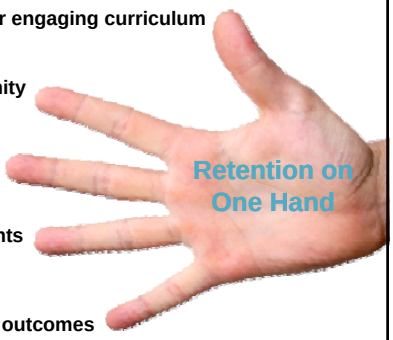
Offer engaging curriculum

Promote community

Routinely facilitate academic success

Support students

Monitor outcomes



Maintain interest through curriculum

Highlight Curricular Flexibility

Computing and ..

Highlight Relevance

- **Programming is a tool**
- **Survey students**
- **Use meaningful examples**
- **Describe how relevant to career**

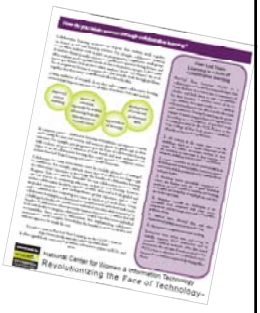
Computer science is "creating the applications, processes, and tools that allow computers to solve real world problems" not being a "code monkey"

QUESTIONS? DISCUSSION

Promote community

Use Collaborative Learning

- Small group problem solving
- Peer led team learning
- Pair programming



Collaborative Learning Improves Retention

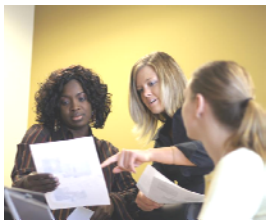
- Greater sense of academic community, belonging
- Quality interaction with profs and peers
- Higher test scores
- Student involvement
- Enthusiasm

Promote Peer Support

Avoid isolating women and minorities

Facilitate student interaction

- In-class opportunities
- Study groups
- ACM
- Women's groups
- Peer mentoring



Create A Comfortable Climate

Use inclusive language

Spotlight women for their accomplishments, not their gender

Facilitate Academic Success Routinely

Provide Feedback and Context

- Assess early and often
- Put performance in context
- Mean, standard deviation

A IIIIIIIIII
B IIIIIIIIIIIIIIIIIIII
C IIIIIIIIIIIII
D III
F II

A = 75 – 100
B = 60 – 74

Emphasize Homework

Skill building through practice

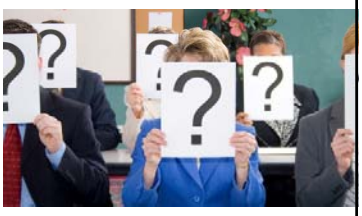
Practice

Practice

Practice

Encourage Participation in Classes

Find some truth in whatever students say
Inhibit show-offs
Promote asking questions
Create group opportunities



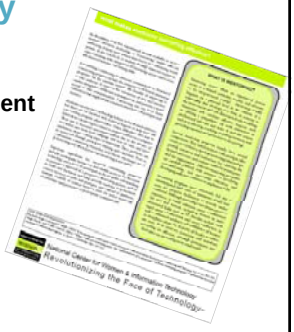
Train Teaching Assistants

Critical to student experience
- » Feedback & context
- » Practice builds skill
- » Participation
- » Encourage persistence

Support students

Mentor for Diversity

- Reach out to women
- Give honest encouragement

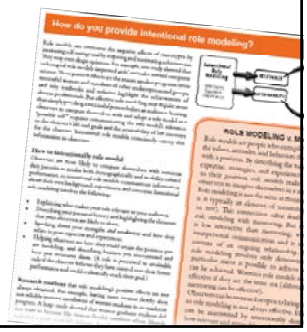


Use Intrusive Academic Advising

- Early Warning System
- Call students who miss 2-3 consecutive classes
- Below “C” on first test

Intentional Role Modeling

- **Describe your history**
  - » Challenges you faced and how you overcame them
- **Explain how they could achieve what you achieved**
- **Communicate positive aspects of your profession**



QUESTIONS?
DISCUSSION

Monitor outcomes

Collect Data to Track Results

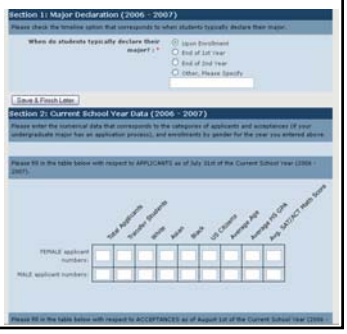
- Assess process and goal attainment
- Report results
- Revise
- Continue/Discontinue

NCWIT Student Experience of the Major (SEM) Survey

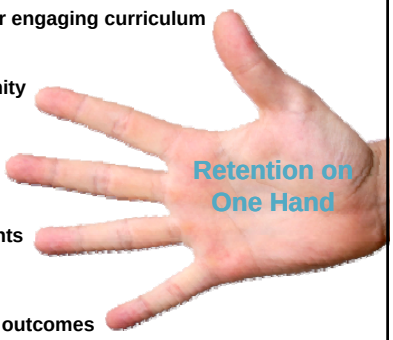
- Identify problems & strengths
- Tailored to your program's needs

Assess Retention Outcomes

- Track enrollment
- Track course outcomes
- Report results



QUESTIONS?
DISCUSSION



Currently used initiatives at your school?

Poll

Which of the initiatives *are currently used* in your school?

Possible initiatives at your school?

****Poll****

Which of the initiatives *could be implemented* in your school?

Next steps

Use the NCWIT Tracking Tool

Join NCWIT Academic Alliance [academic@ncwit.org]

Adopt NCWIT Practices

Get NCWIT Extension Services help with your strategic planning for recruitment & retention

Next Steps: Attend the NCWIT Summit in NYC

SAVE THE DATE: May 23-25, 2011 - New York City!

- **Learn from noted experts and voices in the fields of computing, innovation, and diversity**
- **Share perspectives with other practitioners**
- **Celebrate the achievements of girls and women in IT.**
- **See our exciting line up of speakers and learn more: www.ncwit.org/summit**

QUESTIONS?
DISCUSSION