



Revolutionizing the Face  
of Technology



# Strategically Recruiting Women Students

**Dr. Beth Quinn**

Director of Extension Services for Undergraduate Programs, NCWIT

**Ms. Emmy Soyka**

Extension Services Program Manager, NCWIT

NCWIT Lifetime Partner:



NCWIT Strategic Partners:



NCWIT Investment Partners:



# NCWIT Extension Services Transformation Award Grand Prize Recipient



## NEXT Award Commendation

*“ . . . At the start of their work with NCWIT, [UW Computer Science] set a goal of reaching 30% women in their major; they have exceeded this goal with women making up 32% of their majors. The 2013 graduating class was almost 29% women, up from just 18% in 2008. This is almost twice the national average for computer science programs. These accomplishments are the result of strategic, well-planned recruiting and retention efforts.”*



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## Joined by:

**Ms. Crystal Eney**

University of Washington – NEXT Award Grand Prize 2015

**Dr. Rebecca Dohrman**

Current Extension Services Consultant to the University of Washington

**ncwit.org**



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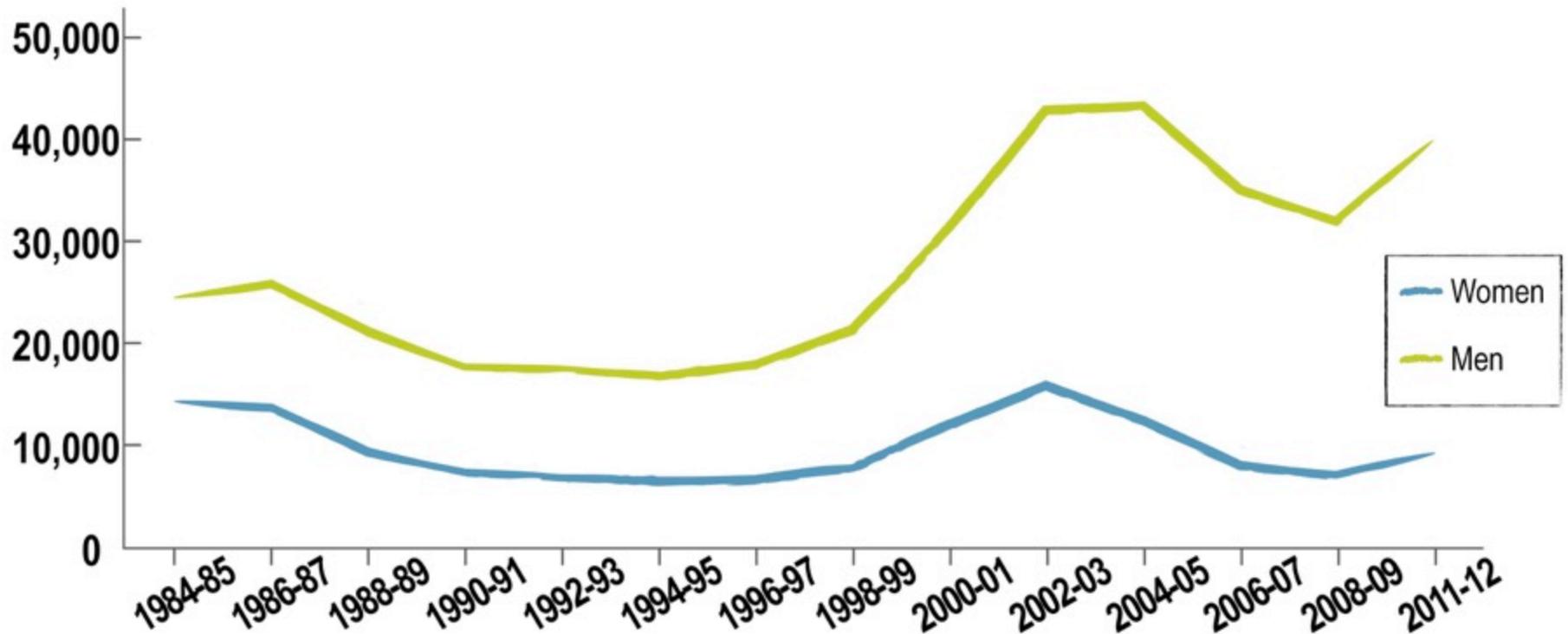
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# Why Does Recruiting Matter?

BACHELOR'S DEGREES IN COMPUTER AND INFORMATION SCIENCES, BY GENDER:  
A LONGITUDINAL LOOK



© NCWIT. Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System.

[ncwit.org/scorecard](http://ncwit.org/scorecard)

# Strategic Planning Helps You...



Create a shared vision

Identify specific, achievable goals

Choose interventions and activities coordinated to reinforce one another

Choose the right metrics to carefully track what works and what doesn't

# The Process of Recruiting Strategically



# Keep in Mind

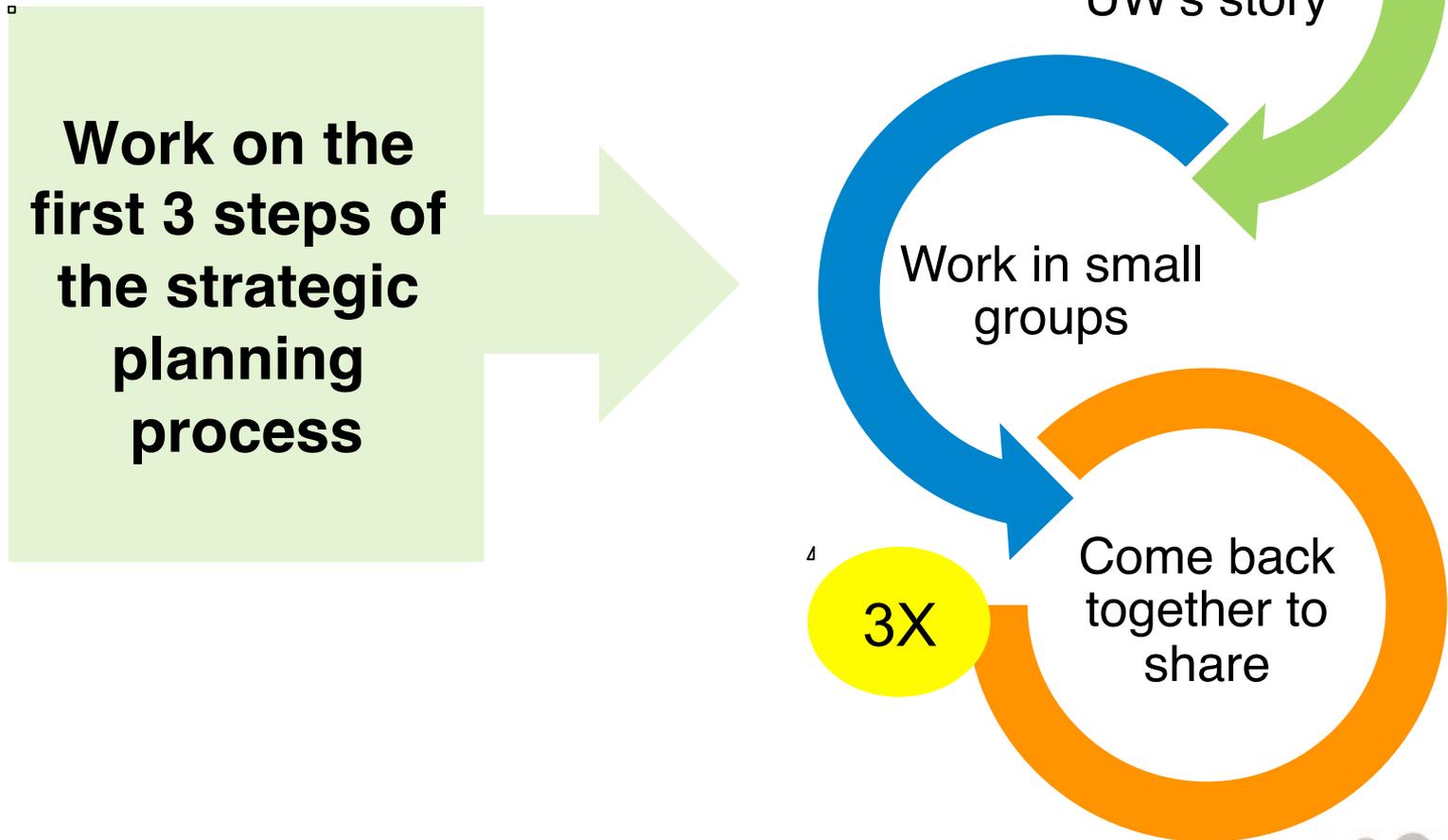
## NCWIT Approach to Recruiting

**Greatest return on investment**

**Shortest time to bring benefits**

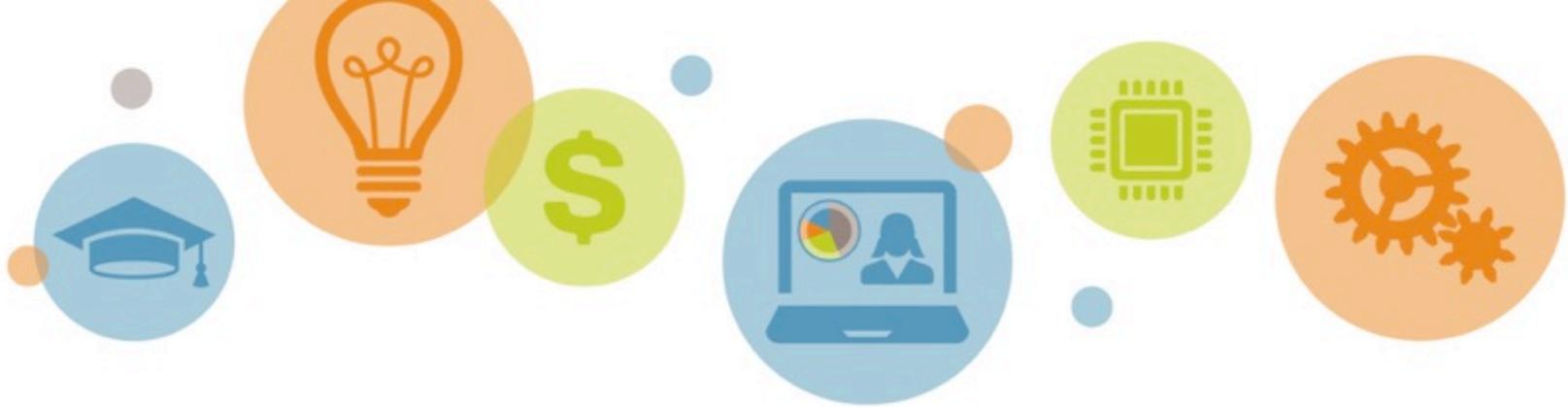
**Smallest resource commitment**

# Overview of the Workshop





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# Step 1: Identify and Locate Target Audiences

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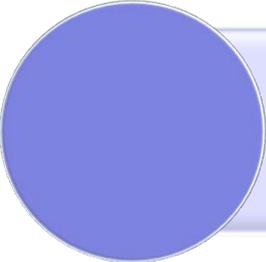


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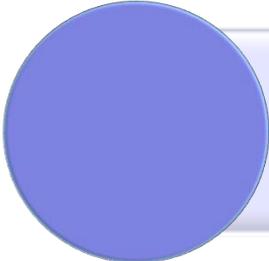
# Where Can We Recruit?



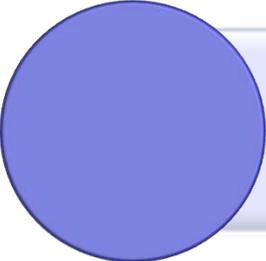
# Identify “Low-Hanging Fruit”: Internal Recruiting



What are the largest majors or academic groups of students on your campus?



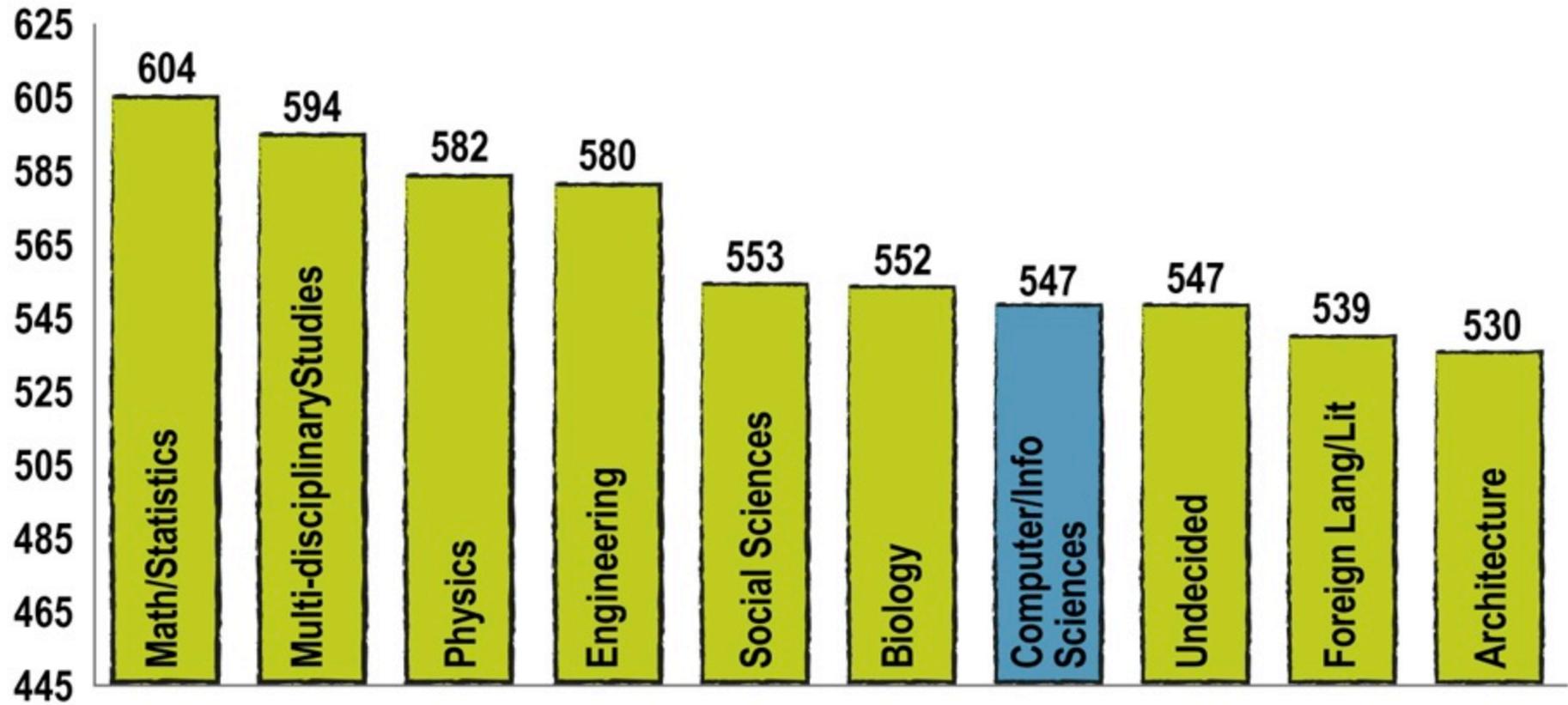
Where are the women on campus with math and science interests?



What groups on campus do you already have connections with?

# Many Students Have Math Competence

TOP 10 AVERAGE SAT MATH SCORES BY INTENDED MAJOR, 2013





## Basics:

- Large R1 Institution
- Freshman admitted as pre-majors, then apply to major
- Programming 1&2: 5000+ students a year

## Focus our energy on these students:

- 35% women in intro 1
- Special seminar for women interested in CS
- Tea and cookie invitational for high achieving women
- Direct emails from faculty/advisors to high achievers
- Strong Ugrad TA role models
  - (45% women in intro)



# External Recruiting

Which community colleges typically feed into your university?

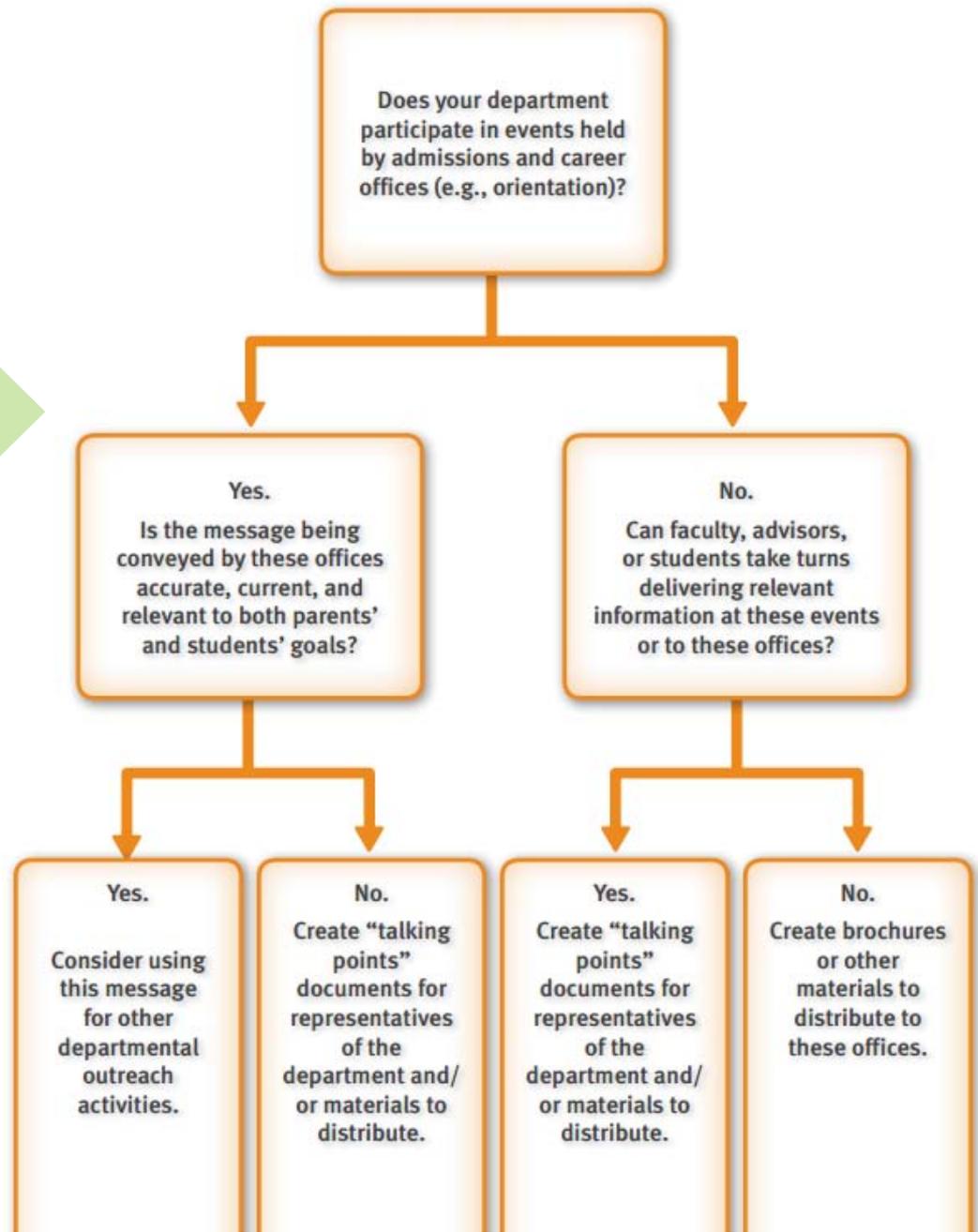
Which high schools typically feed into your university? [Feeder School]

Who influences these students' decisions? [Influencers]

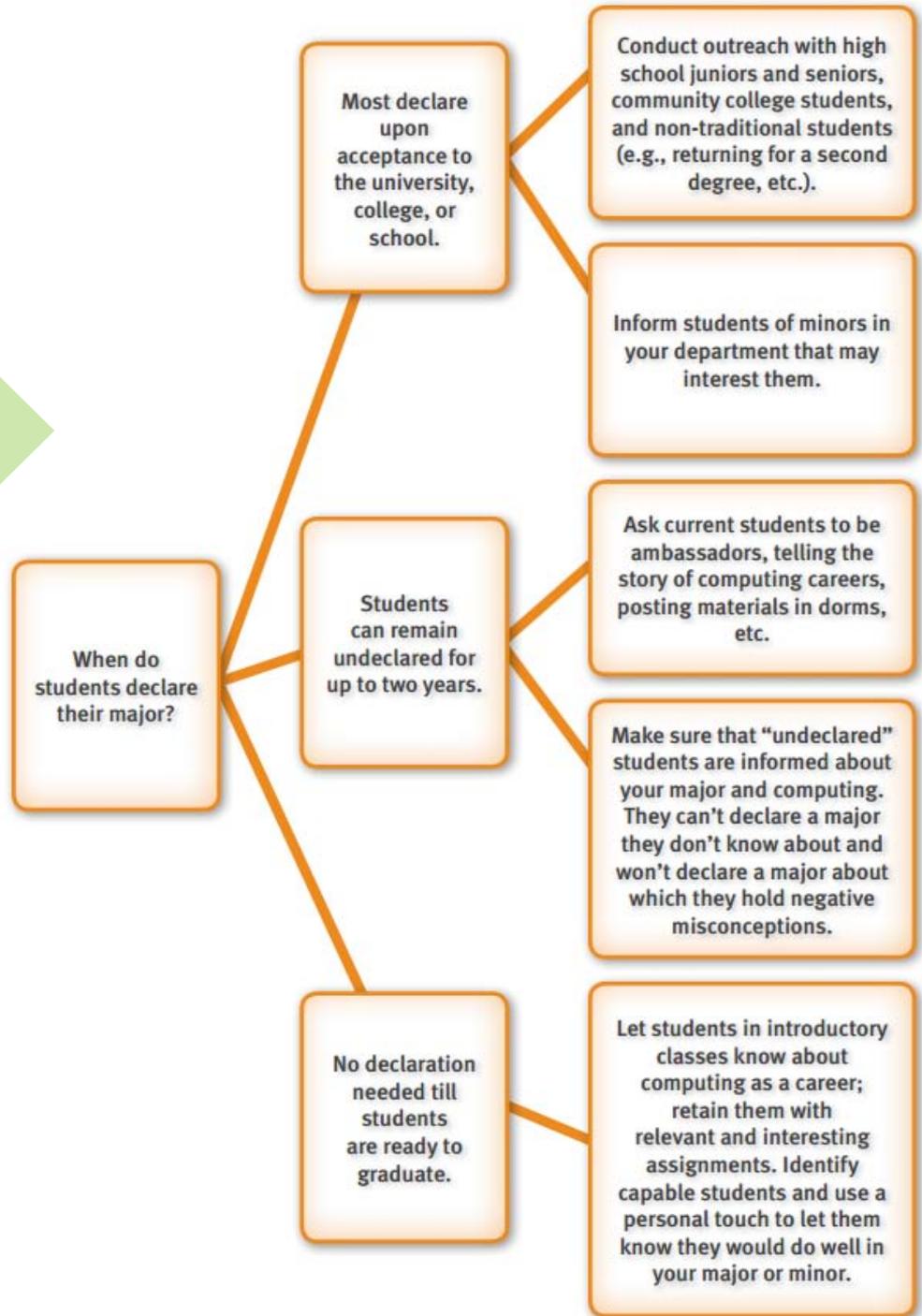
- State of WA Initiative 200 bars us from using race, gender, ethnicity in admission decisions
- What IS legal is heavily recruiting from students you have previous experience with i.e. summer camps, open house, NCWIT aspirations regional awardees, sending our current students out to local schools, working with local teachers



Recruitment  
Workbook,  
P. 6



Recruitment  
Workbook,  
P. 7





# Your Turn

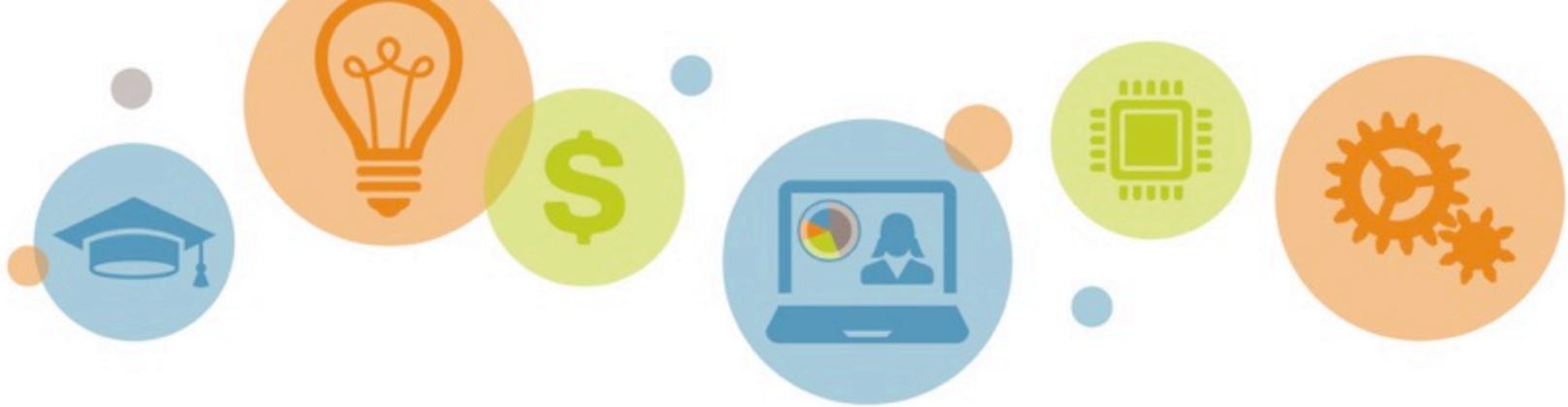
- Work in pairs or groups of three**
- Brainstorm with your partner(s) where you might find prospective students**
  - in your campus/organization (internal recruiting)
  - and beyond (external recruiting).
- For ideas, see pp. 6-9 in the Recruiting Workbook.**

# What did you learn?





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# Step 2: Leverage Existing Resources

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# Leverage Your Existing Assets

REMEMBER: You don't have to do this all yourself.



# Courses are Recruiting Opportunities

- Intro courses in your major
- Intro courses in allied fields (e.g. Engineering)
- Computer literacy courses
- Service courses (e.g., technical literacy)
- Summer programs



Engage with the University admissions process, show up when they are registering for courses

- We have luxury of advisors at every orientation

Train and maintain relationships with K-12 teachers

- Teacher's Banquet: pricey, but valuable (big school)
- CS4HS workshop: Training for teachers (Small school)
- Cultivate those teacher relationships

# Leverage Points Checklists

University Resources	How They Help
<input type="checkbox"/> Admissions Office	<ul style="list-style-type: none"> <li>Identify and communicate with potential applicants</li> <li>Share information with computing department</li> </ul>
<input type="checkbox"/> Communications/Press Office	<ul style="list-style-type: none"> <li>Provide information about recruitment efforts across the institution</li> <li>Connect media with computer science (CS) department</li> </ul>
<input type="checkbox"/> Community Relations Office	<ul style="list-style-type: none"> <li>Connect department with local businesses and communities for special events and partnerships</li> </ul>
<input type="checkbox"/> School of Education/Teacher's College	<ul style="list-style-type: none"> <li>Train future teachers</li> <li>Conduct educational research</li> <li>Establish and maintain contact with area school districts</li> <li>Design and direct after-school and summer enrichment programs for K-12 students</li> </ul>
<input type="checkbox"/> University Career Services	<ul style="list-style-type: none"> <li>Provide career counseling to undeclared majors</li> <li>Introduce suitable candidates to CS</li> </ul>
<input type="checkbox"/> Schools/Faculty of STEM Disciplines	<ul style="list-style-type: none"> <li>Provide alternative career options and guidance</li> <li>Introduce suitable candidates to CS</li> </ul>
<input type="checkbox"/> Computer Science Department Faculty and Courses	<ul style="list-style-type: none"> <li>Recruit undeclared majors from intro, applications, and service courses</li> </ul>

Student Groups & Services	How They Help
<input type="checkbox"/> Student Volunteer	<ul style="list-style-type: none"> <li>Provide service to area K-12 schools and community</li> </ul>

# NCWIT RESOURCES- Academic

**Communicating for Change**  
Persuade Colleagues to Get on Board

National Center for Women & Information Technology  
**PROMISING PRACTICES**

**Faculty Perspectives: Case Study to Learning About Faculty Research Experiences**

**WHAT DO FACULTY LIKE ABOUT RESEARCH EXPERIENCES FOR UNDERGRADUATES?**

**Case Study: Virginia Tech University**

**Case Study: Oregon State University**

**Why does he continue to do it?**

**How does he work with undergrads?**

**How does she work with undergrads?**

## talking points



National Center for Women & Information Technology  
**PROMISING PRACTICES**

**Small Steps Toward Systemic Change (Case Study I)**

**Case Study: Carnegie Mellon University**

**Case Study: The University of California at Santa Cruz**



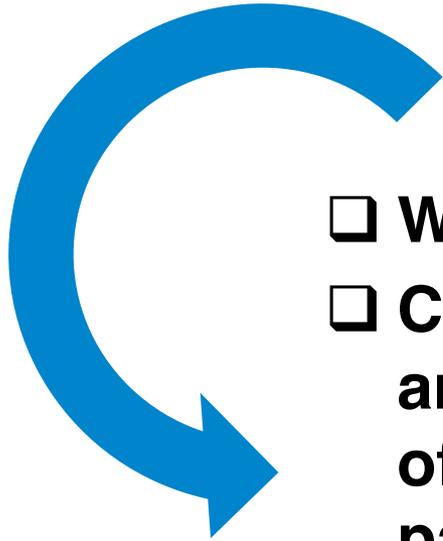
- NCWIT Extension Services for Undergraduate Programs** supports undergraduate computing departments in their efforts to improve their programs and create diversity. They are key in providing targeted and tailored service supports while implementing a single effective practice by providing information and consultation, helping to build and implement an evaluation plan, leveraging a variety of faculty, etc. Full services include course redesign, creating departmental conditions conducive to systemic change. Use:
- Develop course conditions and compare them with other institutions
  - Inform faculty of opportunities and methods for increasing gender diversity
  - Build high-level university support for your initiative
  - Assist with developing a comprehensive diversity plan and support its implementation
  - Guide evaluation
  - Participate in dissemination of your successful practices and taking your story

NCWIT offers practice for teaching and learning that gender diversity. It is a 4-10 undergraduate, graduate, and career level. The only one that is not a research-based practice. For more information, visit [www.ncwit.org](http://www.ncwit.org).

**ncwit.org** Authors: J. Michael Collins and Lisa Brice  
©2012  
NCWIT Extension Services: Robert H. Moore, David H. Moore, Alan M. Moore, and Bob A. Moore



# Your Turn



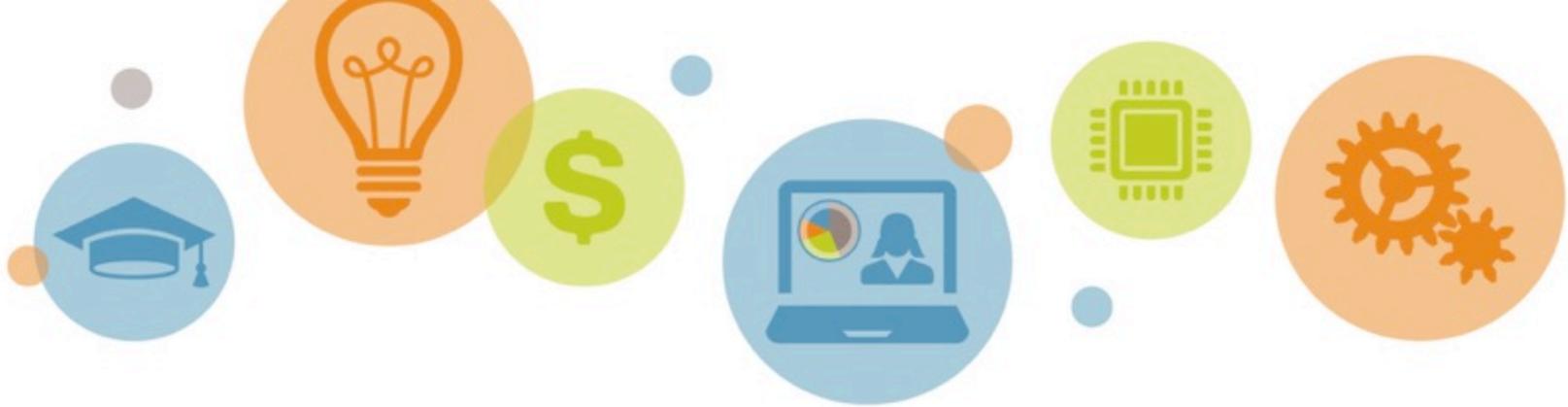
- Work in pairs or groups of three**
- Consider existing groups, events, and organizations inside and outside of your organization. How could you partner with, educate, or leverage what they are already doing?**
- For ideas, see pp. 12-13 in the Recruiting Workbook.**

# What did you learn?





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# Step 3: Crafting and Assessing Messages

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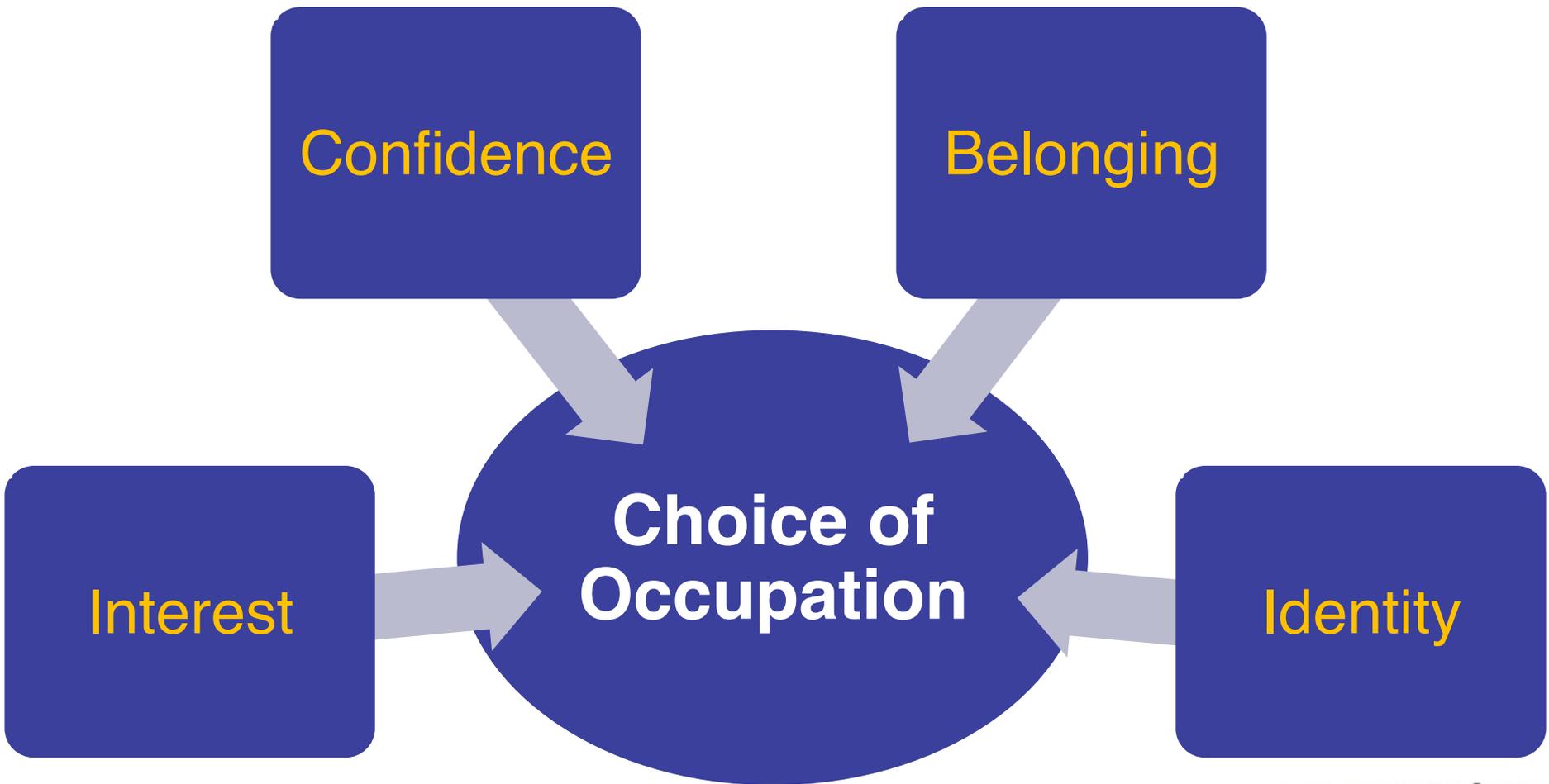
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# Your Message

- What is the impression that people get about your department/school/organization?
- What message does your website portray? What is there and what is not there?
- How is the admissions department or the counseling staff talking about your department?
- What publicity materials do you use?

# How to Craft Messages

## Capitalize on how we choose our occupations



# Cautions in messaging



- ❑ Beware of communicating or reinforcing stereotypes
- ❑ Avoid comparisons between girls v. boys, men v. women
- ❑ Avoid using *only* using references & images that appeal to a narrow band of students (creating in-group/out-group)
- ❑ Do not perpetuate stereotypes by repeating them
- ❑ Refrain from implying only geniuses succeed

# Craft Messages to Appeal to Present Goals: **Sell Your Field**

- ✓ **Jobs are Plenty**
- ✓ **Salaries are High**
- ✓ **Jobs are Satisfying**
- ✓ **Computing is Relevant Everywhere**
- ✓ **Jobs Enhance Creativity & Human Potential**



Make sure you're marketing yourself well

- Alumni profiles online of your all-stars
- Bring students to you: student tour guides
- If you can't send students: share videos

In all your information sessions, online

- Talk about great jobs, graphs of salary
- Success stories of your OWN students
- Search social media for your school, what are they saying on 'college confidential'



# NCWIT RESOURCES- K12

**COMPUTING: GET THE MOST OUT OF YOUR COLLEGE DEGREE**

National Center for Women & Information Technology  
**PROMISING PRACTICES**

Better Approaches to Well-Intentioned, but Harmful Messages (Case Study 1)  
Empowering Students Threat to Improve Retention

K-12 Education Undergraduate Graduate

**Approaches with Anticipatory Student Demerits**  
**BEST PRACTICES**  
Students often approach education as a search for their relevant needs, rather than development of new abilities. Because they believe that intelligence is unchanging, they tend to seek students in their challenging subjects either based on their abilities or stereotypes. A counter-intervention designed to shift out of this practice was studied by Good et al. (2015). The intervention had four steps:

1. College students received research-grades and insight from that intelligence can be increased.
2. Mentors attributed any learning difficulties to the relative amount of students' intelligence.
3. Mentors gave the research-grades access to information about how the brain forms new connections over time.
4. The middle school students communicated what they had learned about the malleability of intelligence to others.

Results of this experimental intervention included improved test performance and no gender gap in test performance. Other observations produced similar results when students were encouraged to believe that intelligence increases through practice and effort. And some experiments showed that it can be difficult to take enough steps to test students that the best they were about to face. In addition, show gender differences in outcomes.

**TRUE ATTRIBUTIVE THREATS FROM COMPUTING EDUCATION — AND RECOMMENDATIONS FOR ADDRESSING THEM**  
Calling attention to women's underrepresentation in computing can cause identification threat, even when it is well-intended. These five stories describe problems and suggest solutions.

Best Practice	Problem & Solution
During orientation to new computer introductory topics, a course also can contribute to computing because the culture is a computer-oriented field where the female gender composition of the cohort who are the top range is not great if only the students are otherwise in a similar situation. Then the course can approach to a positive experience, one measure is to give the girls. This can be done to begin to compare women's level within the course to see whether the top range is not the same.	<b>Build Community</b> The instructor might stress how important it is to students, and students to each other, perhaps drawing shared values to seeing that why they chose the major, helping understand in the way that might bring community and persistence of work.
An instructor who does not have a strong female presence in the top range of the class, the instructor might stress how important it is to students, and students to each other, perhaps drawing shared values to seeing that why they chose the major, helping understand in the way that might bring community and persistence of work.	<b>Provide Mentoring Support</b> The instructor might stress how important it is to students, and students to each other, perhaps drawing shared values to seeing that why they chose the major, helping understand in the way that might bring community and persistence of work.

**TOP 10 WAYS**  
OF RECRUITING HIGH SCHOOL WOMEN INTO YOUR COMPUTING CLASSES

**C4C**  
counselors for computing

Professionals Development  
Emerging Careers

Counselors for Computing (C4C) brings school counselors the information and resources they need to guide students toward fun and rewarding jobs in computing and IT.

Join us now — [www.ncwit.org/c4c](http://www.ncwit.org/c4c)  
See resource guide of this card for resources you can use.

C4C is a product of the NCWIT @ Google partnership with the National Company Foundation and Google.

**ncwit.org** National Center for Women & Information Technology | 2020  
www.ncwit.org | info@ncwit.org | 800.732.5271

# Your Turn



- **Talk with your table**
- **Consider how your department/school/organization is representing itself and the field in its existing messages?**
- **Brainstorm appealing messages for your previously identified audiences.**
  - *If you don't know, how might you find out?*
- **What are some immediate changes that you could make?**
  - Need ideas? See pp. 14-15 in workbook

# What did you learn?





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# Wait! Assess your Initiatives: How do you know it's working?

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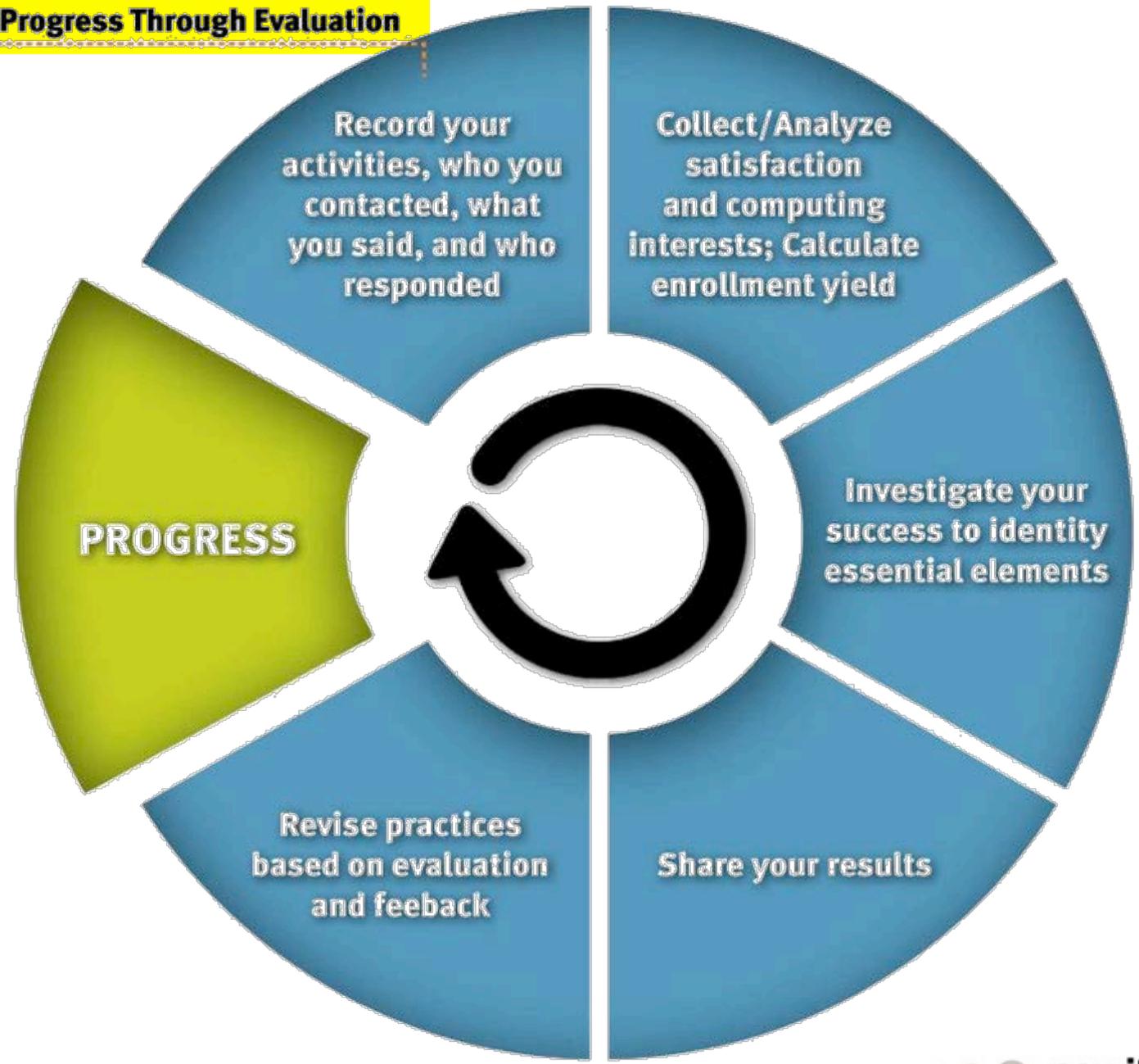


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## Progress Through Evaluation



- Evaluation is the hard – but also most important
- Evaluate every event so you know what is working
  - Keep a feedback log on every event so you remember what worked well and what didn't

### We evaluate:

- Summer camps
- CS4HS
- Student body experience as a whole (how did they learn more about our program)

### Keep statistics:

- Know where you are trending
- Figure out what is working best: then do more of that

# More food for thought

## How to keep them? (RETENTION)



4



*learn more at the next session!*

# What's next?

- Visit [www.ncwit.org/ncwit2go](http://www.ncwit.org/ncwit2go) for easy to use resource collections designed to help you achieve your goals.





# Pick a 2<sup>nd</sup> round Empower Hour to learn something new!



Aspirations in Computing

Aspirations in Computing is a sweeping national talent development initiative for young women in computing and information technology from kindergarten through graduate school.



Pacesetters

Pacesetters is a unique fast-track program where company and university leaders work together to increase their organization's number of technical women.



Extension Services Client Showcase

Extension Services provides customized consultation to computing and engineering undergraduate departments to help them develop high-impact strategies for recruiting and retaining more women students.



EngageCSEdu

EngageCSEdu is a collection of CS1 and CS2 materials that support the retention of women and other underrepresented groups in undergraduate computing education.



Sit With Me

Sit With Me invites you to validate and recognize the important role women play in creating future technology.



Male Advocacy

Learn more about the importance of male advocacy and the most effective ways men can advocate for more inclusive organizational cultures. This session is focused on industry but others are welcome to attend!!



Tapestry and C4C

Tapestry workshops prepare high school computer science teachers to attract and retain more—and more diverse—students to computing. C4C equips school counselors with information and resources they can use to guide toward education and careers in computing.



Latinas in Technology

Latinas in Technology is a campaign that brings together policy makers and leaders from education and industry to encourage Latinas and their families to consider careers in technology.