

ADVISING & SUPERVISING STUDENTS

Margaret Burnett
Oregon State University

2015



CRA-W

Computing Research Association
Women

GROWING YOUR RESEARCH STUDENTS



CRA-W

Computing Research Association
Women

The Faculty Job & Your Students

- Woo hoo, you got a faculty job!
- **Tip #1:** Now you need research students.
 - **Tip #2:** And you need to start them growing.
- My path:
 - Taught a grad class on my topic.
 - Started reading group for credit
 - ➔ survey paper.
 - REUs too.
 - Recruited from the class/group.
- Action? (how many past this stage?)



CRA-W

Computing Research Association
Women

Action plan: Get/grow (5 minutes)

- Pair up, make your plan on:
 - Grow: What you're going to TEACH next to grow them
 - OR
 - Get: From where you'll RECRUIT your next grad/REU.
- Reminders from “My path”:
 - Taught a grad class on my topic.
 - Started reading group for credit → survey paper.
 - Recruited from the class/group.

Research Students' Productivity (REUs & Grad students)

- **Tip #3:** Pay them!
 - \$ or credits.
 - That way, they owe you, and must progress.
- **Tip #4:** They work for you.
 - Agenda, and assign from it.
- **Tip #5:** Pair them up!
 - Co-author, pair-program, etc.
 - They'll learn more, stay more on track, sap less of your energy.



CRA-W

Computing Research Association
Women

Action plan: Pay/assign/pair (10 min.)

- Talk about:
 - Pay: What are you going to pay them with?
 - OR
 - Agenda/projects: What are you going to assign next to manage your number of “threads”?
 - OR
 - Pair: How can you pair them to make your students better and your life more sane?

Research Students' Productivity (REUs & Grad students)

- **Tip #6:** Transparency of expectations & progress.
 - How much/where will they work for you?
 - What [papers](#) will they co-author this year?
 - On what schedule? (They create it.)
 - Regularly: are they progressing on that schedule?
 - If not, how are they going to fix it?
 - Regularly: Are the other students on schedule?
- Help them with obstacles, but...
 - **Tip #7:** Cull the duds from your group!



CRA-W

Computing Research Association
Women

COMMUNICATIONS TO STRETCH YOUR STUDENTS



CRA-W

Computing Research Association
Women

Communications

(REUs, Grad students, Class students)

- **Tip #8:** To the “dud”:
 - “How do you think it’s going?”
- Exercise (5 min.):
 - practice culling a dud.



CRA-W

Computing Research Association
Women

Communications

(REUs, Grad students, Class students)

- **Tip #9:** When discouraged:
 - “The brain is a muscle.” (with specific guidance)
 - “I’m stretching you.”
 - “This takes a long time. It took <x> forever to get here.”
 - “If you already knew how to do this stuff, why would you need me/school?”
- Practice (3 min.)

Communications

(REUs, Grad students, Class students)

- **Tip #10:** To the undiscovered great student:
 - “Have you ever considered grad school?”



CRA-W

Computing Research Association
Women

RESEARCH UNDERGRADS



CRA-W

Computing Research Association
Women

Tip #11: Get REU-in-a-box

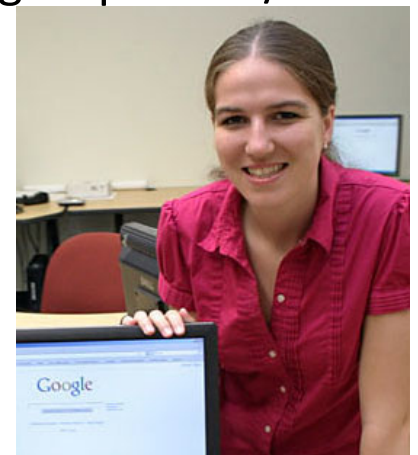
www.ncwit.org/reubox

- Research Experience with Undergraduates.
- An In-a-box is a “kit”.
- This In-a-box supports:
 - Hands-on.
 - One-on-one research experience.
 - Guided by a faculty member.
 - With just the faculty member
 - Or in a small team (faculty member, graduate students, one or two REUs).



Section 1.3 Why important: To students and to CS/IT?

- Engagement:
 - Hands-on research engages students in their undergrad degree.
- “Trying it on”:
 - Helps students consider grad degrees & research.
 - Want the best students to consider all their options.
- Personal:
 - Helps *retain* and *recruit* women and underrepresented groups in CS/IT.
- Help with CS/IT diversity



“My research experience is the reason I’m here today.”



Section 1.4 Why should you? (Yes, even pre-tenure!)

- Productivity:
 - Get work done on your research agenda.
- Relationships with:
 - Tomorrow's top researchers.
 - Pretrained grad students.
- Grant money!
 - NSF “broader impacts” points for your grants.
 - Financial support is available for REUs.

Section 2: Before the REU

Who will fund?

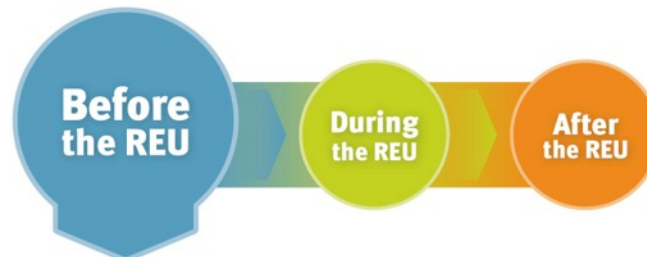
How much time?

What will we do?

How to find students?

Managing expectations?

See Section 2 of REU-In-A-Box!



Section 2.5-2.6, 6.3:

Managing Expectations

Faculty:

Explain what research is.

Select a 'right-sized' project.

COMMUNICATE expectations early!

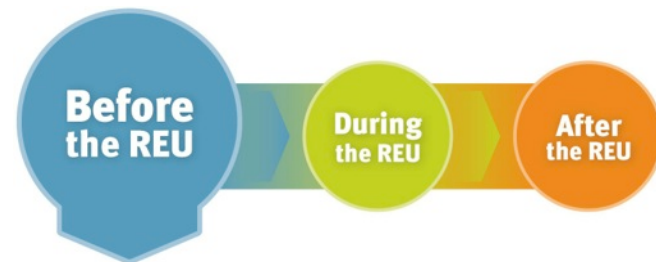
Plan how you want to structure the project.

Students:

With a research mentor whose interests match yours.

Research not as clearly defined as classroom problems.

SPEAK UP! If you don't understand something, bring it up and discuss.



Section 3: During the REU

- Team building -
 - communication
 - accountability
 - group and professional skills
- Management challenges



See Section 3 of REU-In-A-Box!



Section 4: After the REU

- Post-REU self- assessment (student).
- Post-REU self-assessment (faculty).
- Leveraging the REU: next steps.



Sections 4.1, 6.8:

Students Leveraging the REU

- Update their resumes!
 - REU experiences look great!
- Coauthor a paper or poster on their research.
 - eg, at a conference.
- They're in a good position to apply for:
 - travel scholarships to conferences.
 - undergrad (or grad) scholarships/fellowships.
 - paid research opportunities at other locations.
- Think about grad schools.



Help Your Students Soar!

- Students + professor = team!
- When one looks good, all look better!
- How:
 - Nominate for an award.
 - Place them in great internships
 - align with their career goals.
 - Make them try for opportunities.
- Make them be the best they can be.



CRA-W

Computing Research Association
Women