

Promotion to the Next Level (Education)

Tiffany Barnes

North Carolina State University

Mark Moss

Georgia Institute of Technology



CRA-WP

Computing Research Association
Widening Participation

School of Computing Instruction

- ~17 Lecture-track; 3 Tenure-track Adjunct; 1 Academic Professional
- We cover half of CS UG course credits
- Teach all GT Undergraduate students (Computing Requirement)
- Capstone Program (Junior Design, CS sections of CREATE-X Capstone and I2P)
- Multiple graduate courses (in-person and OMSCS)



CRA-WP

Computing Research Association
Widening Participation

Exploding Computing Enrollments



Combined enrollments in Georgia Tech's undergraduate computing programs (CS, CM, CmpE) from Fall semesters 2014-2023

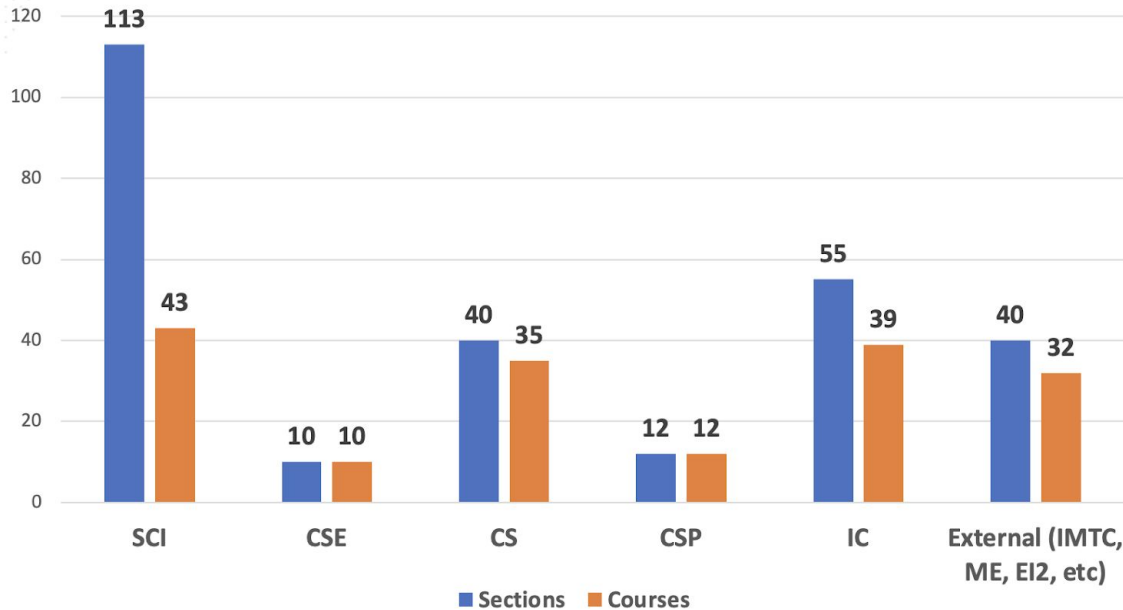


CRA-WP

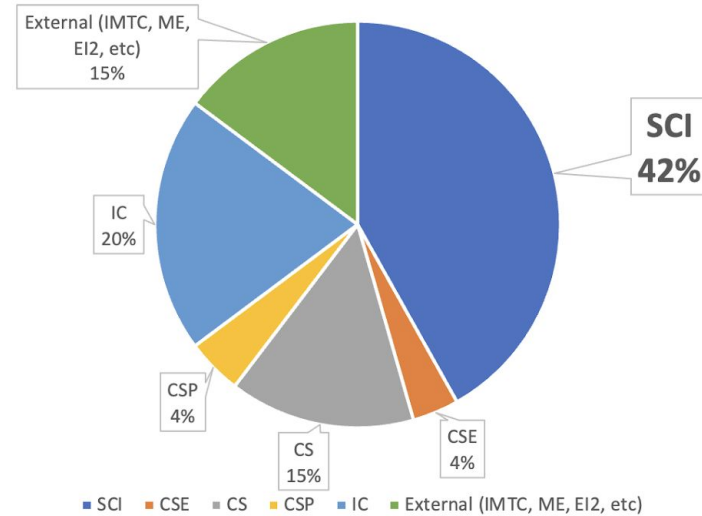
Computing Research Association
Widening Participation

Teaching

Courses and Sections Counted by School of Instructor in 2022-23 (Fall & Spring)



Sections Counted by School of Instructor in 2022-23 (Fall & Spring)



SCI teaches the most sections and largest number of CoC courses



CRA-WP

Computing Research Association
Widening Participation

Pedagogical maturity and leadership

- Scope
- Excellence
- Curriculum development

Research maturity

- Intellectual impact
- Research with students

Leadership and service

- Service to the department and college
- Community leadership

Promotion Package at Teaching-Focused Institutions



CRA-WP

Computing Research Association
Widening Participation

Promotion at NC State, a Research-Focused univ.

Teaching

- Excellence, continual improvement
- Novel curriculum development

+X What makes you stand out?

- E.g. Course / capstone coordination, ABET, tech for teaching

Service to students / outreach / dept

- Undergraduate research, student organization advising, summer camps, K12 outreach

Leadership and service

- Dept/college/univ or national leadership



CRA-WP

Computing Research Association
Widening Participation

Expectations

- Learn the expectations for advancement at your institution.
- What is the expected balance between teaching, research, service, and leadership.



CRA-WP

Computing Research Association
Widening Participation

Advancement

- Assistant to Associate with Tenure (in 5-7 years)
 - Typical - Developing quality teaching and mentoring, some level of research, little service
- Associate to Full (anytime)
 - Typical - Quality teaching and mentoring, continuing research, significant service and leadership



CRA-WP

Computing Research Association
Widening Participation

Research

- Personal Research
- Research with students
- Research Funding
- Publication



CRA-WP

Computing Research Association
Widening Participation

Personal Research

- Have a research program
 - Maintain a portfolio of your work
- Move on from your dissertation topic
- Collaborate with others with similar interests
- Summers can be devoted to research and funding is possible
- Research can be on your teaching!



CRA-WP

Computing Research Association
Widening Participation

Research with Students

- Supervising senior research projects is common practice.
 - Individual projects
 - Group projects
- Student mentoring advice
 - Fit the project to the student
 - Find out the students interests and skills, then find a project that suits them



CRA-WP

Computing Research Association
Widening Participation

Research Funding

- Internal funding
 - Colleges often have funds for research, Univ level!
- External funding
 - National Science Foundation - [CRII](#), [CISE](#), [DUE](#), [EAGER](#)
 - Small grants (\$5K) - [SIGCSE](#), [Teach Access](#)
 - Industry awards - [Google](#), [Microsoft](#)
 - Undergrad research: CRA DREU, NSF REU



CRA-WP

Computing Research Association
Widening Participation

Publication

- What are the expectations for advancement
 - Conferences vs. journals
 - What level of conferences or journals
 - What about books
 - What about practice pieces
- What about artifacts
 - Tools and Apps
- Some common venues for education work
 - SIGCSE, ICER, ITiCSE, CompEd, CCSC



CRA-WP

Computing Research Association
Widening Participation

Teaching

- Become a master teacher
 - CS is constantly changing; Help other faculty improve
- Pedagogy
 - Regular improvement
 - Teaching the same thing all the time can become stale
- Course development
 - Learn new areas by teaching them, keep curriculum fresh
- Seminars
 - Learn together



CRA-WP

Computing Research Association
Widening Participation

Service

The reality

- You will be asked to serve, and serve much more, after tenure.
- You will be asked to not only serve, but lead (chair committees, department, PC, ...).
- You are expected to demonstrate leadership.

The questions

- Do I have to do them all?
- How much effort do I *have to* put in service?



CRA-WP

Computing Research Association
Widening Participation

What service?

Local service

- Lead committees within the department
- Mentoring students, junior faculty members, student organizations
- Chair the department

College/University service

- Lead/participate in campus level committees
- Lead/participate in key initiatives
- Connect with national programs

Community service

- Organize conferences, chair program committees, edit/review for journals, ...
- Review grants, judge for scholarship, awards, ...
- Mentoring students/faculty outside your home institution
- Volunteer for important causes
- ...



CRA-WP

Computing Research Association
Widening Participation

Leadership

Why?

- Explore large collaborations
- Lead local units, committees, professional organizations

Leadership is a skill

- We are trained computer scientists
- Leadership skills need/should/can be learned
 - Learn on the job
 - Get trained
 - Find a mentor on leadership skills



CRA-WP

Computing Research Association
Widening Participation

Beyond research/teaching/service

You are a well-rounded package

- Keep developing your portfolio and resume
- Continuous learning
- Work-life balance

Your environment and network matters

- Understand the expectation and culture of your institution
- Collegiality and networks



CRA-WP

Computing Research Association
Widening Participation

Understand your institution

Collect information

- Read *carefully* the promotion criteria of your department and institution
- Observe how key issues are framed and discussed at all levels
- Ask for input from senior members
-

Questions you should ask

- Is there a tradition on the number of years between tenure and promotion?
- What does the dossier consist?
- Does the institution expect outstanding in some areas and good in others? Or a more balanced case?
- Do I need to secure a (or additional) research grants?
- What's the deal breaker?
-



CRA-WP

Computing Research Association
Widening Participation

Network, network, network

It takes a community to help you succeed and reach your full potential

- It is both WHAT you do and know and WHO you know.
- Look for mentors, collaborators, and **sponsors**

Networking □ **enhance the WHAT and WHO**

- Building and publicizing your brand/reputation
- Becoming aware of new opportunities
- Identifying collaborators
- Learning about new ideas and approaches
- Getting invited to program committees, review panels, keynotes, journal editorship, etc.



CRA-WP

Computing Research Association
Widening Participation

Portfolio Development

Examine your resume every few months

- Add new accomplishments
- Reorganize as needed
 - Identify and summarize new research areas
 - Separate leadership positions from employment
 - Separate keynotes from invited talks
- Ask
 - Is there any area I want to strengthen?
 - Is there a new section I want to add?



CRA-WP

Computing Research Association
Widening Participation

Work-life balance

I will do when I get my tenure

- Tenure sets you up for more responsibilities
- Tenure gives you freedom

Self reflection

- Is my life in balance?
- What are the most important things for me?
- What gives me joy?
- What are the stressors?
-

Some thoughts

- Time management
- Trade-offs
- Boost self-confidence
- Make time for yourself

Say **NO** to and say it firmly.

Say **YES** to what you are passionate about and **DELIVER!**



CRA-WP

Computing Research Association
Widening Participation

To move or not to move

Why you want to stay?

- Familiar environment
- Established networks
- Family stability
-

Why you want to move?

- Pursue a better fit and opportunity
- New environment, new networks
- Family reason
-

When is the good time?

- Whatever is right for you (and your family)

Some thoughts

- Don't immediately say yes or no to opportunities, think, evaluate, try,...
- Ask for advice
- Work with your family
- Negotiate
- Adjust



CRA-WP

Computing Research Association
Widening Participation

It is a journey

Caree

Life is a journey

- ... not a destination.
- ... that must be traveled no matter how bad the roads and accommodations.
- ... with problems to solve and lessons to learn, but most of all,
 - experiences to enjoy.
- ... travel it well



CRA-WP

Computing Research Association
Widening Participation

Thanks.
Questions, please.



CRA-WP

Computing Research Association
Widening Participation