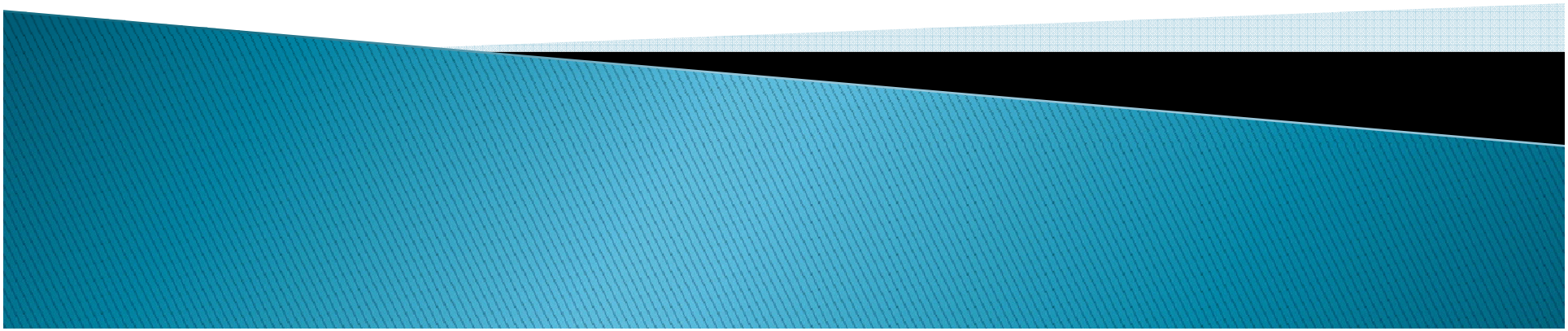
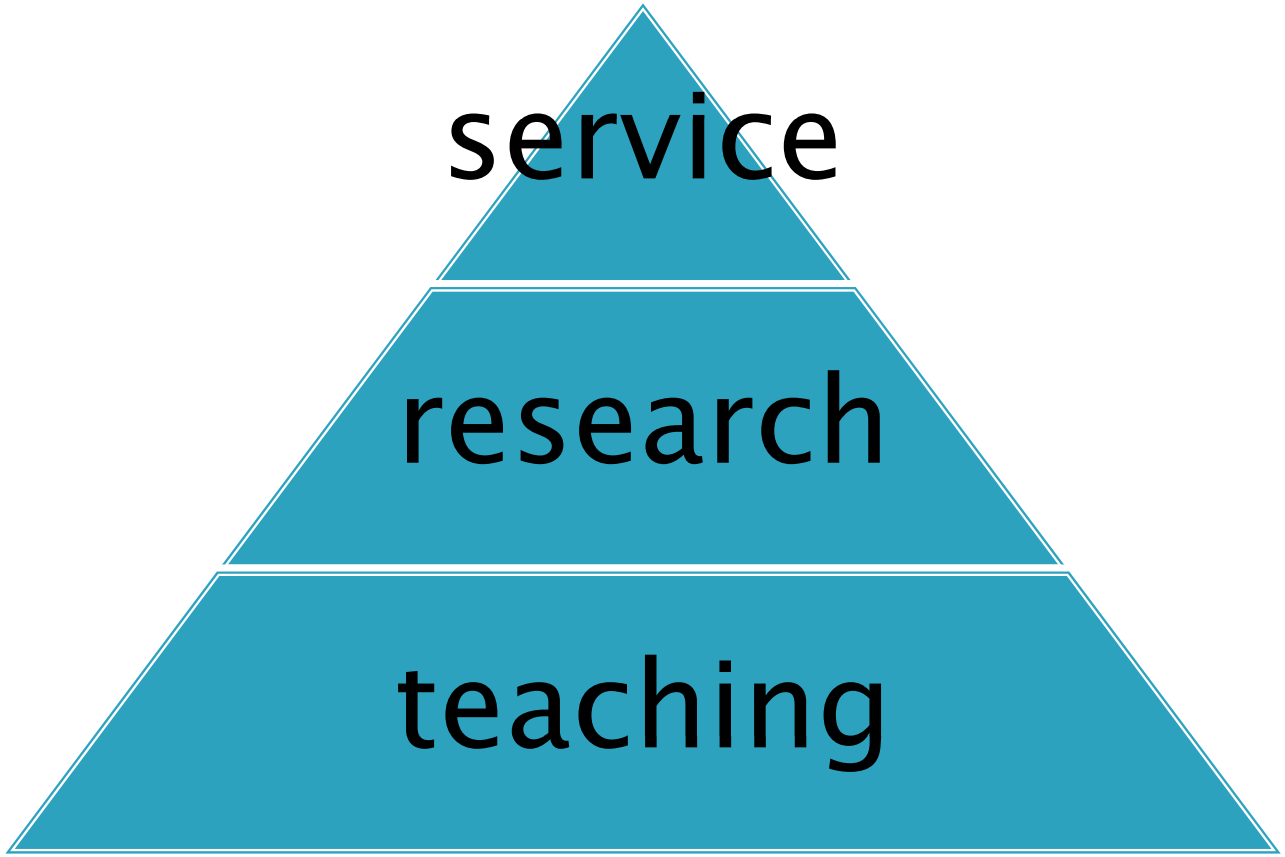
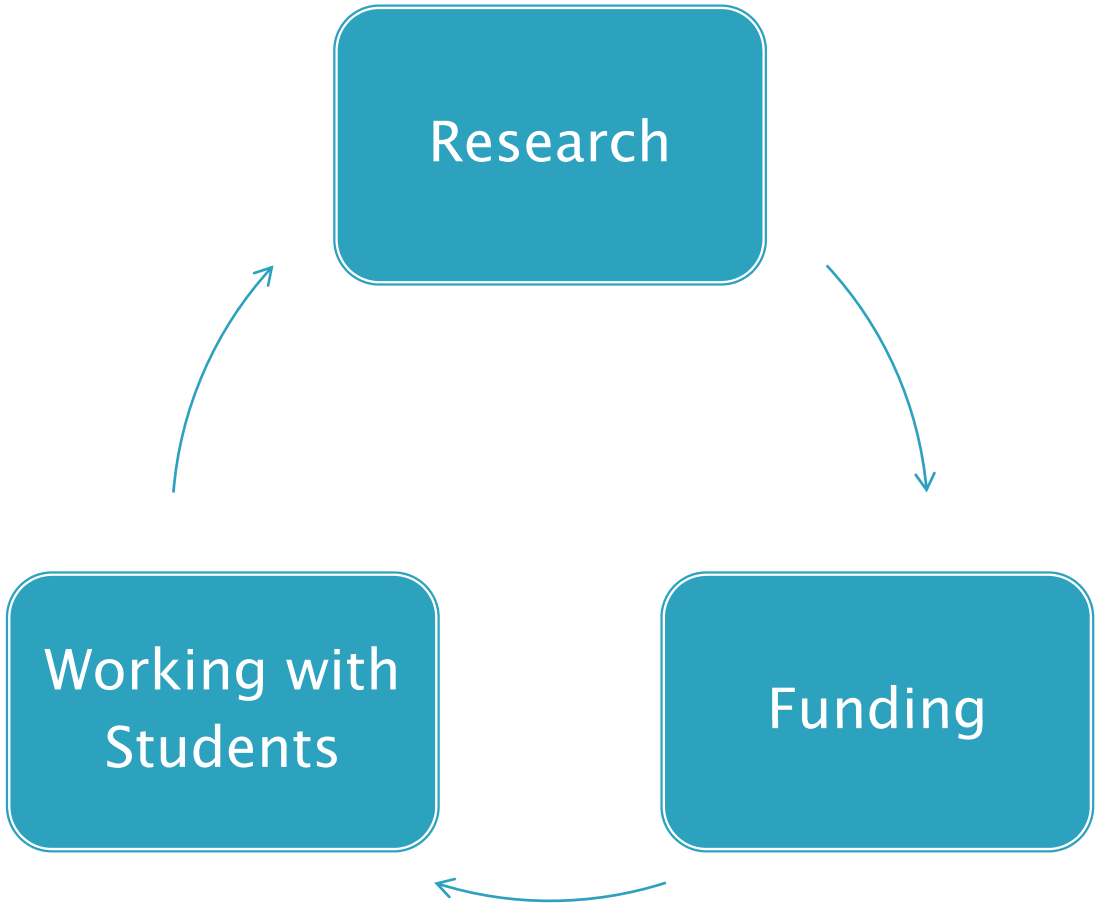
Getting Started with Research and Funding

Alina Lazar
Department of Computer Science and Information Systems
Youngstown State University



What do Professors do all day?



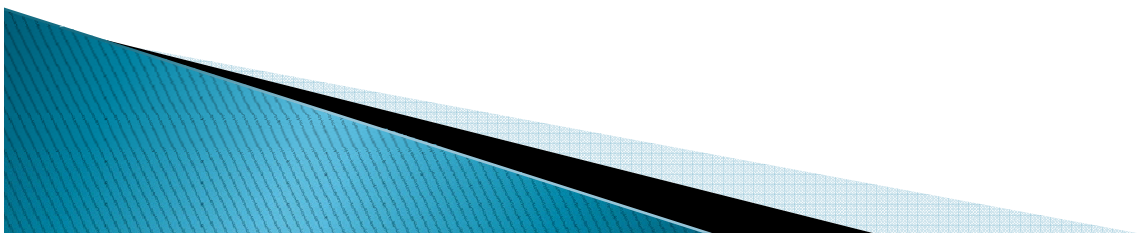

Research
Funding
Working with Students

Why do you do research?

1. I like to learn new things.
2. I love solving a challenge.
3. I am working on my thesis.
4. It is part of my job.
5. Other

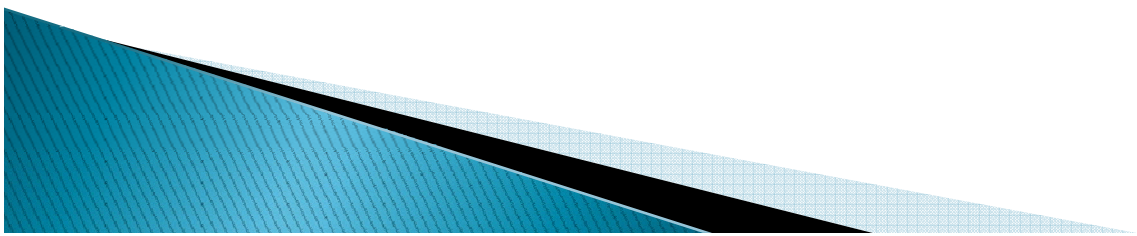
Why do Research?

- You have an unsatisfied intellectual curiosity.
- You like to always learn new things.
- You like to better understand things around you.
- You like to be at the forefront of an exciting technical field.



Can a Women be Successful?

- The odds are against us.
- Nobel Prize – 33 women versus 735 men
- Turing Award – Frances Allen the first woman
- CS faculty on tenure-track –18%
- Assistant professors – 16%
- Associate professors – 12%
- Full professors – 10%



Still…

Ada Lovelace

Frances E. Allen

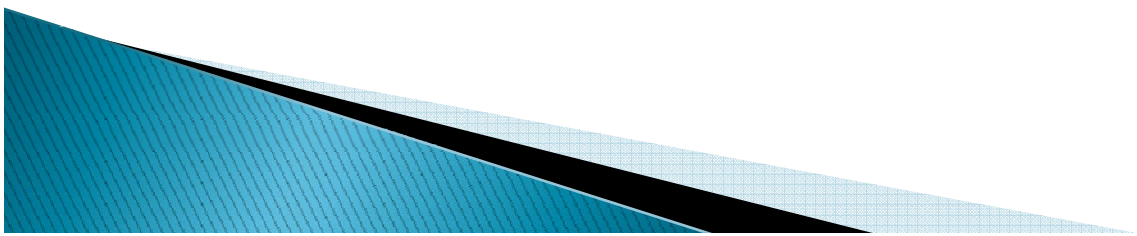
Women Statistics

What is the percent of female Science and Engineering Faculty that have doctoral degrees?

1. 30%
2. 40%
3. 50%
4. 60%

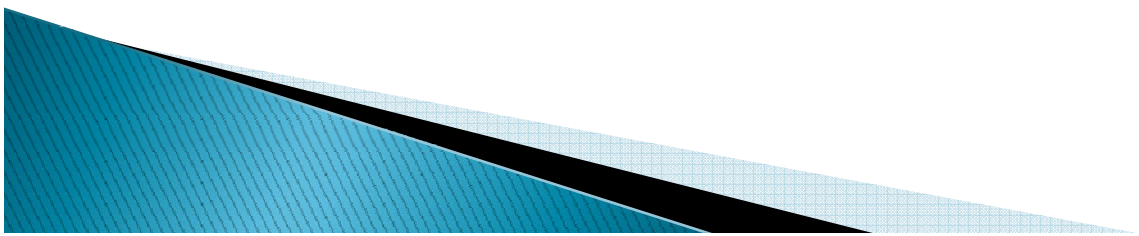
Be passionate!

- When was the last time you read a professional journal or book related to your work?
- Name at least two of the key people in your field.



Be passionate!

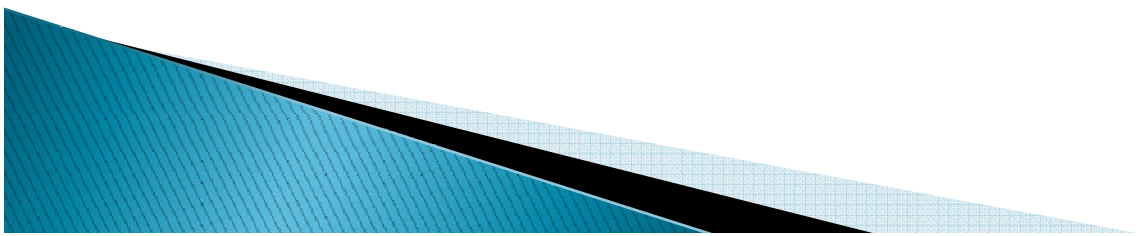
- If you had to, would you spend your own money to buy tools or other materials that would improve the quality of your work?
- If you did not do this for work, would you still do it (or something related to it) as a hobby?



Research Plan

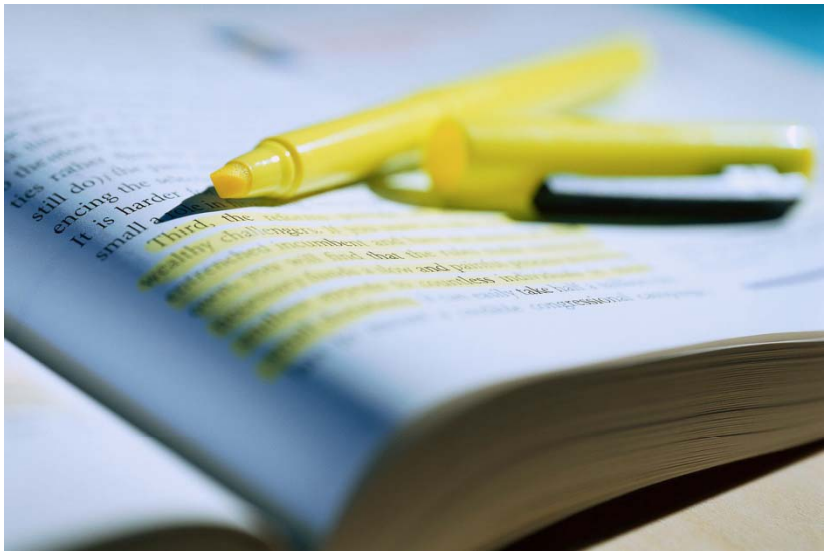
How to Proceed?

- Manage time well
- Start with problems rather than solutions
- Break the problem into manageable pieces
- Know what it means to solve your problem
- Balance short-term goals and long-term goals
- Promote your work



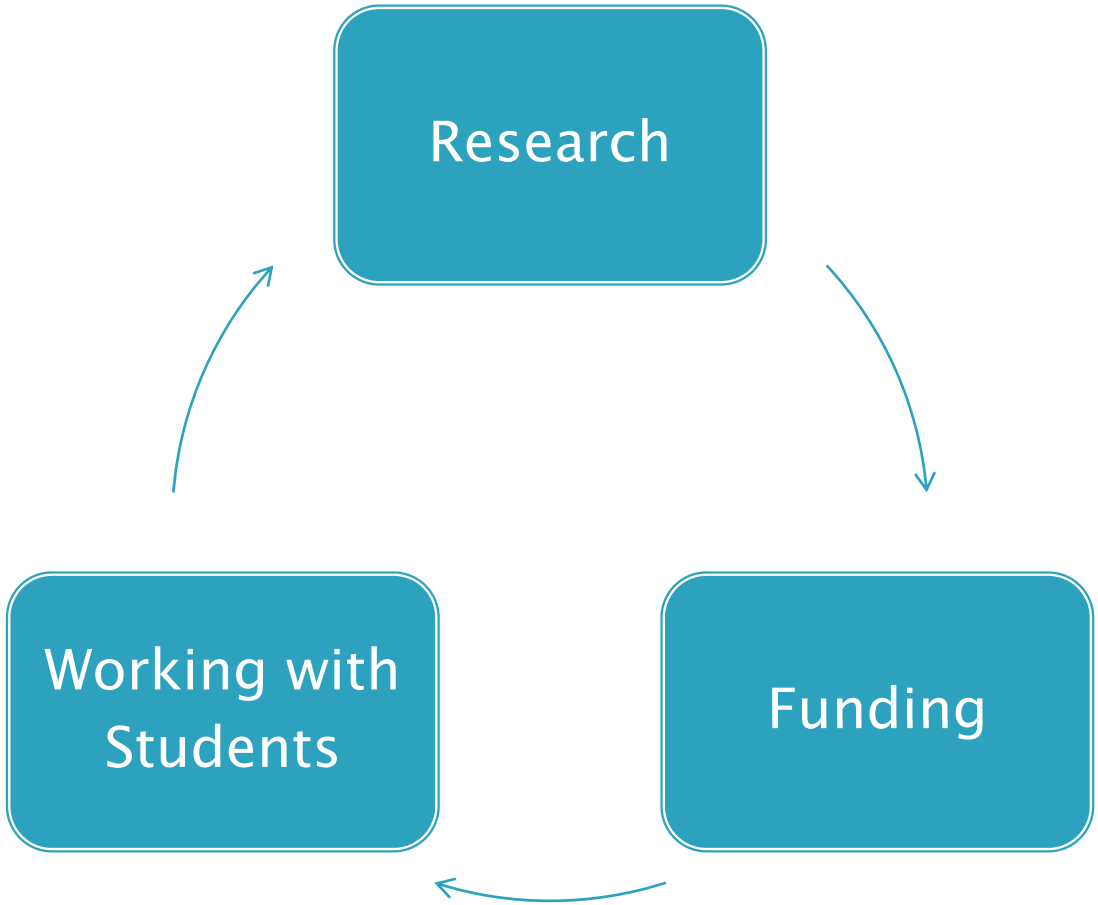
Publish

- Where to publish?
  - Journals versus conferences
  - Workshops
- What to publish?
- What do reviewers look for?
- Talks



Collaborations

- Possible collaborations
  - advisor
  - faculty in the department
  - faculty in other departments
  - friends or colleagues from graduate school
  - other people interested in the same field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Research Funding

- Why is important?
- Internal Funding
- Company-based Funding
- External Funding
- The Grant Advisor (research funding database)
- Start small

I think it is difficult to obtain funding.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

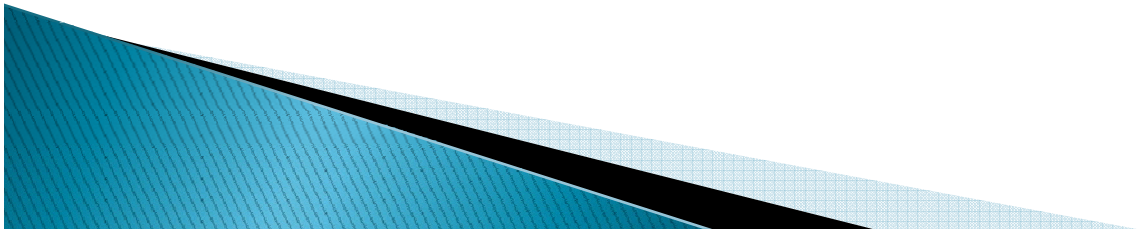
Funding Sources – Internal

- Start-up funds
- Research Professorship
- University Council Grant
- Research Assistant
- Dean's Release Time
- Teaching related
- Distance Learning

- Office of Grants and Sponsored Programs

Funding Sources – Companies

- Microsoft
  - Virtual Earth™ Academic Research Collaboration
  - SensorMap: Browsing the Physical World in Real-Time
  - Gaming in Computer Science 2006
    Tablet PC Technology and Higher Education 2006
- HP
  - HP Technology for Teaching Grant Initiative



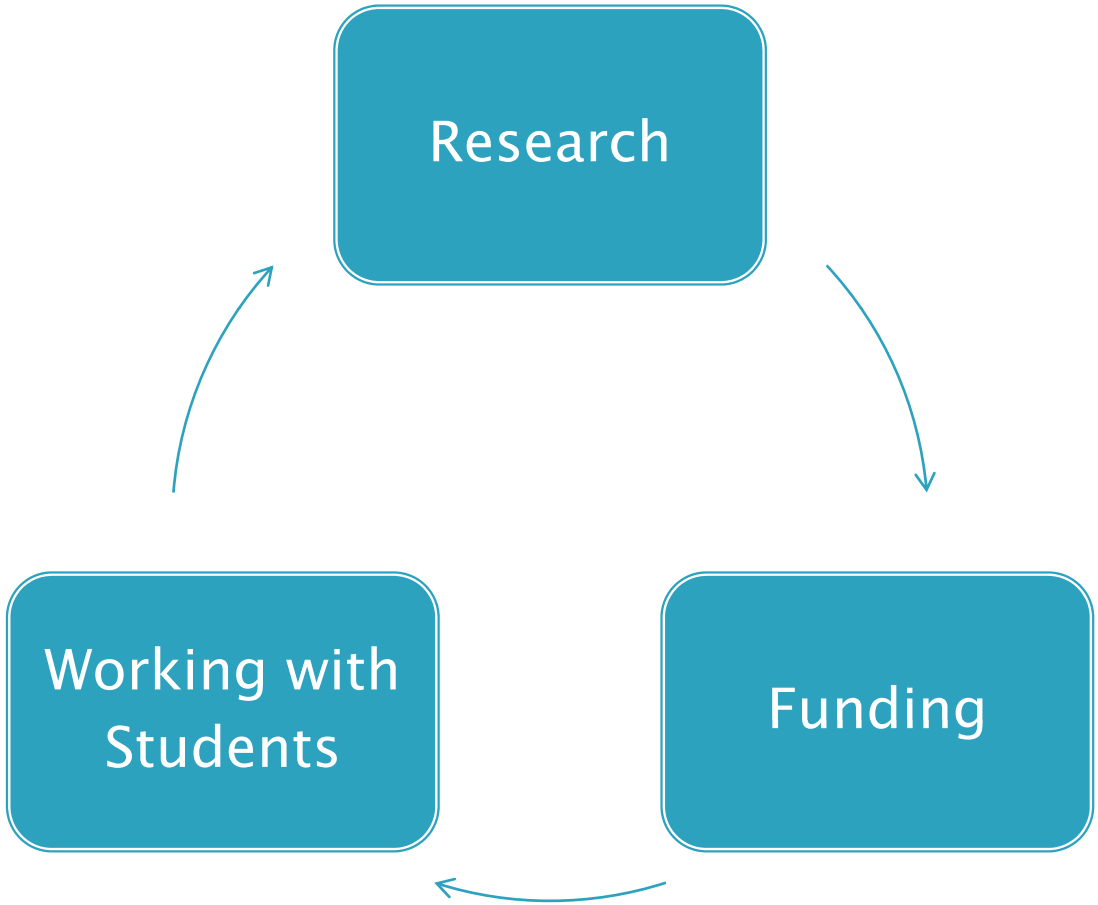
Funding Sources – External

- NSF
  - Career
  - CCLI
  - REU
  - Others
- DARPA
- DOE
- NIH
- NASA

- NSF – Broadening Participation in Computing

- Get on program review panels.

Working with students

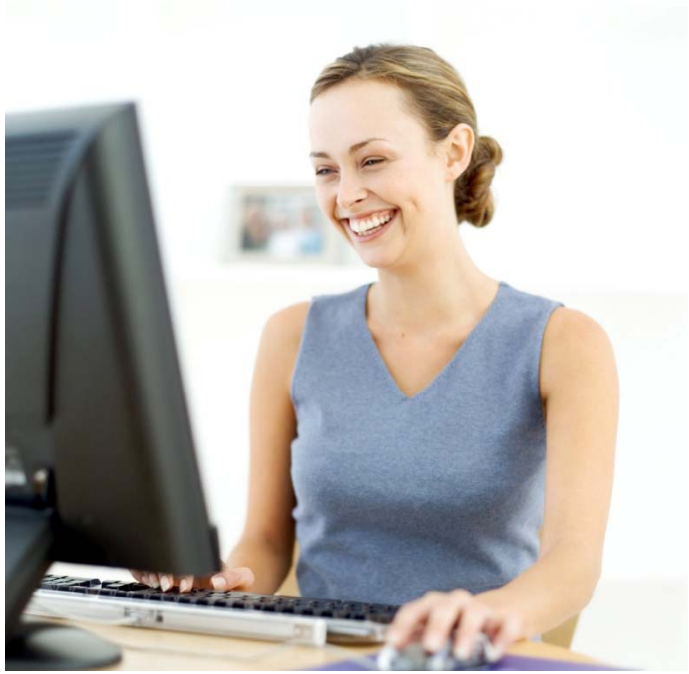


Working with students is very rewarding.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

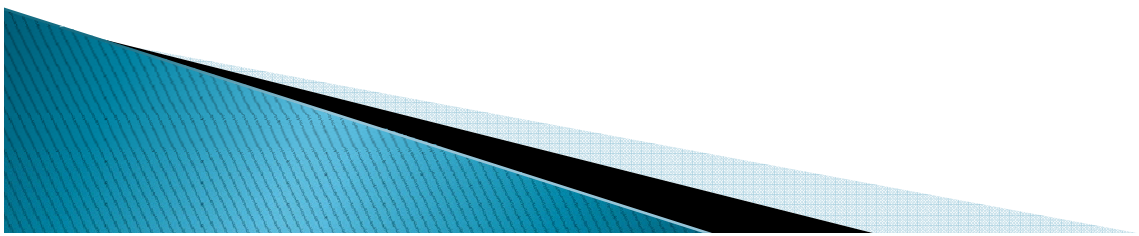
Working with Undergraduate Students

- Mentoring and advising students.
- It is a very rewarding process.
- Is it really possible?

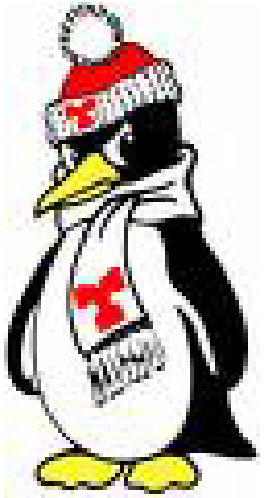


Drawbacks

- The level of sophistication will depend on the ability of the student.
- Build one student's project on the work of another student.
- How much time do student have to do research?
- Continuity between students.

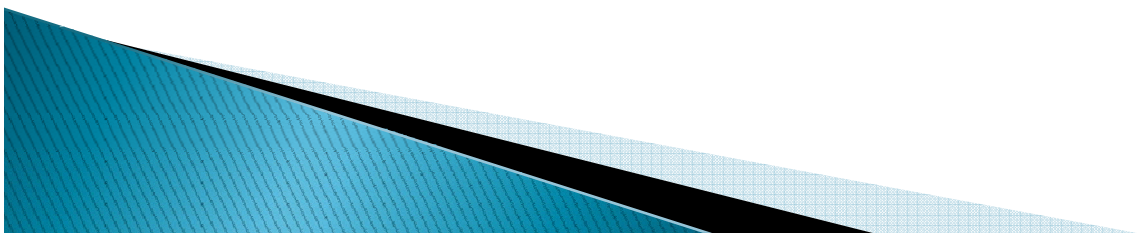


- 13,183 total students 1,192 graduate students
- urban campus, a commuter school
- master level university
- open admission
- lowest tuition among the 11 Ohio state universities



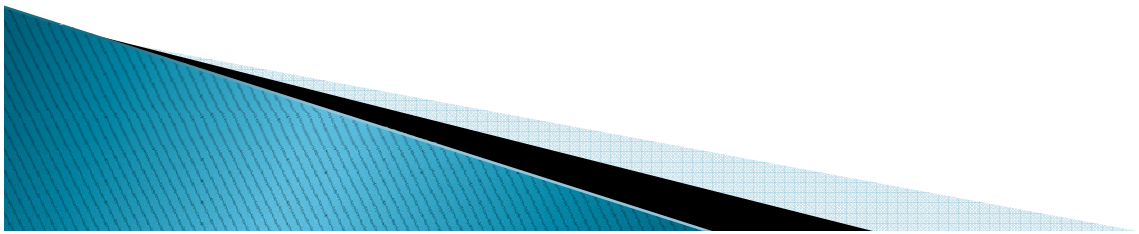
Find Good Students

- In the classes you teach.
- Give talks about your research in the department.
- Students doing senior projects.
- Spot the best students in their freshmen year and recruit them in the sophomore year.
- Look for their academic performance as well as work ethics and communication skills.



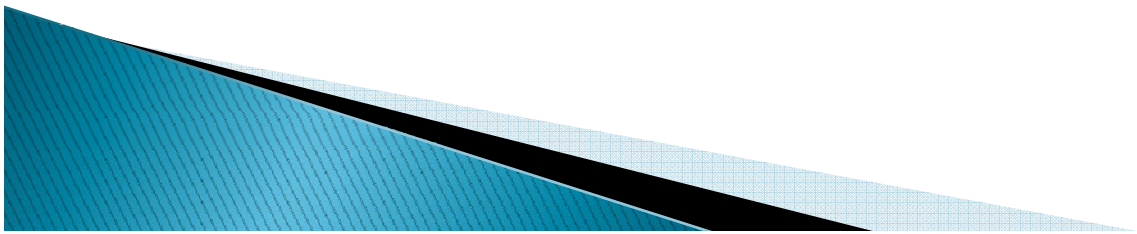
Develop Good Students

- In the beginning students will need to be given adequate background and reading material.
- Undergraduates require individualize attention.
- Set ground rules and enforce them.
- Be a role model.



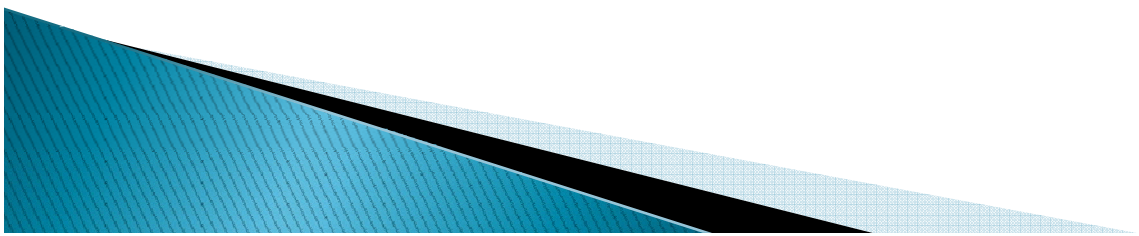
Support your Students

- Research Assistant.
- From your own grants.
- CREU.
- Scholarships and Fellowships.
- University jobs.
- Recommendation letters.



Encourage your Students to Publish

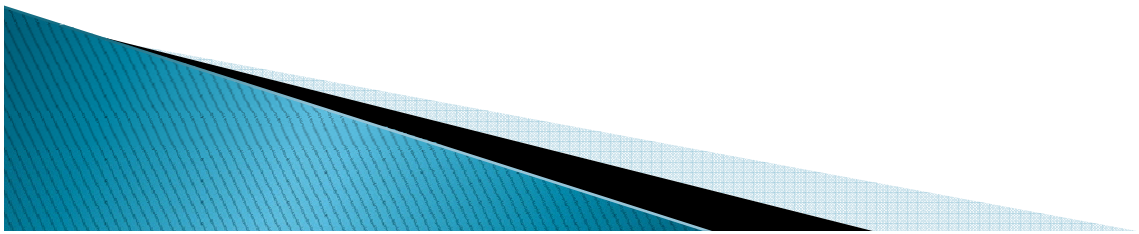
- Let students know about opportunities.
  - QUEST – YSU local student conference
  - OCWIC – Ohio Celebration of Women in Computing
  - ACM programming competitions
  - CCSC:MW – Consortium for Computing Science in Colleges – Midwest
  - ACM research competitions



YSU's CREU Team at OCWIC

Promote your Students

- Department
- College
- University
- Credit them in your talks
- Nominate them for awards and scholarships
- Be a resource for internships and jobs



Coclusions

- You Can Do It!
- Be open minded!
- Do not miss any opportunity!
- It takes a lot of hard work.
- It is very rewarding.

Refrences

- Francine Berman, “Building a Research Career”, CRA-W Career Mentoring Workshops.
- Kathy Sierra, Creating Passionate Users, Don’t ask employees to be passionate about the company!, http://headrush.typepad.com/creating_passionate_users/2007/02/dont_ask_employ.html (Mar. 3, 2007)
- Barbara G. Ryder, “Mapping out a Research Agenda”, http://www.cs.rutgers.edu/~ryder/DoingResNSEFS505.pdf

About me

- BS in CS from Western University of Timisoara Romania, in ‘95.
- PhD in CS from Wayne State University, Detroit, MI, in ’02.
- Assistant Professor at Youngstown State University.
- Married, one child.
- Hobbies: hiking camping, skiing.