Career and Research Education Program

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Career and Academic 4-year plans

• Upon graduation: ~50% go to grad school, 50% are employed in e.g. 3M, medical devices, go to law school, data science, ...

Career and Research Education skills are for Everyone!
• **You** must be proactive! Engage!

• **Strongly Recommended** = All should participate in all

• **Recommended** = Do your best
Engage in Research!

- Large School = more research opportunities => Take advantage!
- Enrich your physics education
- Gain skills (experimental, computational, personal, ...)
- Know (a) professor(s) more closely => get recommendation letters for national programs, fellowships, internships, future employers, or graduate schools

- REU = Research Experience for Undergraduates (national program)
- UMN
  - Knock on doors
  - Be ready to be disappointed, but not to give up!
  - Undergraduate Research Opportunities Program (UROP)
Kalven Bonin (Physics BS)
Diagnostic Medical Physicist at Radiation Physics Consultants, Duluth MN

Kalven chose to study physics in college because he really enjoyed his high school physics class. He knew he was interested in medical physics and radiation therapy, and a physics degree was the next logical step on his path to a career in that field.

“A degree in physics is more than just a piece of paper which states ‘you are qualified for this job.’ The problem-solving skills that I acquired throughout the process of obtaining my degree have helped me tremendously.”

After graduating from the U, Kalven got a job as a diagnostic medical physicist at Radiation Physics Consultants, traveling around the Midwest performing quality assurance and safety inspections on X-ray equipment. He credits his undergraduate physics education for providing the resources he needed to succeed.

“My research experience at the U as an undergraduate has helped my career because employers value candidates who are excited to develop new ideas.”

In the future, Kalven plans to attend graduate school, earn a PhD, and complete a Medical Physics Certification program so he can move into the radiation therapy side of medical physics.
Career Education

- Career Discussion - now
- CSE Career Center
  - Resume writing workshops
  - Career fair – twice a year
- CSE
  - Mentorship program
- Physics
  - Career Panel
  - Company visits
  - Periodic colloquium & seminar
- CSE Career Center
  - Company representatives

Year 1:
- Career Discussion
- Career fair

Year 2:
- Resume Writing
- Mentorship
- Career Panel

Year 3:
- Career Panel
- Company Visit
- Career fair
- Colloq./Seminar
- Mentorship

Year 4:
- Mentorship
- Career fair
- Colloq./Seminar
- Company Reps
Career Education

• Internships
  • Summer or semester
  • 3M, Seagate, ...

• Graduate Written Exam

• Mock Interviews
  • CSE Career Center

• Capstone Class

Diagram:
- REU
- UMN Research
- Company Reps
- REU/Grad School
- Internship
- Capstone
- Internship
- GWE Prep
- Career Panel
- Mock Interview
Tracee Walker Gilbert (Physics BS)
Owner and Operator of Systems Innovation, LLC

Coming from a family of writers, musicians and teachers, Tracee calls herself an “anomaly.” But being surrounded by creativity and early exposure to math and science led to a desire to do physics.

“I always had a passion for solving problems, really tough problems,” Tracee admits.

After earning her bachelor’s in physics, Tracee did a little bit of everything. She worked for a series of companies and took a leave of absence to earn her PhD in Industrial and Systems Engineering, before getting a fellowship with the American Association for the Advancement of Science.

Finally, Tracee launched her own company, System Innovation, providing management and technology consulting, systems engineering services, and research and development oversight. Starting her own business was a long-time dream, and Tracee feels that her physics degree gave her the skills she needed to be successful.

“[Physics] really gives you the critical thinking and logical reasoning skills that are needed to not only be innovative, but to be a problem solver,” she says. “You can go anywhere with a physics degree. If you start off with a business degree, it’s harder to go in the other direction. Most things were easy for me to learn having the physics foundation.”
Welcome to the Physics and Astrophysics Major

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