Summer Research Experiences

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What kind of practical experience can a physics major get in the summer?

– Research Experience: From fundamental science to applied engineering

– Some other sort of internship (job training, etc)

– Retail/Fast Food, etc. (not exactly a career builder but pays the bills)
Why do research as an undergraduate?

You get to learn about something no one else has studied before!
• Build skills (physics and more)
• Opportunity to DO physics
• Explore career options
• Earn money (in some cases)
• Earn credit (in some cases)
• Build connections

Different types of research experiences

• Government programs
  – NSF-REU (Research Experience for Undergraduates)
  – DOE-SULI –Department of Energy Summer Undergraduate Laboratory Internship
  – National Lab fellowship/internship
• Other fellowships from societies (minority, med. phys, astro.)
• your own department/university
• Industrial programs (research internship)
How to find a research experience online:

- **DOE SULI**
- Pathways to Science: [http://www.pathwaystoscience.org/](http://www.pathwaystoscience.org/)
- **The Nucleus**—physics community
- WebGURU
- Physics Today
- USA Jobs—government jobs for students
- Society websites: NSBP, NSHP, SACNAS, AAPM
- keyword searches

How to find a research experience locally?

- **Campus resources**
  - Campus careers services office
    - emails from your academic advisors
    - that job board in your department
      - Faculty ***
        - Talk to professors - send them an email!
  - Volunteer or work for academic credit during academic year
- **Other local opportunities**
  - Newspapers
  - Job/career fairs
    - *** this is also where you find non-research internships!
Other types of internships

• teaching internships
  - TOPS
  - Education Pioneers
  - (keyword: physics summer teaching internships)

• Industry internships
  - Ask contacts for suggestions (networking, friends/relatives)
  - career fairs, your university’s career website

• Others (keyword: physics major internship)
  – AAAS Mass Media Science Internship
  – Research in Industrial Projects for Students

How to apply?

STEP 1: START EARLY

• Do research on “the job”
• Check requirements (minimum grade, transcript, year)
• Develop a good essay or cover letter
  - Focus on fit: skills AND motivation matter
  - discuss your interests and experience
  - Quality Matters: get it reviewed
• PERSONAL Recommendations matter
  - Select recommenders that know you, not just your grades
  - Provide recommender with application materials (job description AND essay)
• Applications are online, in person or both depending on where your opportunity arises.
How to ping a professor (on campus) and send an email that gets noticed:

Dear Prof. Awesome,
My name is Hire Me, I am a Sophomore Physics major. I am looking for a summer research position. I went to your website and am very interested in your research in ____. (You can add pertinent information about your research/course work experience here if you want). I would like to be considered for a position in your lab if you have any available. I am attaching my resume. Thank you very much.

Sincerely,
V. Respectful student

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Your contact info should be in a signature file down here

After you apply

- Follow up to make certain application is complete
  - especially important for jobs with known contacts. (a specific professor, a company)
  - less important for academic fellowship positions with deadlines (unless its after deadline)
- Respond to requests from potential employer promptly and professionally
- Apply more!
How do you chose a position?

- Ask questions
  - Schedule (school/job/other)
  - Project
- Pick a research options that interest you
  - SS, location, activities, useful professional development
  - future location for grad school?
  - future job potential?

What should you expect in the job?

- Learn a lot about how to do research, what its like, and, of course, the science
  - Learn about the University
  - Experience a good research environment
  - Be nurtured to show your potential as a researcher
  - Engage public into your research
  - Make new friends
  - Enjoy the summer

Questions? Ask the experts

1. What summer experiences have you had?
2. How did you find out about them?
3. How did you chose?
4. What did you get out of it (short term and/or long term benefits science-wise/ career wise)?
5. Any advice or personal insight about doing a summer research/internship?