Summer Undergraduate Research Programs

Advice for a successful application

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Scanning Electron Image of Avian Flu Virus
www.nti.org

Why Research?

- Research provides the foundation of scientific knowledge.
- Admission committees consider participation in research activities to be an important part of preparing for medical or graduate school.
- Research experience may be in any discipline. The important part is that the applicant has experience taking responsibility for a project.

Programs Outside Of Home University

- Many summer undergraduate research programs provide fantastic opportunities for undergrads to gain research experience, career advice, friends, and resources not found at their home university. Most are funded, and some compensate for travel expenses.

Wet-lab Research
www.wikepedia.org

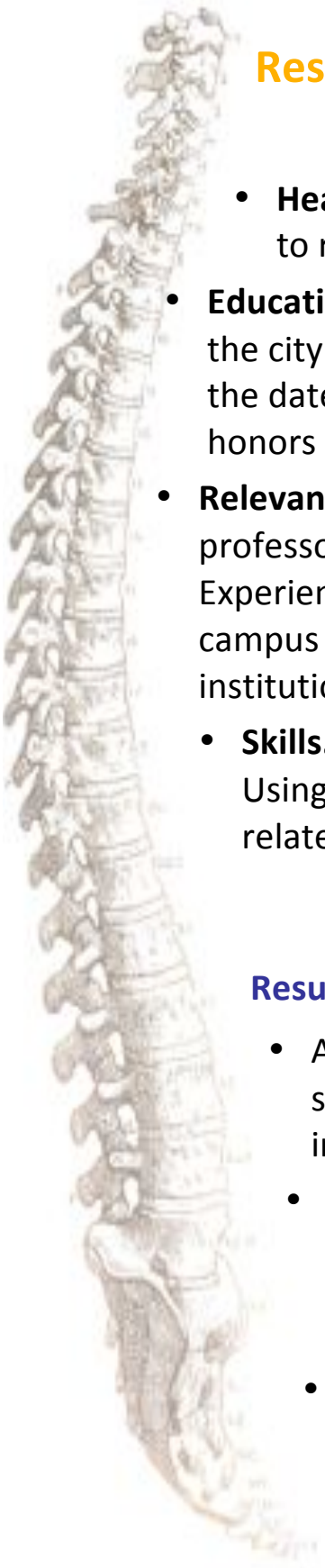
Application Tips

- Research the competitiveness of a program. Apply to multiple programs with a variety in competiveness.
- Ask trusted people for help often! Wise advice can make or break an application. The worst they can say is no.
- Start early and give yourself adequate time to complete the application. It takes multiple weeks to think through the personal statement.
- Avoid sounding overwhelming with words like "passionate/ fascination" or saying how desperate you are to be accepted. Instead, state plainly, for example, that you would like to be a part of their exciting program and/or that it aligns with your research and career interests.
- Letters of Recommendation
    - Ask a non-relative who knows you well and can speak of your personal and scientific qualities. Ask early (at least two weeks before the application deadline). Reminders are a kindness.
- Edit, edit, edit
    - Have multiple sources edit to identify grammar mistakes, proper paragraph composition, etc.
    - Be concise. If it can be said in a more brief or clear manner, do it!
    - Be specific. Don't say: "Freshman year, I had a blast working on a fascinating stem cells project with Professor X". Better: "During my freshman year of college, I contributed to a project on studying the mitotic variations within induced pluripotent stem cells (iPSC) under Professor X. From this project, I learned…"
    - Identify ALL aspects of the prompt. Each of these aspects MUST be addressed in your application.

Personal Statement Suggested Organization

- **First paragraph:** First identify what is unique about you. Really show your personality. Tell the admissions committee why they should admit you. "We look for some originality because nine out of ten essays leave you with a big yawn," Dr. Daniel R. Alonso, Associate Dean for Admissions, Cornell University Medical College. Pick experiences that you can reflect on and evaluate how they would make you more beneficial/attractive to work in a lab.
- **Second paragraph:** Identify your status (school, degree, career plans). For career plans, it is OK to still be deciding. Just make it clear! Word of caution: these are research internships, so you should show your commitment to gaining research experience, not how you want to give life-saving care as a doctor. Show your curiosity and drive for asking new questions in science.
- **Third paragraph:** Reference your prior research experience(s). What was your role in the lab? What skills/techniques did you learn? What was your project hypothesis? What did you learn and how will you apply this future knowledge? "Applicants tend to state and not evaluate. They give a recitation of their experience but no evaluation of what effect that particular experience had on them, no assessment of what certain experiences or honors meant. They also fail to explain errors or weaknesses in their background. Even though we might wish to admit a student, sometimes we can't in view of a weakness that they haven't made any effort to explain" (Beth O'Neil, Director of Admissions and Financial Aid, University of California at Berkeley School of Law).

  No prior experience? First identify if the program you are applying for desires applicants with prior experience. While experience helps, some programs are geared toward students with none. Describe a position of responsibility that would lend itself well to the program of interest.
- **Final paragraph:** Show how this opportunity will impact your future career goals. This is where you make your case for the difference their program will make in your budding scientific career. Examples include: providing you a solid research foundation for graduate, medical or professional school, enabling you to perform research not available at your home institution, etc.



Resume Tips

- **Heading.** Include all the information necessary for a recruiter to reach you.
- **Education.** This section should include the name of your college, the city and state, the degree you received or expect to receive, and the date of the degree. Study abroad experiences and academic honors could also be included in this section.
- **Relevant Experience.** Have you worked on a research project with a professor? Do you have any publications? Presentations? Experience can also include prior internships, volunteer experience, campus involvement, and work study. For each item: List your title, institution, the city and state, and dates of involvement.
- **Skills.** Do you have experience with any wet-lab techniques? Using research software? This is where you show you have a skill related to research labs.

Resume Tips

- A resume is a marketing piece, not a chance to share your life story. Therefore, be selective about what you choose to include and leave out. See online for good resume examples.
- Similar to the personal statement, target your resume to the program you are applying for. This is accomplished through being concise and specific in your interest and suitability.
- If possible, keep your resume to a page. Remember, your resume may be judged in 10-30 seconds.

Accepted

- Your lab will teach you the techniques necessary for your project, so one of the best ways to prepare for your internship is to review:
  - Papers your lab has put out and the background science necessary to understand these papers.
  - Research methodology: developing a question, forming a hypothesis, interpreting p values, and utilizing common statistical tests (chi-square, t-test, regression, correlation), positive/negative controls, dependent/independent variables, , etc.

Not Accepted

- Don't give up! Just do the next right thing. Understanding research methodology is critical for research jobs, grad school, the MCAT, etc. In other words, learning the research process now, whether accepted into a summer program or not, will help prepare you for a biomedical career.

Resources

List of most, not all, summer research internships:

- https://www.aamc.org/members/great/61052/great_summerlinks.html
- http://pathwaystoscience.org/programs.aspx?

If applying to NIH summer programs:

- https://www.training.nih.gov/assets/Writing_Successful_NIH_Applications.pdf