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## Building a Strong College Application: An Engineering Example

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Building a strong college application takes thought, time and preparation. Starting in junior year, and most certainly by senior year, students are often asked, "So what are you going to major in when you go to college?" Well-intentioned though it may be, this question puts most students in an awkward position. Young people are smart, smarter than most people give them credit for, and they often are at a loss for how to respond. Sometimes they do have an idea about what they are interested in, but they know as soon as they mention a possible area of interest, they may be peppered with further, ever more specific queries about their future plans.

This column is dedicated to young people and those who are prone to ask them questions about their future plans. I would like to suggest that the better question to ask is, "How are you preparing for your possible major or area of interest?" This inquiry is more to the heart of the matter. Colleges also ask students what academic area draws their interest. But colleges know 80% of students will change their major at least once by the end of the sophomore year. So the real reason colleges ask students about a major is to learn if the student is giving careful thought and preparation to one possible area of interest. This indicates that the student is capable of analytic thinking and shows maturity and good judgment.

Adults who care about young people can better support them by showing an interest in how students are learning more about a possible major or career; some adults, like those in certain professions such as journalism, law or medicine, as well as teachers and counselors, may be able to offer concrete support and guidance with the process itself. The example of engineering serves as an actual illustration. With some thought and a bit of research, it is should be easy to extend the example to any academic subject or career path.

Students who are thinking about majoring in engineering should understand what engineers actually do. Begin by researching what engineering is all about. Here are some tips to help you learn more about the field of

engineering and its subspecialties:

- Research colleges with strong engineering programs. Go through their engineering departments' website to learn as much as you can about the programs. Try to arrange visits to a few of colleges that appeal to you, and talk to engineering advisors. Try to combine these discussions with a regular college tour and information session; be sure to register for the tour and the make a definite appointment with the engineering advisor. Planning ahead will work to your benefit.
- Shadow engineers. Talk to them about their jobs and what they do each day. Get a feel for the differences between mechanical, electrical, chemical, civil and bioengineering. There are quite a few other specialties to read about and begin to understand.
- Look into internships. Try to participate in one or more opportunities before your senior year. Future engineers can research opportunities such as the UC Apprentice Researcher (6 weeks with a local UC grad student) or COSMOS. And Google Engineering Research Opportunities for High School Students and you will get many leads to follow up on.
- Enroll in an academic enrichment course at a community college. Engagement in enrichment activities demonstrates intellect, passion, and curiosity; in the engineering example, these activities will reveal your aptitude in engineering, computer science or science in general. Computer science is important since all engineering programs include programming languages as skillsets. And many engineering programs require honors chemistry and or physics for admission.

- A great resource for all students is the Bureau of Labor Statistics Occupational Handbook. Check it out by visiting [www.bls.gov/oco](http://www.bls.gov/oco) to learn about hundreds of different types of jobs. The handbook is a wonderful resource

and tells you about the training and education required for various careers, earnings, expected job prospects and more.

In addition to exploring engineering as a possible career path, keep in mind that a strong engineering applicant will have:

- Completed a calculus series in high school.
- Have a strong SAT or ACT math score.
- Earned excellent grades in math and science throughout high school.
- Scored well on the SAT Math Level II Subject Test as well as Physics or Chemistry SAT Subject Tests.
- Completed a number of AP courses to show the ability to handle the rigor of college-level coursework.

Whatever academic interests you have, it is wise to start learning more about them early in your high school career. The strongest college applications are submitted by students who have done some systematic research and found ways to get exposure to and direct experience in possible majors and career paths.

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