

# Building a Strong College Application: An Engineering Example

By Elizabeth LaScala, PhD

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



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tion 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 specialties:

- 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 op-

portunities 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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## THE APP RAP

By Eric Pawlakos

**Two Great College Finance Apps Borrowing for College**  
Developer: USA Funds  
Price: Free  
For: iPhone, iTouch, iPad

**Student Loan Calculator**  
Developer: Business Compass  
Price: Free  
For: Androids

Many teens are faced with the prospect of taking out loans for college. In fact, student loans this year are going to surpass one trillion dollars. I found two apps that make it easier to understand the financial obligations you may be encountering and the debt you may face at the end of your college enrollment.

Two of my favorite apps can help you decide how much your college education is going to cost while giving you concrete information to help you know how long it will take to repay any loans. The first app is *Borrowing for College*. It is available for the iPhone, iTouch and iPad. What I found most interesting with this app is that it requires the student to contemplate the expected employment salary after graduation. It calculates the amount of money you need in three simple steps. First, input what you guess your starting salary will be in your future career. Next, estimate what percentage of your paycheck can be used towards paying off the loan. Finally, add in the loan interest rate and term length. Assuming you will earn \$50,000 and intend to use 10% of that to reduce your loan payments, over ten years your monthly repayment amount will be \$416.00 at the standard student loan rate of 6.8%. With this calculation, you wouldn't want to exceed a loan of more than \$5,000 annually.

Now you probably would like to know what the actual cost of your loan will be. The second and equally helpful app, available only for the Android, is called the *Student Loan Calculator by Business Compass*. This app also needs only three pieces of information and definitely makes you think twice before assuming loan debt. The app requires input of the term, loan balance, and interest rate. For a student who needs \$60,000, the monthly payment is almost \$700.00 per month at the standard 6.8% interest rate. Over the ten year lifetime of the loan, a total of \$85,000 will be required to complete the repayment. Paying that extra \$25,000 may encourage students to forget the loans and instead apply for grants and scholarships.

According to the University of California web site, (<http://www.universityofcalifornia.edu/accountability/index/3.7>) currently, 27.5% of University of California students graduate with twenty to over thirty thousand dollars of debt. These apps really give us ammunition to realize the amount of money we need for school and the salary we must attain to repay any loans. Information is power and could keep you out of student debt.

Eric Pawlakos is a senior at Miramonte High School and on-air reporter for the teen radio program, *Express Yourself!*<sup>TM</sup>

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