BME Career Planning Guide

After-graduation planning begins in your 2nd year...

... that’s when you start setting in motion the events and opportunities that will make it possible for you to achieve your goals after graduation.

This guide will help you make informed decisions at the right times, given the three common career paths for BME majors.

Special emphasis is placed on resources within the department.

Contacts:
Academics: Dr. William Guilford
drbill@virginia.edu

Research for Credit: Kitter Bishop, kitter@virginia.edu

Design for Credit: Dr. Timothy Allen
teallen@virginia.edu

Internships: (Mrs.) Bobbe Nixon
bobbe@virginia.edu

Premed Advising: Maxine Proctor, mprocto@virginia.edu
BME’s Industrial Internship Program

Paid summer internships for BME majors. Partner companies include biomedical engineering, biotechnology, and medical device companies.

Students participate after the 2nd and/or 3rd year. They work for 10 weeks during the summer, full-time at the corporate site. Compensation is about $4,000.

Some of BME’s internships are outside Charlottesville. Think ahead about the logistics of an out-of-town internship (subletting your apartment, talking to your parents, etc).

For internship opportunities:
Roberta Nixon (Bobbe)
BME Director of Internships and Corporate Outreach
bobbe@virginia.edu
434 243-6285
Stacey Hall, Main Street

The Jobs Route: Timeline for Students Interested in Getting a Job!

Starting 2nd Year
Talk to your advisor about your goals.
Develop a short resume.
Talk to Bobbe Nixon, BME Internship Director and ad hoc career advisor. Set up an appointment: bobbe@virginia.edu.
Practice your professional skills. Career fairs, poster sessions, mock interviews, meet and greets, BME social events: all will help you develop confidence to be a great interviewee.
Get experience-Shadow or volunteer in a research lab to get exposure and develop interests. Kitter, BME UG Coordinator, can help with shadowing.
Talk to lots of people about your short term and long term goals.

Summer after 2nd Year
Do something hands-on:
Research, Internship, relevant job, or NIH or NSF summer program REU (a.k.a. REU or Research Experience for Undergraduates).

You can do a BME Industry Internship after 2nd year, but you usually need some practical skills or lab experience. REUs and summer research are usually open to you, even without a ton of prior experience.

Third Year
Take BIOM 453 “BME Advanced Projects” or BIOM 496 “BME Advanced Design.”

Choose relevant classes. Work with your advisor to choose classes that are relevant to your interests. If you’re still developing your interests, take strong foundational courses, such as CS 201, ECE 203, MAE 230, and MSE 209.

Fourth Year
Update your resume. Talk to people! Mock interview.
Choose a relevant Capstone project, usually a team-based project in product development or practical applications of BME.
Start interviewing. Immediately. Talk to the companies where you interned. Attend the SEAS Career Fairs. Our students are regularly hired by companies that are not “BME” companies.

Summer after 3rd Year
INTERN! Internships are key to getting a job straight out of school! Try to intern with a company (or type of company) you would potentially want to work for. Or intern in an area of the country that’s rich in BME jobs.

What are some entry level engineering/bioengineering job titles? Manufacturing Engineer, Quality Engineer, Clinical or Field Engineer, Project or Product Engineer, Staff Engineer, Researcher (in a hospital, university, military or government lab), Software engineer, Sales Engineer, Management or Marketing Trainee.

What other fields recruit entry-level BMEs? FDA/Regulatory Affairs, US Patent Office, financial services, business development firms, marketing and consulting firms working with healthcare and investment groups.
Various Types of Jobs

Software/Hardware, Medical Devices, Instrumentation

**Do a Minor.** CS or CPE minor, if you’re interested in software or hardware engineering. ECE minor if you’re interested in instrumentation.

**Pursue a broadly technical course of study,** including, as appropriate, APMA 308, CS 201, 202, ECE 203, MAE 230, 231.

**Get hands-on experience and real world exposure.** Intern, work in a lab, do a relevant Capstone project. That said, don’t hop around too much:

**Show that you are capable of sustained effort:** Intern twice with the same company, continue your undergrad research as your Capstone project, or simply make sure that all your various experiences (REUs, internship, research, Capstone) are rationally focused around a single area/interest.

**Practice your professional skills.**

**Talk about your goals.**

Biopharmaceuticals, Biotechnology, Life Sciences Industry

**Take advanced courses** in an interest area. Take both semesters of Chemistry.

**Get a good mix of research lab and “real-world” industry experience:** For example, do BIOM 453 “Research for Credit” during your 3rd year... then a industry internship over the summer... and then resume your BIOM 453 research as your Capstone project in the fourth year. This is just one way to have several experiences, yet show sustained effort.

**Practice your professional skills.**

**Talk about your goals.**

Consulting, Services, Government, Sales, Defense

**Do a minor** in engineering business, economics, foreign affairs, foreign language, or another area, as appropriate.

**Get real-world exposure** through internships or relevant work experiences. You’ll probably choose a team-based Capstone project.

**Practice your professional skills,** so that you are comfortable and able to act appropriately while interviewing.

**Mock interview.** Practice getting a job. It’s often the interview that makes or breaks your chances.

**Don’t miss the boat.** Consulting, financial services, and many other firms can start interviewing early fall.

What sets BMEs apart from other job applicants?

BMEs speak three languages: engineering, medicine, and life sciences. They are accustomed to working in diverse teams. They have an in-depth understanding of living systems and technology. They have knowledge of regulatory affairs, and many have animal and clinical research exposure. They show by their choice of major that they want to contribute to society and medicine.

These companies have hired our entry level alums, 05-08

Keywords: Getting an Early Start, Continuity, In-Depth Focus
Second Year

**See U.Va.’s PreMed Advisor.**
Review the prehealth site & join the “uva-prehealth” email list.

**Don’t wait until 3rd year to fix your GPA.** 3.5 or higher is recommended for med school admissions. If your GPA is not ideal, talk to the premed advisor about it. There are multiple paths to medical school, and she can discuss those with you.

**Take Organic Chemistry.**

**Get clinical exposure.** You need to show that you are genuinely interested in patient care. The premed advising office has lots of ideas and advice: shadow a physician, volunteer in the medical center or hospice, EMT classes.

**Plan for the summer.**
Application deadlines for Global Health Scholarships and REUs are here before you know it.

Summer After 2nd Year

**Do research or get more clinical experience.** In-depth clinical experience is great, but other experiences—such as an REU, research, or a Global Health Scholars Project—are a close second. The premed advising website has lots of ideas. See Kitter for info on undergrad research in BME labs. See Bobbe for REU advice.

Third Year

**Take Orgo, if you haven’t already.**

**Take the MCATs early.** Take an MCAT class, if you need one. The April MCAT is STRONGLY recommended.

**Prepare to apply.** Don’t make the mistake of waiting too long. Write your personal statement and have it vetted. Corral your recommendation letters.

Summer after 3rd Year

Submit your AMCAS application in early June.
Get more clinical or research experience.

Fourth Year

**Take Biochemistry and/or Microbiology, if applicable.**

Interview.

Revisit your med school plans if your GPA is not strong.

Keywords: Clinical Exposures, Early Application, Strong Numbers

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**PreMed Requirements:**
- 2 semesters Chemistry Lecture & Lab
- 2 semesters Physics Lecture & Lab
- 2 semesters Organic Chemistry Lecture & Lab
- 2 semesters English
- 2 semesters Math
- 2 semesters Biology Lecture & Lab. Most medical schools will accept BIOM 201, 202, 204, 380, 390 as a substitute for BIOL 201-204.

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**Be sure to contact:**
Maxine Proctor, U.Va.’s PreMed Advisor
Office of PreProfessional Services. Bryant Hall at Scott Stadium, 434 924-8900, mprocto7g@virginia.edu. Walk-in advising for premeds. Or make an appointment.

[www.career.virginia.edu/students/preprof/prehealth/](http://www.career.virginia.edu/students/preprof/prehealth/)
This website is a comprehensive guide for U.Va. students interested in medical school. Thoroughly review this site!

Where are BME Alumni? Classes of 05-08

**M.D./Ph.D. Programs**
- Johns Hopkins, University of Washington, University of Colorado, University of Virginia, Wake Forest

**Medical Schools**
- UNC Chapel Hill, University of Colorado, University of Iowa, University of Michigan, Michigan State, University of Virginia, Georgetown, Drexel, Eastern Va Medical School, MCV/VCU, New Jersey Medical School, Temple University, University of Kentucky

**Other Programs**
- Dental Schools: UPenn, VCU, Tufts
- Vet School: Ohio State
- Physical Therapy School: USC
- Pharmacy School: VCU