

## **So you're interested in applying to graduate school...**

...a helpful guide to navigating the grad school admission process.  
Brought to you by the BCSEPC 2007

### Basic FAQ

The following summarizes some of the most frequently asked questions whose answers tend to be shared by all science departments. Questions that have answers specific to chemistry, biology, and biochemistry will be addressed in the next section. This information is a compilation of the graduate panels of 2006 and 2007.

#### **When should I start preparing to apply to grad school?**

Heed the advice of the class of 2006: "Plan ahead of time because our first semesters sucked." Applying for grad school is a class and a half, and visiting schools during the second semester takes a good deal of your Fridays and weekends; so juniors, plan the semesters of your senior year accordingly. Have at least an idea of which schools interest you by the summer before your senior year so that you can research their deadlines and requirements online ahead of time: some applications are due before the semester is out; some institutions have rolling apps and it may matter if you apply earlier than later; some schools may want a transcript from a school you went to for a month in Djibouti and it might take you two months to get it. Be on top of supplemental parts of the applications, especially the letters of recommendation. Be considerate to your professors and ask for letters months, rather than days, ahead of time. Juniors: start thinking about where you're interested in going and, more importantly, research those places.

#### **When should I sign up for and take GREs? Which ones are required? How important is a high score?**

Many students have profited from taking the general GRE during the summer before their senior year, or earlier. All schools require the general GRE. The subject tests are administered during the fall, and you will have to plan well enough to sign up for them a month in advance. The subject tests are often required or "highly recommended" by state universities, but are generally optional for private universities. Check to see what your schools require, visit the GRE website to check out the days your tests are administered, and remember to sign up at least a month in advance.

One important thing to remember about the subject tests is that if your school does not require them, you do not need to take them. This is particularly in consideration of them costing over \$100 to take. However, high subject test scores can look very good on an application. You may want to consider taking the test without automatically releasing the scores, and then decide where to send them if you like how you do. Students interested in integrated programs for biochemistry may be able to take any of the three subject tests and it is to their advantage to take the test on their strongest subject. Talk to people who have taken the tests, or even professors, to get an opinion on which test is your best bet.

The general GRE score usually has very little effect on your application unless your scores are very good or extremely bad. Science programs usually only pay attention to math scores when they are bad, and only pay attention to verbal scores when they are good. The influence subject GREs have on your application varies with the institution. Good subject scores can often help an otherwise weak application, and also can recommend you for training grants, fellowships, and other awards once you are a graduate student.

#### **What is the most important part of the application? What's with the personal statement?**

Research experience and letters of recommendation are the most important components of your application; the institution is basically hiring you to do research, so they'd be pleased to know if you are already an accomplished scientific investigator. Your personal statement is significant in that it proves that you've actually mastered English and that you can articulate the details of the research you've done as an intern or MAP student. This said, you should realize that research experience is extremely important to your application; if you are a junior and have no experience yet, consider getting some this coming summer.

The personal statement can often go overlooked by applicants because it's annoying to write. Don't do this. This is your chance to speak intelligently about your research and prove that you're more than a monkey at a lab bench. Be honest and don't try to fool the reader with a hokey greater purpose like helping mankind because the application committee wants to find a researcher who's good at, and wants to do, science. Focus on your research, but pay attention to the questions the application poses in the essay prompt and mention any activities that have given you teaching or leadership experience.

#### **How many schools did you apply to?**

Students have reported applying to a range from five to fifteen schools. Different people have different tasks ahead of them: some want to find the place with the most prestige, others the place with the coolest grad students, and some just want to

figure out what city they want to live in for the next five to six years (yes, it will be that long). Take into consideration what is important to you and, moreover, how careful you need to be about where you apply. Choosing a broad range of schools that differ in prestige will insure you get in somewhere, however, most schools have an application fee, so you can't apply everywhere.

Moreover, every school has a recruitment or interview weekend for its accepted or selected-for-acceptance students, and you'll need to figure out which ones you'll visit if invited. There are only so many weekends between February and March, and weekends often span Thursday night to Sunday morning. How many weekends of your second semester are you mentally and, more importantly, physically capable of giving up? If there are some schools on your list that you're not willing to sacrifice the time to visit, why do you have them on the list?

### **What to look for in schools?**

This is usually a personal matter, as, believe it or not, most universities are capable of producing successful graduate students. However, there are certain issues of varying personal importance that you should consider: funding, programs, geography, prestige, and culture.

Look at funding first, although this is more of a problem for international students. Don't apply to too many state or public schools if you are an international student as they fund their students' stipends with government grants that do not cover non-citizens. This means that an international student may need a professor at the school to agree to pay his or her student stipend in order to be considered for admission.

Programs differ greatly, especially between departments (biological chemistry majors should pay special attention to the section below on the general differences between chemistry and biology programs as they both participate in biochemical research). Research your schools carefully to know the details. Stipends shouldn't fluctuate too much because NIH regulates them, however, be careful to consider the cost of living, too: \$26,000 in St. Louis is an incredible deal, whereas \$28,000 in Boston is not. Some schools offer interdisciplinary programs with varying strengths and weaknesses. Consider doing summer programs at the institutions in which you're interested in order to distinguish the subtleties.

Geography, prestige, and culture are all personal issues. We won't go there.

### **Big name or not big name?**

Rankings are determined by reputations based on surveys of professors; therefore reputations are perpetuated and often obfuscate the strengths or weaknesses of various institutions. There are many ways to work around this problem of the "Top 50 Schools," and a good start can be had online. A good source is phds.org at < <http://graduate-school.phds.org/>>, which constructs a list based on criteria you enter. These online sources are merely a good start, however. You must determine the right school by carefully researching your personal "top 10" list and then visiting a few of them.

It may be helpful to remember that the name of university and program don't really matter if you don't produce significant work. Your future employer will probably assess the significance of your graduate work by looking at the reputation of the professor for whom you did your work and the names of journals in which you've published papers.

### **How should I contact professors that I am interested in?**

Email. Most professors are happy to provide additional information about their institution and research. Consider mentioning info about your past research, interests, 300 level courses and interests/experiences derived from them.

### Differences Between the Departments

This section is intended to give a general idea of the differences found between the chemistry and biology departments, however, the descriptions are not exact. Every school is different and you must determine the details of the programs yourself.

#### *Chemistry*

Chemistry departments tend to admit students without interviews, letting the applicant know by early winter whether or not he or she has been accepted. Recruitment weekends take place at the same time as interviews for admission into biology departments, between February and March, but are conducted differently as the applicants have already been accepted. Although applicants meet with professors in groups during the recruitment weekends, these meetings are not necessarily interviews and are conducted with the intention introducing students to the various types of research taking place at an institution.

Graduate students in chemistry departments usually select their labs during their year after getting to know the faculty and generally do not have rotations. For this reason, choosing an institution that has several professors with which one wants

to work can eliminate the possibility of choosing the wrong lab later on. Senior professors might not take students the following fall semester, so if you are interested in working with someone you may want to clarify whether or not they will be taking students this coming semester. Moreover, the professor you think is the most awesome person in the world could prove to be the contrary once you get to know him or her as a graduate student. Having multiple professors in mind can eliminate this problem.

### *Biology*

Biology departments nearly always have an interview process before accepting students. However, do not be fooled: most students who are invited for interviews are basically accepted and the “interview weekend” tends to be a lot like chemistry’s “recruitment weekend.” With this in mind, the interview format tends to vary for different institutions based upon what they hope to gain from interviewing you. Some schools merely want to answer your questions about the institution or to turn you onto their research. Other schools may still have some pruning to do from the group of students selected for interviews and the interviewing professor will ask questions about your research experience and interests. In either case, these interviews are somewhat more formal than the chemistry faculty meetings, if only because they are one-on-one and usually conducted with the purpose of determining whether you are emotionally stable and can interact with humans in a socially acceptable manner. Some advice on interviews: You need to know very little about the people who interview you; they’ll fill you in. Go prepared knowing YOUR research. Be prepared to talk about whatever you put down on your personal statement and CV.

Graduate students in biology programs often participate in a number of rotations before settling in a lab for their thesis work. This allows students to experience a couple of labs in order to determine whether or not they want to do a specific form of research, they get along with the PI, or fit in with the other people in the lab. It can also lengthen the graduate school experience somewhat from what a student in a chemistry program would experience. Despite the advantage biology students experience in choosing a lab that is a good fit, the same advice applies here as addressed to chemistry students: pick institutions that have many professors you’re interested in working with, not just one.

### *Biochemistry, Biological Chemistry, Chemical Biology, Biophysics...*

Students interested in interdisciplinary programs face a dilemma when having to choose between biology or chemistry departments. However, many schools do offer umbrella programs that boast of offering greater flexibility between cellular and molecular biology, biochemistry, biological chemistry, and biophysics. Integrated programs encourage good communication between faculty members and allow students greater latitude in choosing among otherwise disparate labs.

Usually these integrated programs are within biology departments. There are, however, many opportunities to participate in interdisciplinary science through chemistry departments. An important thing for biological chemistry students to do is to consider whether they want pursue biological or chemical questions in their graduate research. The difference may only become clear to you once you talk to and visit professors in each environment.

Determining the department through which you enroll may be an issue you explore during the interview process; try applying through different departments to get a sense of the subtly different experiences they offer when you visit. As many schools allow biochemistry students access to both chemistry and biology labs, you may find that the only differences that matter are in the structure of the program. For example, you may or may not want to do rotations, or the course requirements and the funding might be allocated differently in the two programs.

## **Timeline for Graduate School Application Process**

### Summer

- Take general GRE.
- Start surfing the web to compare schools and create list of 10 or so schools you’re interested in. Of these ten, start looking closely at the available information and pare it down to the ones you’ll apply to (recommended 3-8).
- Start getting an idea of the requirements and due dates of the various applications (they should be somewhat similar). You probably won’t be able to start an online application yet, but that doesn’t mean you can’t prepare yourself before school starts.
- Consider constructing your CV if you don’t already have one, or primping the one you already have. Starting on the personal statement isn’t a bad idea, either, considering that most schools provide the prompts online separate from the application.

### September

- Narrow the list if you haven’t already to the schools to which you’re seriously thinking about applying. Start asking profs and grads questions about these schools. Send e-mails to PI’s in which you’re interested to get a better feel for a school.
- You should be able to start online applications now. Maybe think about that personal statement?

- Register for the subject GREs if necessary, take the general GRE if you haven't yet.
- Start thinking about who's going to write your recommendation letters.

#### October

- Start your online applications if you haven't yet.
- Start writing your personal statement(s) and finish your CV. If you do this early enough, maybe a professor will proofread it for you.
- Ask professors to write you recommendations—this is the best time because they'll have time to attend to it before the November rush. Giving them a copy of your CV and maybe your personal statement is a courteous gesture because then they can write a good letter without asking you too many questions about your research, etc.
- Start requesting transcripts for you applications.

#### November

- Start completing online applications and other requirements.
- Definitely ask your profs for recommendation letters; after Thanksgiving they'll be stressed out and their letters may start to reflect their frustration with you.

#### December-January

Many schools' applications are due in December. Some are due the first week of January.

#### February-March

You'll start getting acceptance letters (chemistry) or invites for interviews (biology) around January and early February. Recruitment weekends start around the end of February. Beware: some will overlap. You should plan these weekends out carefully.

#### April

Your final decision is due.

### Students' Experiences and Advice

The following blurbs are intended to give you an idea of what the seniors have done before you. If you're interested getting more in-depth advice, consider coming to this year's graduate school panel, which will be held late spring. Some of the students below can be contacted; please check with your advisor or the BCSEPC for advice on doing this.

#### **Class of 2006**

Yanika: make list of schools that have research in what you're somewhat interested in. E-mail professors. Make sure you're interested in three professors at each school. Four is better. Most applications are online with supplemental components. E-mail CV to professors when they're writing you recommendations.

Eric: was looking for pharmacology, looked for specific places. Did not e-mail professors or visit any schools. Only applied to a handful of schools and chose Mayo Clinic, where he spent a summer doing research.

Desire: only applied to five schools. It was very difficult for him to get accepted—being an international student is very tough... there's lots of competition because of funding. Once you're accepted, they're really interested in you. If you are accepted, you will be loved. Interviews (once granted) tend to be fun. U of Iowa gave Desire and Eric an extra \$3,000 a year. Many of Desire's choices were based on reputation because he plans on need to bank on their names in the future—political future goals, needs recognized name. His interests were originally almost MD and now he wants to pursue a very clinical PhD.

Amber: choosing programs is very difficult at this stage. Choose a program based on who's involved (check out the professors and PI's—what research they are doing). You apply to a program rather than to a PI. Once you're in, you can flip-flop between departments, even schools (esp. Cal Bay Area and East Coast schools).

Rachel: I knew what I was interested in, read, and found schools with professors I was interested in. Pick a place you're willing to spend 5 years of your life. Look at people: students, faculty, will be your social life. Make it a happy time.

Thomas: eliminated lots of schools that could have been great based on location. Location matters—wanted to be able to live in area outside institution: east coast, big cities. Strong interest in structural biology, biophysics—applied to specific programs in these topics because he thought that was exactly what he wanted to do. Interviews changed his mind—interdisciplinary/integrated programs relieve this problem, and he's thankful he applied to them as well. When interviewing, you'll encounter many different professors. You may think you know whom you want to work with, but pay attention to interviews with other professor you don't know. Some of his best interviews were with people he didn't expect to talk to, or to be interested in. Made his final decision after interviews a tried to approach interviews without thinking he already knew where he was going.

Ivana: had another person's choice to consider (boyfriend). Consider where you're going to be happy and who you're going to be happy with. We looked for schools separately at first and didn't have any schools in common—we had to change that. He's immunology and I'm pharmacology, so we decided on interdisciplinary programs. Didn't talk to many professors, didn't find it helpful—advice was general. Many institutions didn't accept international students, didn't have much information for intl. students. You make a list in your mind: top, so-so, and safety schools. Visit the schools and see the atmospheres. Everyone has had the experience of visiting a top ten school and finding out it sucks. If you don't know what you want to do, look for umbrella programs.

### **Class of 2007**

Amelia Randich: biological chemistry major, now in the Biochemistry and Molecular Biophysics program at the University of Chicago. Applied to four integrative programs, two biology programs and one chemistry program. Did one personal statement for all applications over the summer, which really helped her not to stress out during the school year. Took the chemistry subject GRE and now wishes she hadn't wasted her time on it.

Ryan Lee: chemistry major, now in the Biochemistry and Molecular Biology program at the Mayo Clinic. Applied to fourteen different programs and had only three total acceptances because he is an international student. Took subject test April because he wanted high GRE scores.

Britt Flaherty: biological chemistry major, now in the Molecular Biology program at UC San Diego. Applied to seven programs. Took the biology subject GRE in August and found it to be the worst test ever in her life because much of the ecology on it is not covered in 252. She sent in all of her applications by Thanksgiving.

Laura Shannon: Biology/Anthropology major, now at UW- Madison. Applied to five programs.

Jaimie Adelson: neuroscience major, now in neuroscience program at Stanford. Applied only to seven neuroscience programs. Is deferring for a year, which was hard to do because schools don't like to accept students who are deferring. She got around this by not mentioning that she was going to defer during the application process. Studied consistently for the general GRE--if you are unhappy with what you did, it is worth taking it. Take it early enough but remember that GREs expire after 5 years and MCATs after 3 years.

Jason Cook: biology major, now in the MD/PhD program in structural biology at Mt. Sinai. Only applied to Mt. Sinai. For MD/PhD you need to take the MCAT only because you go through the medical program. Don't forget the HPAC committee letter, either.

*If you have any questions or concerns you think should be addressed in the next FAQ or at the graduate panel, please submit them to [bcsepc@grinnell.edu](mailto:bcsepc@grinnell.edu). If you are a senior chemistry, biology, or biological chemistry major going through the application process and would like to share your experiences at the panel or on this publication, please contact the BCSEPC.*