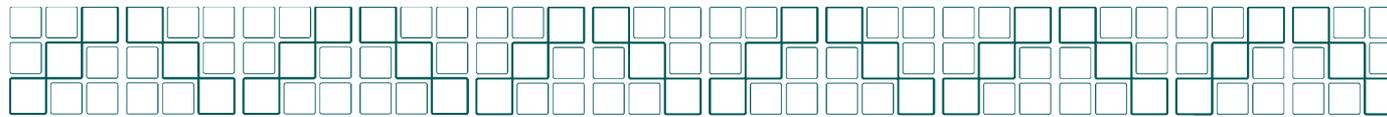

Everything You Need to Know to Get into Grad School

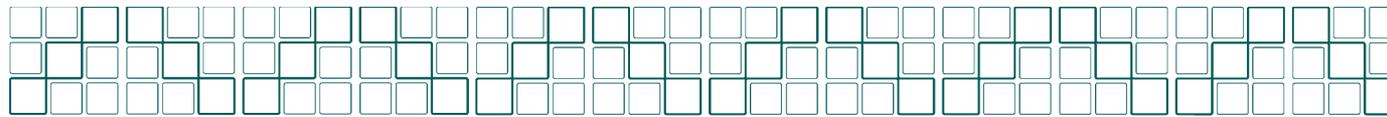
Pat Sokolove, PhD
Deputy Director, OITE
sokolovp@mail.nih.gov





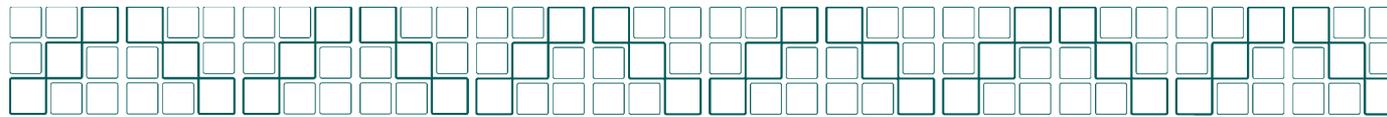
“The ideal student, seen through the eyes of graduate faculty, is gifted and creative, very bright and extremely motivated to learn, perfectly suited to the program, eager to actively pursue the lines of inquiry valued by the faculty, pleasant, responsible, and devoid of serious personal problems.”

Appleby, D. C., and Appleby, K.M., (2006) *Teaching of Psychology*, **33**: 19-24. Kisses of Death in the Graduate School Application Process



Kisses of Death

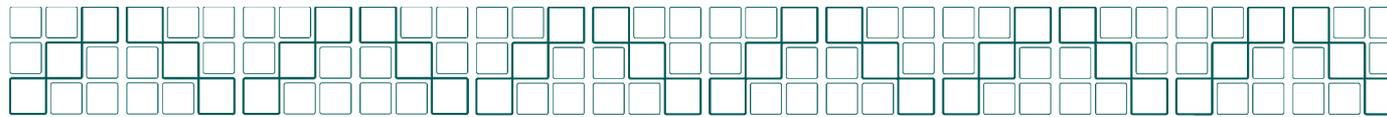
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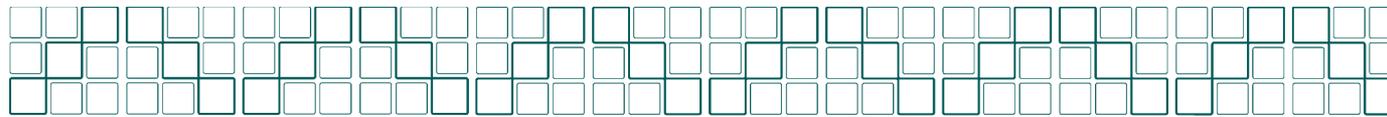
Game Plan

- Choosing and applying to a grad school/grad program
 - What do I want the Admissions Committee to Know?
 - What is the Admissions Committee Looking for?
- Writing a personal statement
- [Interviewing will be the topic of a later workshop.]

The key to all of these is **KNOWING YOURSELF.**

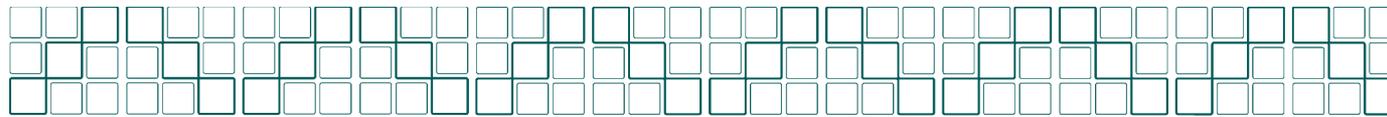


Choosing and Applying to a Grad School/Grad Program



Critical First Questions

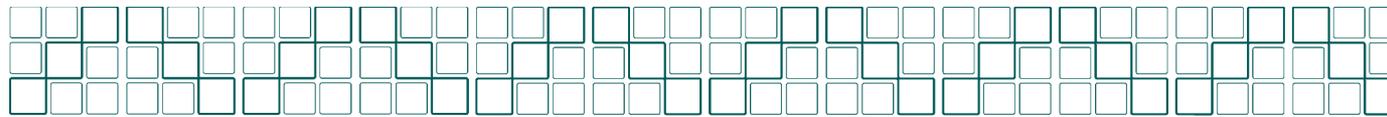
- Why do I want to go to graduate school?
- Where do I see myself in the future?
- What kind of graduate experience will I need to reach these goals?



Know the Facts

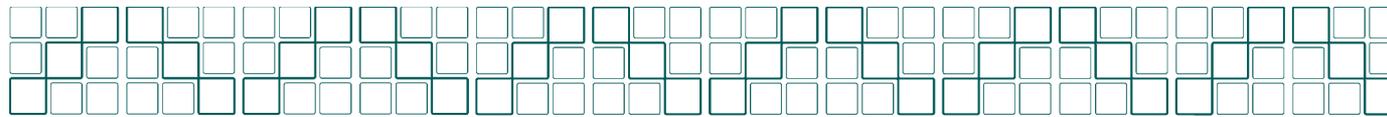
- “The proportion of PhDs that move into tenured or tenure-track faculty positions has declined from ~34% in 1993 to ~25% now.”
- “The percentages of biomedical PhDs in industry and government have remained relatively constant. The categories that have seen growth are science-related occupations that do not involve the conduct of research “
- “Despite these changes, graduate training continues to be aimed almost exclusively at preparing people for academic research positions.”

Full report at <http://acd.od.nih.gov/bwf.htm>



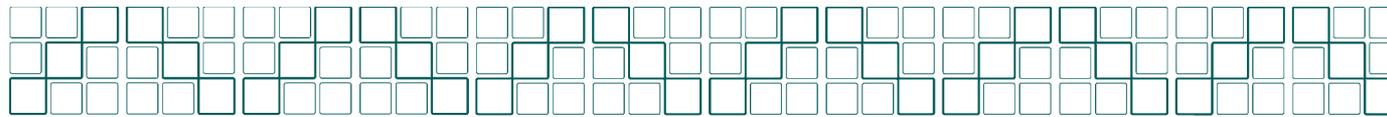
Reality Check

“Improving Graduate Education to Support a Branching Career Pipeline: Recommendations Based on a Survey of Doctoral Students in the Basic Biomedical Sciences” (2011) Fuhrmann, C.N., Halme, D.G., O’Sullivan, P.S., and Lindstaedt, B., *CBE – Life Sciences Education* **10**: 239 – 249.



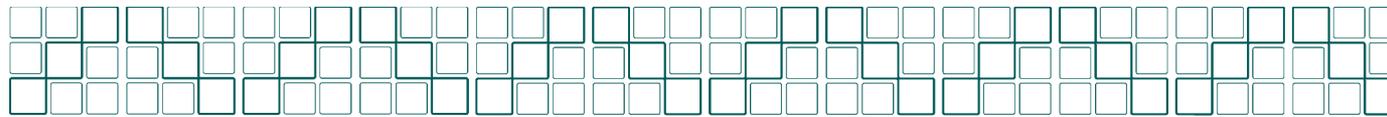
Am I Ready?

- Academic preparation
- Research skills
- Problem solving skills
- Ability to read and comprehend research papers*
- Communication skills - verbal and written*
- Time & stress management skills
- Interpersonal skills
- Maturity & willingness to sacrifice
- Finances



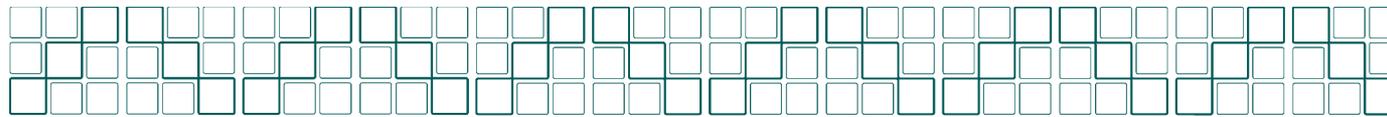
Taking Time To Get Ready

- Work – in a job relevant to your career goals
 - Be sure that your boss will support your scientific and professional development
 - Consider working somewhere you might like to go to school
- Take appropriate classes
 - Choices depend on your undergraduate record
 - Classes without solid research won't be as useful



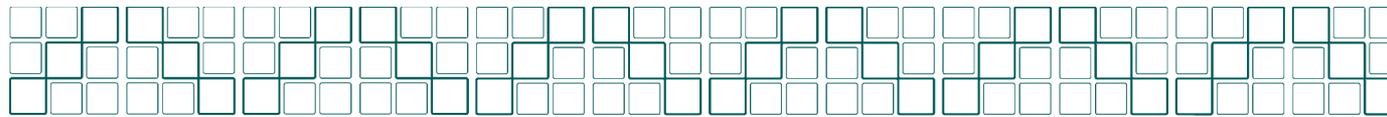
What Type of Program?

- PhD and other doctoral programs
 - Umbrella
 - Department-based
- MD/PhD
 - MSTP
 - Non-MSTP
- MPH
 - With a variety of sub-disciplines
 - <http://www.aspph.org/discover/>
- Professional Science Masters
 - For careers at the interface of science and management
 - <http://www.sciencemasters.com/>



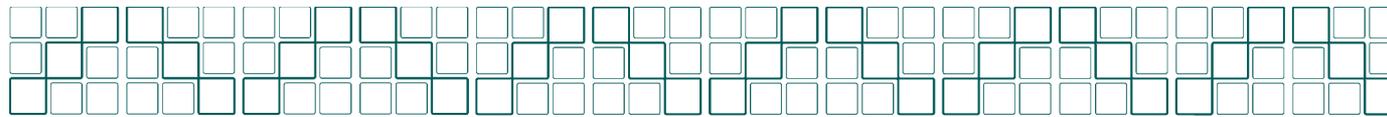
To Learn about Schools and Programs

- Talk with your mentors and friends.
- Use the NIH Alumni Database.
- **Attend the NIH Graduate & Professional School Fair.**
- Figure out where people whose work you respect are located.
- Surf the Web.
- Go to undergraduate meetings.
- Contact program directors, administrators, and students at schools that catch your interest.
- Arrange a visit if possible (but only go if you are prepared)
- Do NOT use *US News & World Reports* rankings!



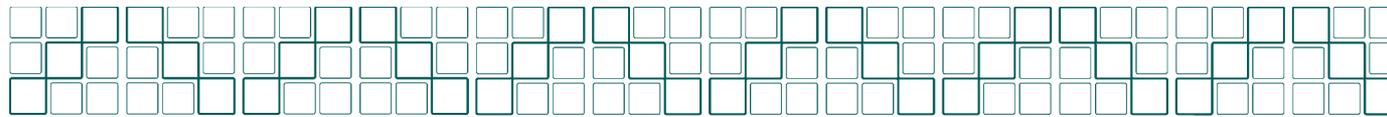
Things To Consider

- Structure of the program
 - Rotations and required coursework
 - Mentor selection process
 - Teaching requirements
 - Qualifying exams
 - Stipends and other compensation
- Teaching opportunities and pedagogy training
- Career and professional development resources
- **Diversity** of the students, faculty, and broader communities
- Career goals and **outcomes** of past and current students



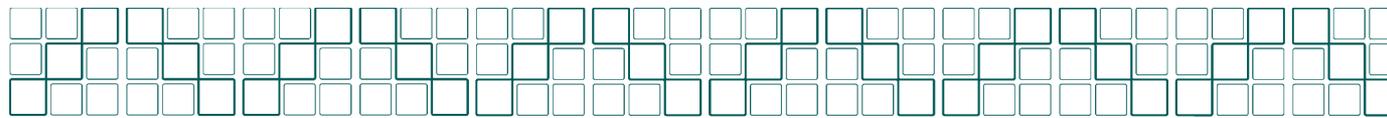
Things To Consider II

- Program climate, morale, and student satisfaction
- Program focus on teaching, mentoring, and career development of graduate students
 - Coordinated programs to help you develop professional skills
 - Innovative internship and training opportunities
 - Strong leadership and oversight of your graduate experience
 - Attention to controlling time to degree
- Geography and cost of living
 - Distance from family
 - Needs of partner and kids
 - Access to things you enjoy



Evaluating the Quality of the Department and Institution

- Funding record
 - RO1: <http://report.nih.gov/award/index.cfm>
 - Training grants to the institution & individual students
- Publication record
 - Quality, not just numbers
 - Students doing the writing and publishing as first author
- Awards
 - Students
 - Faculty

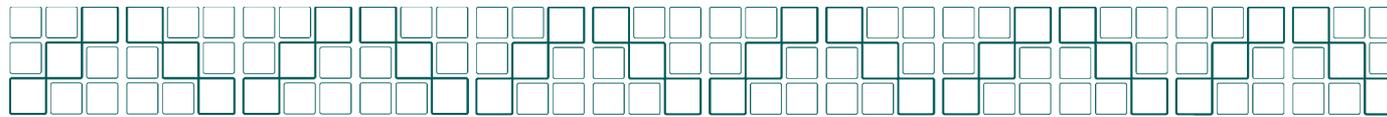


Institutional Training Grants (T32/IGERT/ BEST AWARDS)

- Grants to a university to develop or enhance predoctoral [or postdoctoral research] training opportunities in biomedical or behavioral research
- For programmatic information:
 - T32: <http://www.nigms.nih.gov/Training/InstGrantLists.htm>
 - IGERT: <http://www.igert.org/>
 - BEST: <https://commonfund.nih.gov/workforce/fundedresearch>

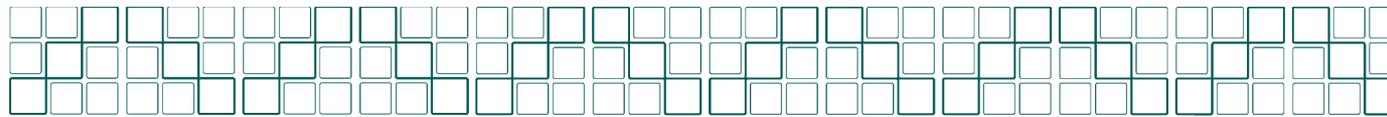
BEST = Broadening Experiences in Scientific Training

IGERT = Integrative Graduate Education and Research Traineeship



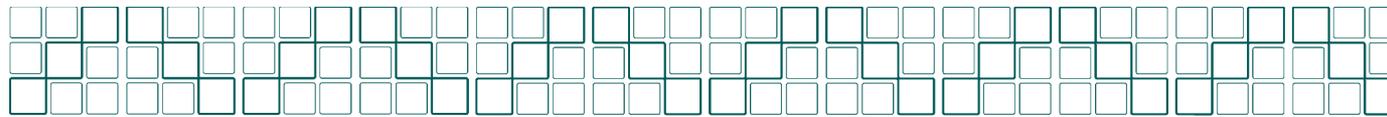
Drilling Down To Your Scientific Interests

- Scientific resources
 - Quality of the research space
 - Core facilities
 - Access to important patient populations
 - Possibility of doing fieldwork
 - Access to experts in technologies important to you
- The number of potential mentors doing what YOU want to do?
 - You will want to know about their funding, publication record, tenure status, **and** mentoring history
 - Remember institutions and departments have strengths in some research areas and not in others



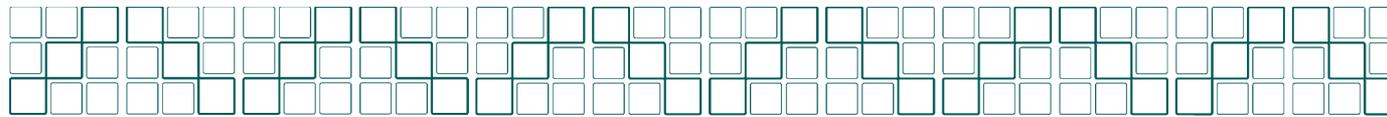
Remember To Consider:

- Reputation of the school AND program
- Specific research areas that interest you
- Institutional/departmental culture
- How mentors are selected
- How current students are progressing
- Teaching opportunities
- Opportunities for professional & career development
- Appreciation for diversity
- The geographic area
- The cost of living



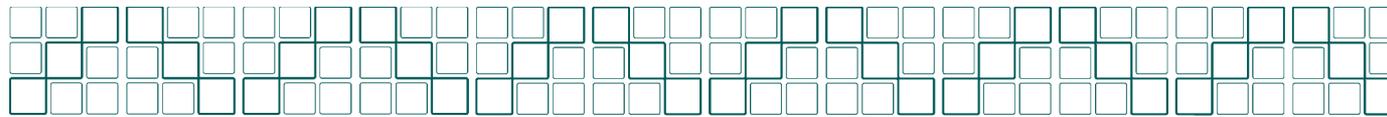
Getting Ready to Apply/Write/Interview

- What sets me apart from other applicants?
- How did I learn about this field?
- Why am I interested in this field?
- What experiences have stimulated and enhanced my interest?
- What skills or personal characteristics do I possess that would enhance my chances for success?
- What are my biggest accomplishments? (remember humility!)
- What are my career aspirations?
- Why THIS school and program? Do I have any connections?
- What will I be doing between now and next fall?
- Have I overcome relevant obstacles in my life?
- Are there any gaps or discrepancies in my academic record?



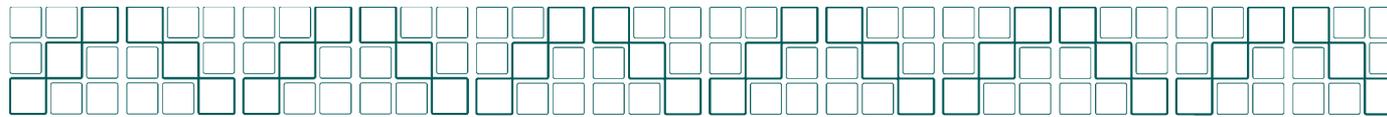
Desirable Characteristics*

- Creativity
- Problem solving ability
- Tenacity
- Ability to work in a team
- Independence
- Self-motivation
- Good communication skills
- Project management skills
- Relevant background knowledge
- Flexibility
- A positive attitude
- Resilience
- Organizational skills
- Attention to detail
- Ability to see the big picture
- Ability to prioritize
- Time management skills
- **Appreciation for diversity**
- Good interpersonal skills
- Maturity



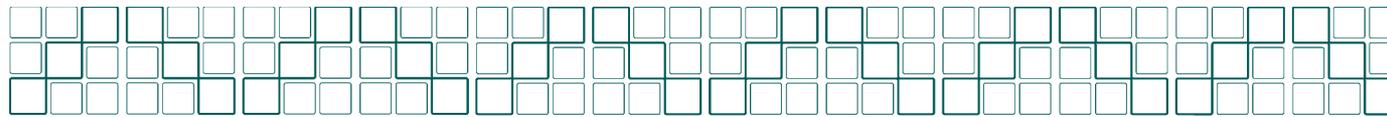
What do I want the Admissions
Committee to Know?

What Is an Admissions Committee
Looking For?



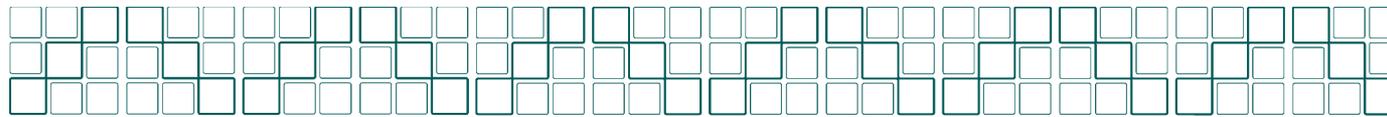
The Admissions Committee

- 5 to 15 members depending on the size of the program
- Chaired by the Program Director or the Director of Admissions
- Applications are read in advance and discussed at a meeting.
- Some, but not all, use rolling admissions.
- Program Directors often have some discretion.



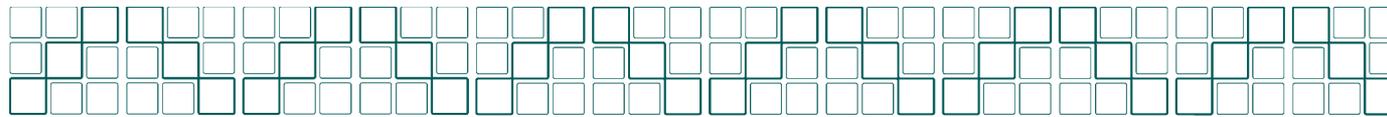
What They Evaluate

- Academic record
- Standardized test scores
- Research experience
- Personal statement*
- Recommendation letters



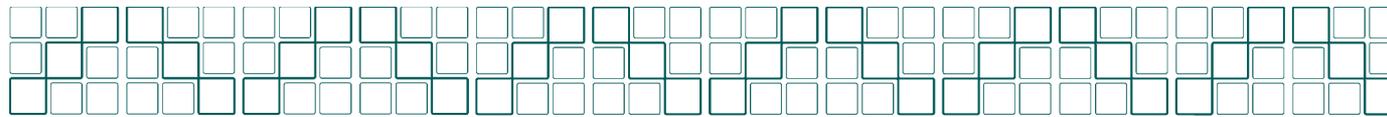
What Is An Admissions Committee Looking For?

- Someone who will succeed in graduate school*
 - What do you know about doing research?
 - How effectively can you talk about science?
 - What do you know about the program?
 - How sophisticated are you about graduate school?
 - Do you have **characteristics that favor success**?
- Someone who will be a good fit for the school



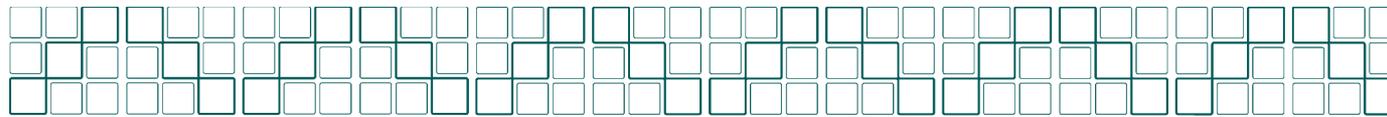
Letters of Recommendation

- Three or four are required
- Typically submitted online
- From mentors and teachers who **KNOW YOU WELL**
 - Not from personal/family friends
 - Not from non-educational employers unless the work is relevant
- Asking:
 - Request a letter far in advance.
 - Provide a list of schools and programs you are applying to.
 - Provide an updated CV.

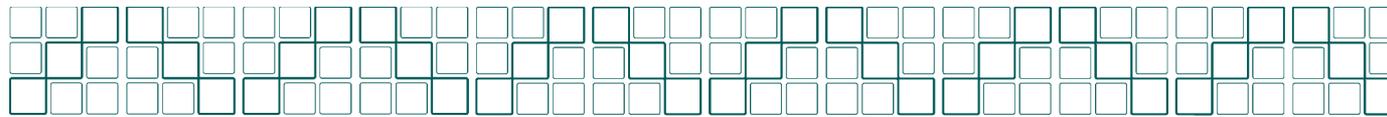


Consider

- The goal of your written application is to get an interview - even if you have good grades, take this step seriously.
- Missing deadlines and asking for an extension is a poor way to make a good impression.
- You can apply to too many OR too few schools.
- Get advice along the way.
- You should have a mix of reach schools and safe schools.
- Waiting until the last minutes adds tremendous stress to an already stressful process.

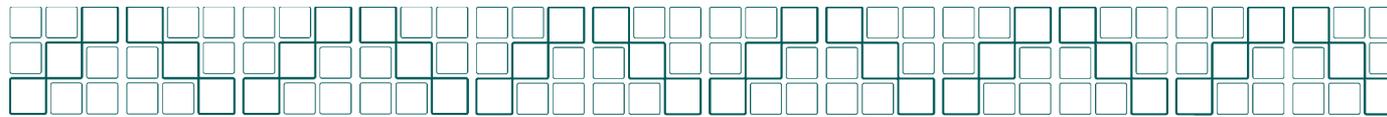


Writing Your Personal Statement



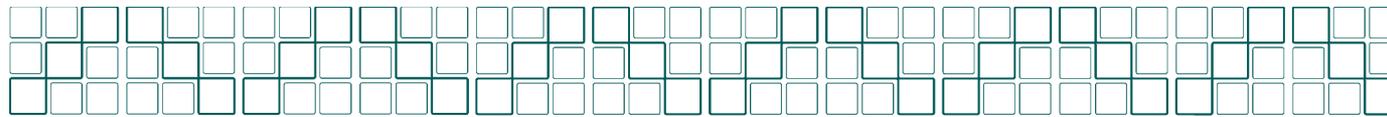
Why Does a Graduate School Ask for a Personal Statement?

- To try to determine if you are likely to succeed
- To see if you will be a good fit for the school
- To get to know you, not your record
- To look for insights into the sophistication of your thinking
- To determine whether you can organize information
- To see if you can think logically
- To see if you can write well



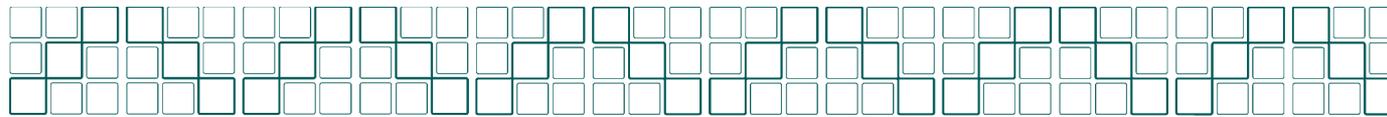
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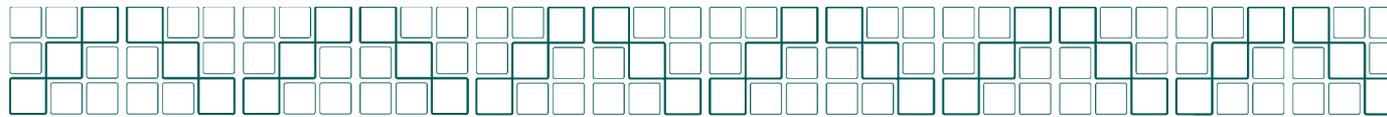
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Kisses of Death

- Damaging personal statements
- Harmful letters of recommendation
- Lack of program information
- Poor writing skills
- Misfired attempts to impress



The General Structure

~~■ The “hook”*~~

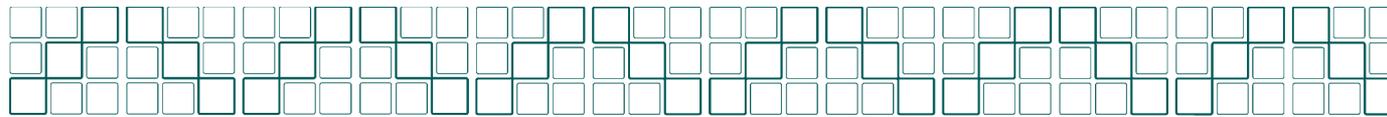
- Introduce yourself.
- Explain why you want to go to graduate school.

■ The substance

- Explain your science.
- Highlight other relevant experiences.

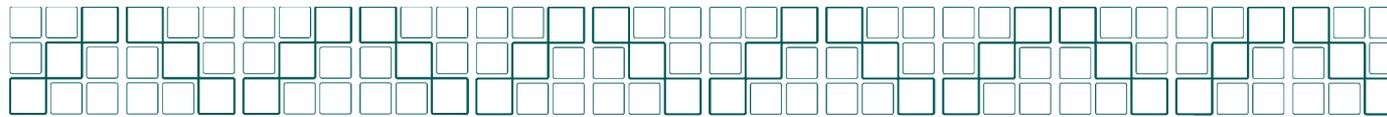
■ The future

- Explain “why this program”
- Briefly describe your career goals.



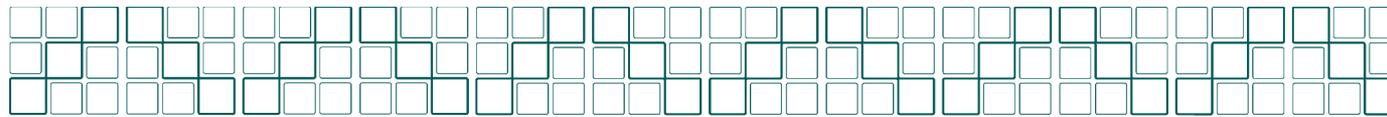
The General Structure

- The introduction*
 - Introduce yourself.
 - Explain why you want to go to graduate school.
- The substance
 - Explain your science.
 - Highlight other relevant experiences.
- The future
 - Explain “why this program”
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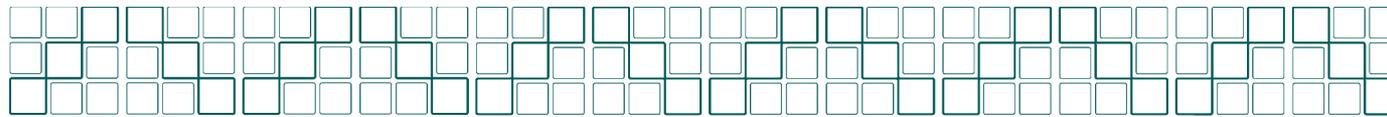
Explaining Your Science

- Include your IC and the name of your PI or mentor
- Present the big picture – the overall goal of your group or lab
- Describe your project
 - What specific question are you trying to answer?
 - What techniques are you using?
- Present your results, briefly
- Indicate what your results mean and/or possible future research directions



General Thoughts

- Answer the questions that are asked
- Tell a story – but content over style
- Analyze – don't just list
- Give concrete examples
- Share credit when appropriate
- Personalize each statement to the school and/or program
- Be concise rather than long-winded
- Make your statement easy for committee members to read

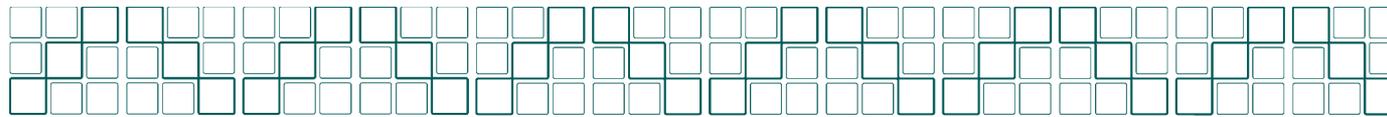


Statement of Purpose

Describe in your statement of purpose:

- Your reasons for applying to the proposed program at Stanford and your preparation for this field of study
- Your research and study interests
- Future career plans and other aspects of your background and interests which may aid the admissions committee in evaluating your aptitude and motivation for graduate study

Your statement should not exceed two pages in length (single spaced).

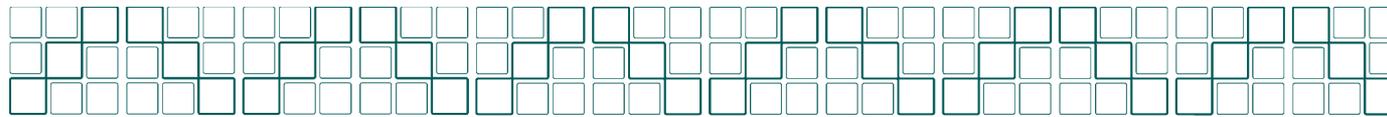


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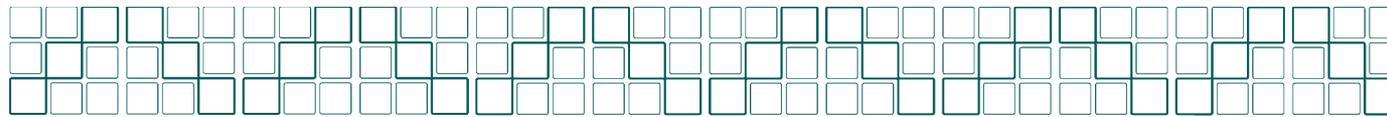
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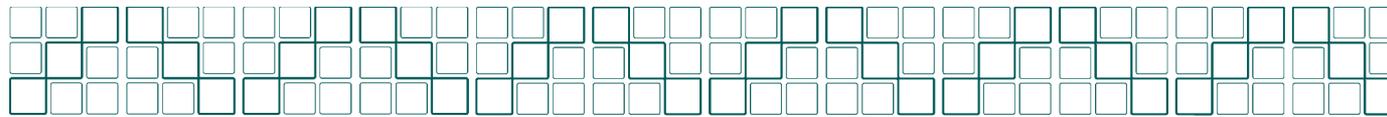
Personal History Statement

Please describe how your personal background informs your decision to pursue a graduate degree. Please include information on how you have overcome barriers to access opportunities in higher education, evidence of how you came to understand the barriers faced by others, evidence of your academic service to advance equitable access to higher education for women, racial minorities and individuals from other groups that have been historically underrepresented in higher education, evidence of your research focusing on underserved populations or related issues of inequality, OR evidence of your leadership among such groups.

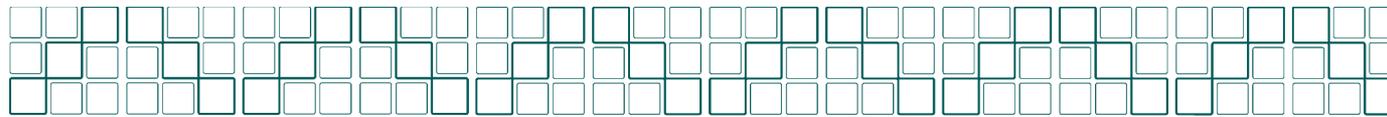


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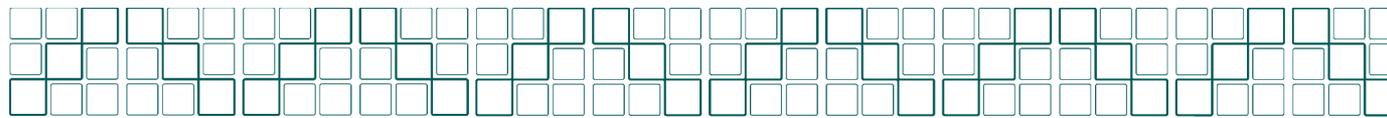


Five graduate level courses are required for the PhD. Formal course work is generally finished in the first twelve to eighteen months, permitting students to begin full-time research early in their career. Courses are selected according to the special interests and needs of each student. Penn State's chemistry department is noteworthy in its effort to break down unnecessary barriers; hence there are no formal divisions between chemistry areas. Lists of suggested courses are provided for concentration in specific areas of chemistry (analytical, biological, chemical physics, inorganic materials, organometallic, organic, physical, polymer, surface, theoretical). Students are encouraged to begin research as soon as they are ready and to choose courses that strengthen their research capabilities.



General Thoughts

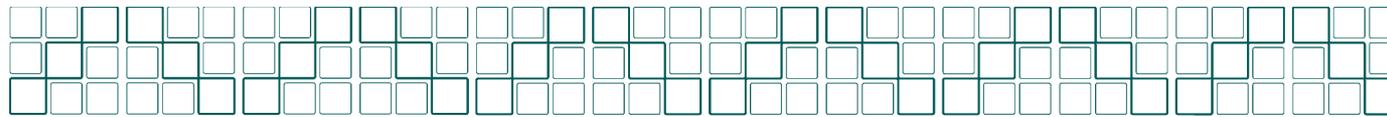
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- **Make your statement easy for committee members to read**



Dealing with the Elephant in the Room - I

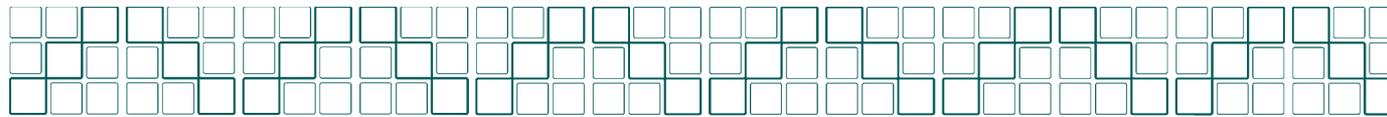
Attempt this only if the problem is

- Sympathetic
- In the past
- Resolved
- Unlikely to come back



Dealing with the Elephant in the Room - II

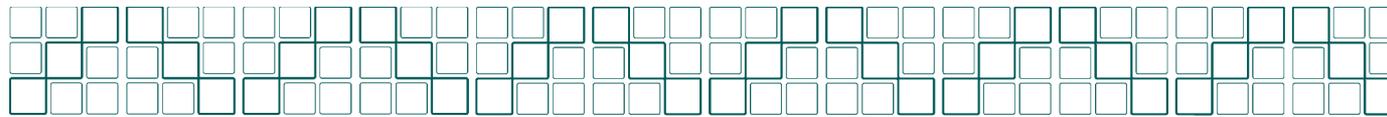
- Use either your personal statement or an attached letter to the Graduate Program Director
- Avoid making excuses or assigning blame
- Point out more recent evidence showing that you are a good candidate
 - Success in graduate level courses
 - Steady improvement in your GPA
 - Success in the lab
- Offer to discuss this further with the Program Director



Polish Your Draft

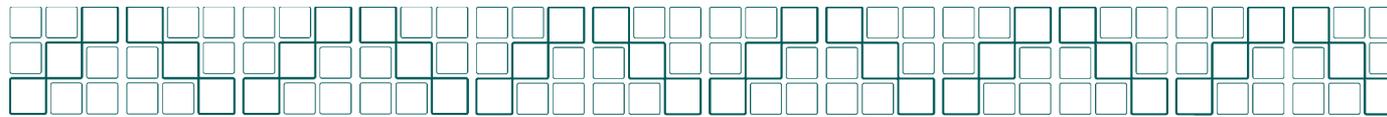
After you have edited, have your statement read by

- Friends and non-scientists for general writing and flow
- Your PI, your IC Training Director, OITE staff, undergraduate teachers for content and style
- Someone with experience on an admissions committee



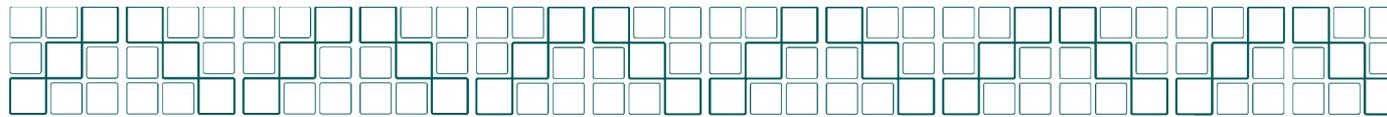
Common Mistakes

- Not enough intellectual depth
- Too much humor (or drama)
- Too long – too short
- Failure to answer the question(s) asked
- Failure to explain a weakness in your application
- Trying to impress the committee with big words
- Poorly written, written in the passive voice, or wordy
- Too many (or too few) transition words
- Re-stating the obvious



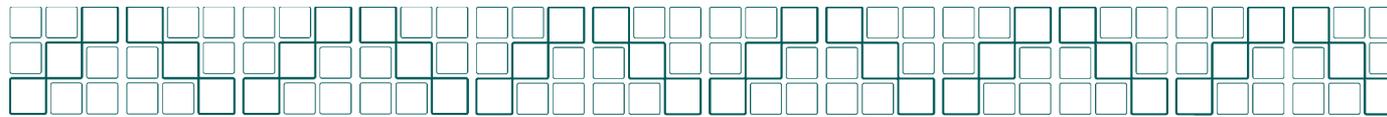
The Penn State Dance Marathon was great fun and a huge success; in the aftermath we were able to contribute \$25,000 to the fight against cancer.

I'm in a number of clubs that focus on servitude and improving the community around us.



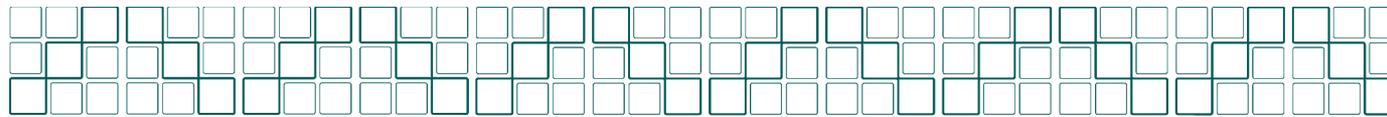
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aftermath: the period following a (usually) ruinous event



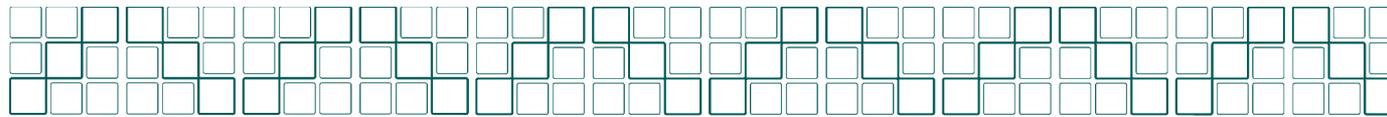
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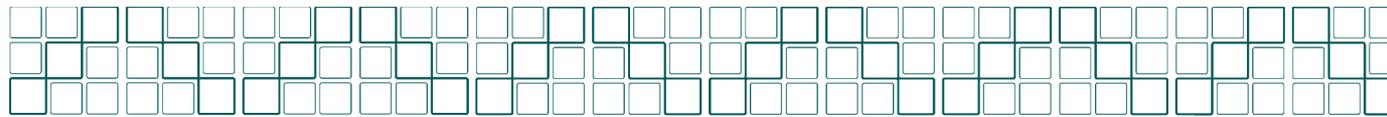
I' m in a number of clubs that focus on servitude and improving the community around us.

servitude: a condition in which one lacks liberty esp. to determine one' s course of action or way of life; a synonym for “slavery”



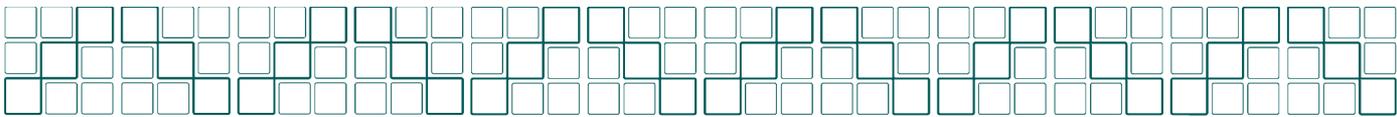
Common Mistakes

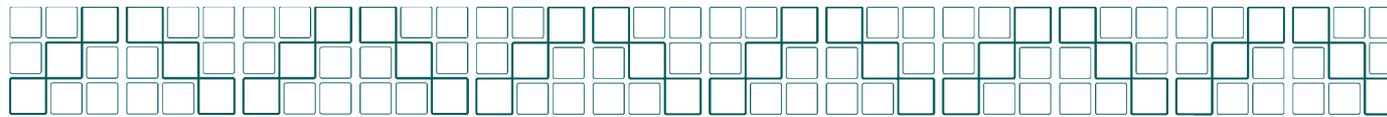
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- Re-stating the obvious



Things to Avoid

- Criticizing past professors (or anyone else)
- Bad-mouthing other graduate programs
- Expressing intolerant religious beliefs
- Sharing political beliefs
- Extended descriptions of mental anguish
- Arrogance
- Sexist language
- Too many adjectives: “wonderful”, “meaningful”
or adverbs: “terrifically”, “extraordinarily”
- Flowery language





Resources

- Attend the NIH Graduate & Professional School Fair.
- Watch NIH Career videos at www.training.nih.gov.
- GREAT Group Web site: www.aamc.org/phd.
- **Important** articles on PhD training in the 21st century:
 - http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2012_09_07/caredit.a1200100
 - <http://www.lifescied.org/content/10/3/239.full>
- Connect with us on LinkedIn (no Facebook requests please).
- Use the Alumni Database to find former postbacs at schools you are considering.