Get Into Graduate School and Build Cool Stuff

Celia M. Elliott
University of Illinois
cmelliot@uiuc.edu

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Your objective in writing a statement of purpose is to convince an admissions committee that the ~$150k they’re going to invest in you will be money well spent

- That you have the requisite skills, experience, and desire to succeed
- That you are excited about research
- That you have the discipline to persist when the going gets tough
An SOP should emphasize your research goals

Most committees base their decisions on their assessment of your
1. intellectual horsepower (GPA, GRE) and
2. research literacy (SOP, refs)

Use the SOP and your reference letters to make the case for your promising future as a researcher
Start by asking yourself questions
What have I learned in the last four years? about physics? about myself?
What do I enjoy doing? What do I do well?
What are my expectations? my dreams?
How can I show that I finish what I start?
How can I show that I’m creative?
How can I show that I have an aptitude for physics?
How can I show that I am different from everybody else who’s applying to this department?
Clearly state your short- and long-term career goals

I don’t want to make money. I just want to be wonderful.

Marilyn Monroe (1926–1962)

How will studying physics at this particular department prepare you to achieve those goals?
One size does not fit all

Requirements vary from department to department—READ the instructions

Map your strengths and interests to the individual department’s strengths

Show that you have investigated this particular program, found that it fits your interests and skills, and planned how you will succeed in it
Show that you’ve bothered to learn something about the department

Mention specific faculty members or research projects in which you’re interested

If the department has unique facilities, show you know about them and how learning to use them will prepare you to achieve your overall goals
Describe your areas of interest

I am interested in optical communications and networks. During my senior year, I worked with Professor Jim Eckstein, who is developing an all-optical frequency shifter that employs a microwave source phase-locked to the optical pulse repetition rate. I believe that the Applied and Engineering Physics Program at Cornell would offer an ideal environment for me to expand these interests. The work that Professor Clifford Pollack is doing on the interaction of ultrashort pulses with fiber optic devices is particularly intriguing.

Relate them to your experience and to the department you’re applying to
Give specific reasons for

Why you’re interested in a particular research area

Why you have chosen this particular university to apply to

Refer to past experiences that have shaped your thinking and prepared you for graduate study
Have your adviser review your SOP for physics accuracy

Don’t write *anything* about physics or your research that you do not **thoroughly** understand

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I’m not confused, I’m well mixed.

Robert Frost (1874 – 1964)
Be selective about personal details

An SOP is a sales document, not your memoirs; the adm. committee probably doesn’t really care about your first-grade science project or your trip to the Field Museum with the Girl Scouts.

BUT—too little is as bad as too much.

The points that you highlight should be relevant both to your career goals and to the interests of the department.
Set yourself apart from the crowd, but do it prudently and tastefully.

I never set out to be weird. It was always other people who called me weird.

Frank Zappa  (1940 – 1993)
Express yourself lucidly, elegantly, concisely*

*The graduate admissions committee who are slogging through 400 applications may not admit you, but they will forever remember your name with gratitude and affection

‡In a first draft, the appearance of these effects asymptotically approaches 0
Spelcheck the final draft...

You never get a second chance to make a good first impression.

Mom

…or take it to the demon editor for proofreading

Thanks to Lance Cooper for useful discussions. cme