Writing the research statement

Adapted from Paths to PhD | Stanford Psych

Preparing Your Statement

Your research statement needs to convincingly state three things about you:

- Research Interests: What do you want to do?

- Experience: How have you prepared to do it?

- Fit: Why is this lab/school the best place to do it?
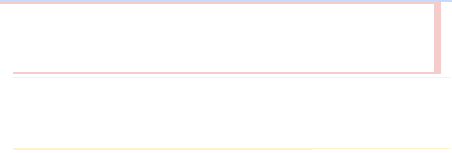
Structure of the research statement

Opening: What big question are you interested in?

Body: What are your experiences? How did these shape your interests and goals?

Closing: Why are you applying to this program?

Opening your research statement

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Opening your research statement

I am fascinated both by how individuals understand themselves and by the control they have over such understanding. More specifically, I am drawn to theoretically-interesting, intervention-based research that seeks to harness the power of the self and mindset in order to improve others' lives. My experience over the past two years exploring these topics with both Drs. ████████ and █████████████ has convinced me that Stanford's social psychology program is the ideal place to continue to advance my research program given its focus on using societally-beneficial lab and field studies to answer important social psychological questions.

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SATURDAY HOMEWORK

<u>Write down</u> your answers to these questions:

- What is the BIG question you're interested in?
- Why is it interesting?
- Based on your big question, think of one or two specific questions that you would be able to test.

Now start brainstorming your answers to these…

Research Interests

- What big ideas you're interested in and why?
- General domains in which you'd like to do research?
- Motivation for being a PhD student?
- Ideas for specific projects?

Experience

- What kind? / with who? / how much?
- Deep engagement with your prior research experience
- If applying to RA jobs: skills-gap analysis

Fit

- Fit between faculty at the school you're applying to and your research interests
- Fit between topics/principles the department cares about and things you're interested in (applied vs. basic science research, strong commitment to reproducibility, etc.)

Reflecting on your brainstorm

- Did you have any insights when doing this activity?
- What was useful about doing this?
- What are you feeling confused about or having trouble with?

To do

- Draft the opening of your research statement! It's just a few sentences and it's just a draft. Get it on paper.

- Then, continue clicking through to see concrete examples of how people discuss their research interests, experiences, and fit.

General Examples: Research, experience, fit

Experience: Research

As I investigated how we reason about the contents of others' minds, I found myself reflecting back to the very questions that had sparked my interest in the field: How do I know my mind and evaluate my actions? How do we attempt to show others and ourselves who we are? Motivated by these questions, I designed and led a study with ███████████ and ██████████ during my senior year. We asked how simply experiencing unintended positive or negative outcomes might drive subsequent sharing behavior. Young children(4-6 year-olds) shared more stickers following accidental harm, but only in the presence of the experimenter who had observed the harm. In other words, these children exhibited a reputation effect, utilizing sticker sharing as a way to make amends for or rectify the experimenter's prior observations of them. This work pushed me to think about self-representations beyond our own experiences with ourselves: we care enormously about updating other people's representations of us.

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Anchor each new experience in the "big idea" that you introduced in the opening of your personal statement.

Experience: Research

Think of this is a mini-abstract, which includes: research question, methods, main results, interpretation.

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Experience: Non-traditional paths

Six years ago I experienced a pivotal moment in the break room at Lowe's Home Improvement when a co-worker posed the question, "how do I remember who I am?" I sat at lunch that day mesmerized by the questions "how" and "why". I had been removed from college for 10 years due to financial limitations, but I remained curious. In order to pursue these questions, I entered ███████████ and applied to the Laboratory of Neurobiology of Learning and Memory, under the direction of ██████████, to learn about memory encoding at a neuronal level. In this lab, I was able to participate in a study from inception to publication using electrophysiological techniques (e.g., in vivo neural recording) to study retrosplenial cortex (RSC) projections to the hippocampus thought to play a role in spatial navigation. Prior studies had suggested a potential role for spatial navigation without providing direct neurophysiological evidence. Our results, published this year in Cerebral Cortex, found distinct neuron firing patterns for reward location and might explain navigational impairment in subjects with RSC damage.

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Simple but memorable! Note that the focus here is positive: not on the obstacle (why they left school), but rather on why they came back and what they did next.

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Within a few sentences, this person established a narrative arc: from deciding to return to college to publishing a paper.

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Experience: General tips

1. Focus on your research experiences.

2. Don't repeat your CV. When you list a skill (e.g., EEG), always put it in context of the scientific question you were trying to answer (e.g., measuring "readiness potentials" before a voluntary movement)

3. Use the parts of a paper to organize each research experience. You should describe the question (introduction), your approach (methods), one or two key findings (results), and your interpretation (discussion).

Research Interests & Fit

Though both my current projects study human learning and memory, my work with ████████ █ studies the gradual acquisition of stimulus-response associations via trial-and-error learning while my work with ████████████ studies the rapid formation of memories related to one specific episodic event. These processes are thought to engage distinct learning systems, and it seems reasonable to study them separately. For my graduate work, however, I would like to bring together these two research interests. I believe that in most real life scenarios, we tend to engage both systems concurrently. Much recent work on the interaction between multiple learning systems has come from Professor Daphna Shohamy's Learning Lab. Her lab has shown that the interaction can be both cooperative and competitive. I would be very interested in continuing this line of work with her at Columbia. I would be interested in investigating how the brain facilitates communication between the two systems to allow efficient cooperation, as well as how the brain arbitrates between them when they are in conflict. I suspect that the control mechanisms that modulate the interaction between learning systems are influenced by both bottom-up factors like stimulus properties as well as top-down factors like internal goals

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There is a clear transition between what this person has worked on before and what they want to do next.

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Research Interests & Fit

Nice balance between one broad research interest and one specific, testable hypothesis.

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This person did their homework! They've clearly read papers by this professor and taken away one big idea from them.

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Research interests: General tips

1. Finding the right scope: As a rule of thumb, focus on one BIG question and at least 1–2 specific, testable questions.

2. Connect your future interests to your past experiences: Your reader should be convinced not only that you have interesting research ideas, but also that you're qualified to carry them out.

3. Connect your research interests to those of potential faculty mentors: If you're seriously thinking of working with someone, read their papers and think critically about their ideas. Emphasize the aspects of your research interests that best connect to theirs.

Fit: General Tips

1. Identify a gap: What need would going to graduate school fulfill? What questions or approaches do you want to learn from your potential advisors?

2. Be specific: Emphasize resources, theoretical approaches, methodologies, facilities, etc., that are unique to the program you are applying to. Reaching out to current graduate students might help you find these.

Writing the research statement: Takeaways

1. Your statement doesn't have to be beautiful, but it does have to be clear.

2. Make sure that your statement answers the following questions throughout:
   a. Research interests: What do you want to do?
   b. Experience: Why are you the person to do it?
   c. Fit: Why is the department you're applying to the place to do it?

Example:
Talking about personal experiences

Variant: Talking about personal experiences

(1/3)

With a 96% Latino population, the city of ██████ is situated on the southern Texas-Mexico border. My upbringing there sheltered me from blatant signs of structural inequality, such as the national shortage of people of color in high-status occupations. I affectionately call this effect 'the border town bubble.' I visited a Latino pediatrician, watched a Latino congressman represent my district on television, and lived down the street from a predominantly Latino college. I knew only superficially that I was part of a minority group, never feeling constrained by my Mexican American status.

Variant: Talking about personal experiences

(2/3)

However, during my first year in college, I quickly internalized what it meant to be an underrepresented minority. With a 15% Latino population, ███████ presented a shift in my social environment. I have had two Latino, one Black, and twenty-seven White professors. Role models from my own ethnic group were scant, and I faced unintentional discrimination from my peers as a result of cultural differences and disparities in cultural capital. I call this 'the wake-up call.' Although previously blind to it, I learned that life in the U.S. is systematically different for underrepresented minority groups.

Variant: Talking about personal experiences

(3/3)
My wake-up call led me to consider questions about minority status, social development, and inequality. How do children develop identity and form stereotypes? How do these stereotypes perpetuate social disparities? Had I been exposed to racial/ethnic disparities in the U.S., would I have pursued undergraduate education at an elite university? These questions, along with my goal of increasing the number of Latina scholars at research universities, guide my pursuit of a PhD in social psychology with a focus on social development at Stanford University.

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Play with scale: use the small details of your life to make your point concrete, but place your experience in a larger context.
Use jargon sparingly and strategically ("structural inequality").

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Foreshadow your research interests.

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Give your reader this "aha" moment. Your personal experience needs to connect clearly to your goals as a researcher.

Example:
Talking about coursework

Variant: Coursework

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> **Warning:**
> Avoid listing classes (that's what the transcript is for)!
> Talk about specific classes when:
> 1. You've gained a special skill that you can apply to research (e.g., programming classes); even then, be very choosy.
> 2. You're very excited about one big idea that relates to your goals as a researcher.

Variant: Coursework

Under the leadership of ██████████████████, the small handful of students (from undergrad to postdoc and two emeriti) and I ascended high into the ivory tower, erecting elegant logical frameworks of mathematics. Then, almost suddenly, everything fell to the ground. In 1931, Kurt Gödel reached a damning height of self-referential elegance in his incompleteness theorems. Gödel's work unraveled, from the inside, the pristine universes of the late nineteenth and early twentieth century mathematical logicians. We spent a semester picking up the pieces, debating implications for the strenuously tested world of logic. The theoretical damage was done though. These beautiful worlds of formalism and exactitude were imperfect and provably so. Around the same time, I was introduced to the concept of the brain as a computational organ. If mathematics wasn't the consistent and complete framework in which to understand the universe, what was it? Could it be a reflection of the universe inside?

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> Show the readers how you think, not just what
> you've done. Focus on one idea and convey why
> you're excited about it.

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At the end, always relate this back to the three main questions (here, research interests).

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