Tips for Your

RESEARCH STATEMENT / PERSONAL STATEMENT

Undergraduate Research & Inquiry Collaborative

A research statement / personal statement tells about yourself, your research interests, background, and why you are a good fit for the research opportunity

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It Includes:

- An explanation of why the program is a good fit for your interests
- Positive tone, active voice, and first person (“I” not “we”)
- Concrete examples and stories. Be clear and concise
- Specific details about outcomes/achievements. Brag a little!
- If there are specific prompts, address and emphasize them directly

Format:

- Typically in an essay style format
- 1 - 2 pages long (unless otherwise indicated)
- Proofread! Proofread! Proofread! And have a friend/mentor review your draft

A GENERAL RESEARCH STATEMENT FORMAT

Introduction:

- Introduce the reader to your research interests, major, and career goals
- Hook the readers in!

Body Paragraphs:

- Talk about your experiences. What have you completed and why do you think it's important for them know/what does the experiences tell them about you?
- Relate your experiences to your research interests
- Be specific about what YOU did on projects
- Share challenges you've faced and what it taught you
- Describe relevant activities/leadership experiences you have
- List Skills you have that you'll bring to them and what skills you want to learn and utilize more
- Explain what about the program excites you
- Explain why is the program a good fit for you
- State how this research will impact your future and goals

Conclusion

- Bring it all together into a final summary statement that reiterates the points you made above
- Give them one last reason why you are a good fit for the program

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RESOURCES

Undergraduate Research Ambassadors:

Need help creating or want feedback on your research statement? Meet 1:1 with an Undergraduate Research Ambassador in person or over Zoom to get support!

You can also email us at **undergradresearch@arizona.edu**

Think Tank Writing Center:

Want someone to review your research statement as a second set of eyes? The Writing Center tutor can give you recommendations on grammar, spelling, and the overall flow of your statement.

Writing Skills Improvement Program (WSIP):

WSIP offers Drop-In tutoring! This is a free service for UA undergraduate and graduate students. Students can meet with a WSIP professional tutor to receive focused feedback on a shorter sample of writing.

EXAMPLE PAGE 1

I can't quite recall when my **fascination with astrophysics** started. Perhaps it was when I was awestruck by the dazzling Gargantua black hole in the movie "Interstellar" and engulfed in my own black hole of imagination in the cinema. [...]

Throughout the journey from the tiniest particles to the greatest architecture of the universe, **I am perplexed by the question**: "How can a singular reality be dictated by both a deterministic theory of General Relativity and a probabilistic quantum world?" By **triple-majoring in Astronomy, Physics, and Mathematics**, I am comprehensively **prepared for Ph.D. studies and a lifelong career in High Energy Astrophysics and/or Cosmology research** to unveil the true nature of reality as both a theorist and an experimentalist. I really **hope to answer some of the greatest questions of Astrophysics**, including the real nature of dark matter and dark energy, [...].

My **general interests in the interface between theory and experiments in Astrophysics** have brought me to my **current research project about the gravitationally-lensed images of Kerr naked singularities** (KNSs), super-spinning gravitational singularities without an event horizon. The **main motivation** behind this project is [...] In this project, **I contributed to FADGE**, a vectorized differential geometry computation library in Python, and **adapted the library to perform numerical ray-tracing calculations of KNSs**. Then, **I ran FADGE on supercomputers and simulated gravitationally-lensed images of KNSs**. I also analytically study the shadow geometry of KNSs. **The primary challenge** was that KNSs are still not well-studied. I **spent a lot of time trying to understand the theory** behind the black hole shadow and **discussing it with my research mentors** so I could adapt the derivations to KNSs. **Finally, I succeeded** in identifying certain conditions for KNSs to produce a fully circular shadow like black holes, a shadow with a gap, or no shadow, and the critical parameters where the shadow changes its geometry. [...]

Through the project, I have learned **various skills in computational physics like Python, numerical analysis, and high-performance computing**. With these skills, I am confident that I can quickly become **proficient in analyzing large datasets from particle physics experiments**. I **presented this project** at the American Physical Society's "Quarks to Cosmos" conference in April 2022. I am **currently writing a paper** on the results of this research as the first author. I **expect to submit the paper** to a peer-reviewed journal in February 2023. **This project is a great fit for my professional goals** because it bridges theoretical physics and observational astronomy, a balance I strive for in my future career. **It has laid the foundation of my scientific mindset**: being inquisitive about theoretical science but still being grounded in testable and observable predictions.

EXAMPLE PAGE 2

This mindset informs my interest in cosmological projects at Fermilab which lie at the interface between theoretical and observational cosmology. I especially want to work with Fermilab scientists leading the **Dark Energy Survey** (DES) and the **Axion Dark Matter Experiment** (ADMX). I **hope to analyze DES observations of supernovae, galaxy clusters, and the large-scale structure of the universe** to **gain insights** into the **expansion of the universe** and the **constraints of dark energy particle candidates**. [...]

As a global leading particle accelerator laboratory, Fermilab provides the perfect research environment for me to explore and study particle physics and its astrophysical applications. I will be **exposed to a wide range of physics subfields**, which is very helpful in **guiding me toward my future graduate studies and career**. Besides, at Fermilab, I have rare **access to some of the most cutting-edge particle detectors and accelerators**. Because **particle physics research technologies are widely applied** in other fields like biomedical engineering, medicine, computer science, and security, among many more, a Fermilab internship would **prepare me well for both academia and industry**. In addition, I hope to **work with some of the leading particle physicists** where I **gain insights into how researchers collaborate** in a major project and **how they become who they are today**.