COMMON FEEDBACK I GIVE TO EVERY STUDENT'S APPLICATION I READ.

LOGAN PEARCE, DDSS WORKSHOP 2022

THE GOAL OF APPLICATION MATERIALS

- Imagine you are an astronomy faculty member on the admissions committee. You have a stack of 200 applications in front of you.
  - What are you looking for?
  - What will make this difficult?

THE GOAL OF APPLICATION MATERIALS

- Think like an admissions reader: I want to select a cohort of students with the best chance of succeeding in our program.
- You need to show them that that is you:
    - Show them that you are the best fit for their program.
    - Show them that they are the best fit for your career goals.
    - Show them you have done your homework and you're not just sending the same letter to every school!

THE GOAL OF APPLICATION MATERIALS

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EVERYTHING IN YOUR APPLICATION NEEDS TO SERVE THIS PURPOSE

TELL A STORY

- This is NOT a place for creative writing!!

-BUT-

- You do want to tell the story: you are a competent student with clear goals that you are driving towards, the skills to succeed in their program, and you are a good bet for their in their program.

- This is the theme of the personal statement. Literally every sentence should serve this theme!

TELL A STORY

- This is NOT a place for creative writing!!

- You d
  that y
  are a

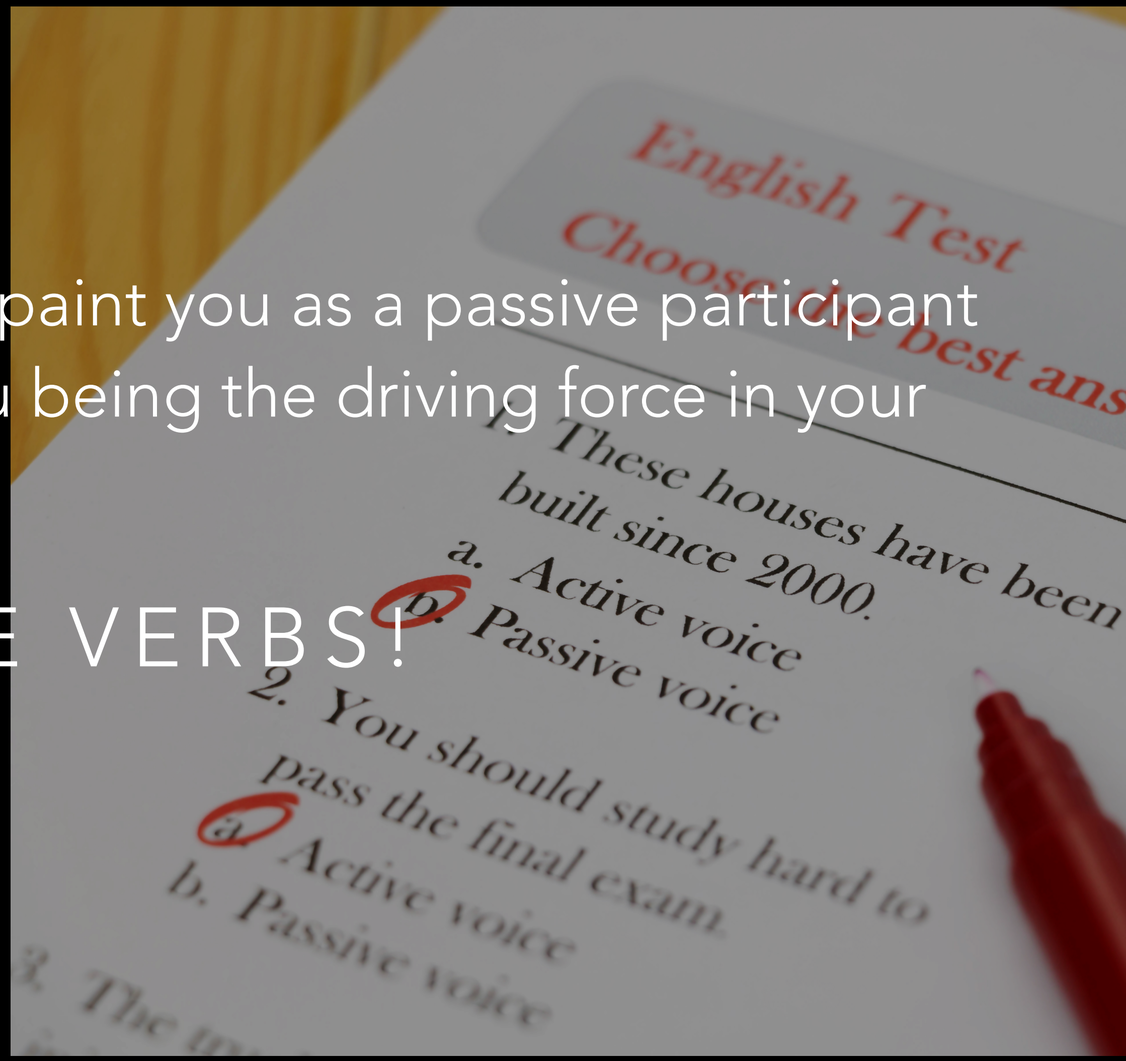
- This is
  should serve this theme!

THEIR PROGRAM IS THE BEST FOR YOU, AND YOU ARE THE BEST FOR THEIR PROGRAM

NOW SOME DO'S AND DONT'S FOR ACHIEVING THAT THEME

DON'T: PASSIVE VOICE/PASSIVE VERBS!

- This is my #1 complaint about essays and I harp on it with EVERYONE.
- Passive voice is boring and imprecise.
- Passive verbs are boring to read and they paint you as a passive participant while things happen to you, instead of you being the driving force in your education and experiences.



DO: ACTIVE VOICE/ACTIVE VERBS!

PASSIVE VS ACTIVE VOICE

- Active voice puts the subject first.
    - “Jimmy stole the cookies”
- Passive voice puts the object first.
    - “The cookies were stolen by Jimmy.”
- Passive voice is often used intentionally to obscure the actor.
    - “We regret that the sensitive documents were leaked.”

Watch out for “be” verbs!
Those are a signpost of passive voice/passive verbs

Active voice

Tells us what a person or thing does.

The subject performs the action (verb) on the object.

Subject + verb + object

Example:

- Anna painted the house.
- The teacher always answers the students' questions.
- Ali posted the video online.

Passive voice

Tells us what is done to someone or something.

The subject is being acted upon.

Object + verb + subject

Example:

- The house was painted by Anna.
- The students' questions are answered by the teacher.
- The video was posted online by Ali.

Image source: Learn Easy English https://www.youtube.com/watch?v=ZEB4IFWWQG4

SOMETIMES PASSIVE VOICE IS INTENTIONAL

- “The woman was sentenced to five years in jail”
    - We all know who the actor is and it’s not important to the story. The emphasis is on the fact that the woman was sentenced to jail.
- “The judge sentenced the woman to five years in jail”
    - Now the sentence is active voice and the emphasis is on the judge’s action.

BUT REMEMBER WHAT THE GOAL OF THE ESSAY IS HERE!!!!

Examples from: https://blog.reedsy.com/active-vs-passive-voice/

YOUR TURN:
1: IDENTIFY THE "BE" VERB
2: REWRITE THE SENTENCE IN ACTIVE VOICE WITH ACTIVE VERB

- The thanksgiving dinner with cranberry sauce and stuffing was eaten by everyone, including Jill and Nick.

- Jerry had been given twenty gifts for his birthday by his family. His parents were given a discount by their friend Jimmy.

- In my research project I was able to construct a model of galaxy formation using a public simulation software.

- In undergrad I was involved in developing a new outreach program to local middle schools

Some examples borrowed from: https://www.flocabulary.com/lesson/active-vs-passive-voice-examples/

PASSIVE BONUS: FRAMING YOURSELF IN AN ACTIVE ROLE

- It’s not really passive voice, but be aware of sentences that paint you in a passive posture verses and active one
  - Passive role: “I became familiar with the new python package” 
  - Active role: “I familiarized myself with the new python package” 

DO: CONSIDER YOUR AUDIENCE

- Don't assume your reader will be familiar with all the jargon in your field. Aim for an educated reader who is not in your field.

Example:

"The planet is disrupted when it approaches within the star's Roche Lobe":

- If "Roche Lobe" is a key part of your project, define it. Something like "The planet is disrupted when it approaches within the star's Roche Lobe - the distance within which the tidal forces caused by the star's gravity are strong enough to destroy the planet."
- If it's not a key term to understand your proposal, then reword the same idea without using the term. Something like: "The planet is disrupted by the star's gravitational influence when it passes too close to the star." Everyone should have enough of an understanding of gravity to understand that.

From: Common GRFP feedback: http://www.loganpearcescience.com/resources/GRFP_common_feedback.pdf

DO: USE STRONG DECLARATIVE LANGUAGE

- Remember the point of this essay!
  - “I hope to get a job as university faculty.” 
  - “I intend to pursue a career as university faculty.” 
  - “I would like to start an outreach program…” 
  - “I plan to start an outreach program…” 

DO: USE STRONG DECLARATIVE LANGUAGE

- Now is not the time for humility. Don't paint yourself as lucky to be here. Remember: You are pursuing your goals!
    - "In 2019 I was fortunate to start a research project in Dr. X's lab…" 
    - "In 2019 I worked with Dr. X to…" 
    - "Due to Dr X's expertise in Y field, I sought a research position in his lab…" 

DON'T: USE THE P WORD!!

- Do everything in your power to say the same idea without using the word "passion". Seriously. AVOID AT ALL COSTS!

- Remember: show don't tell. SHOW them you're passionate about something by describing what you've done.

Example:

"Because I am a woman in STEM, I am passionate about STEM outreach to young women in high school" vs. "Because of my experience as a woman in STEM, I understand first-hand the importance of women-focused STEM outreach and the impact it made in my life."

From: Common GRFP feedback: http://www.loganpearcescience.com/resources/GRFP_common_feedback.pdf

DO: TELL YOUR READER WHAT TO THINK

- Make sure you are clear about what the reader should take away from something. Don't leave it up to them to connect the dots between two ideas, do it for them.

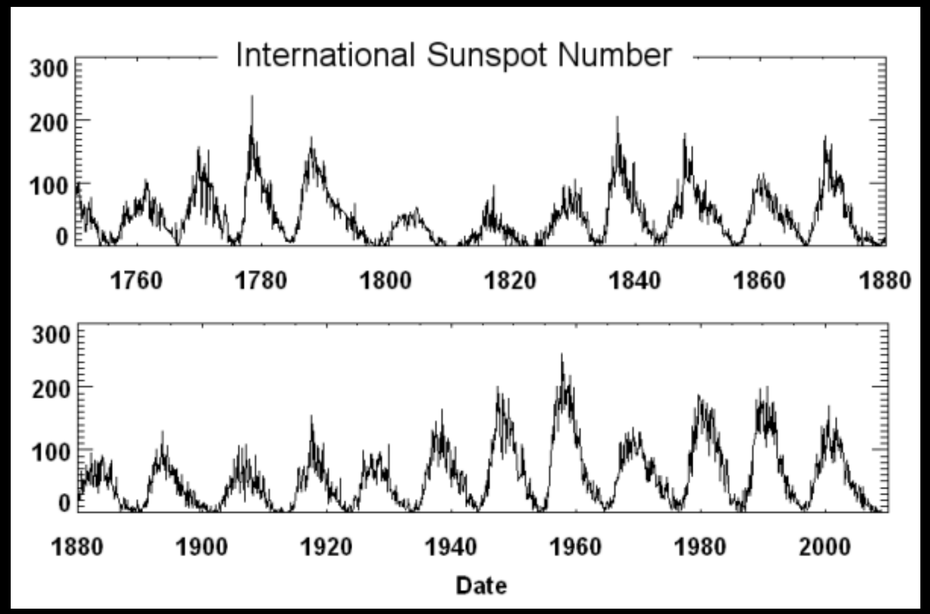


Figure 1: Plot of the number of sunspots observed as a function of year.

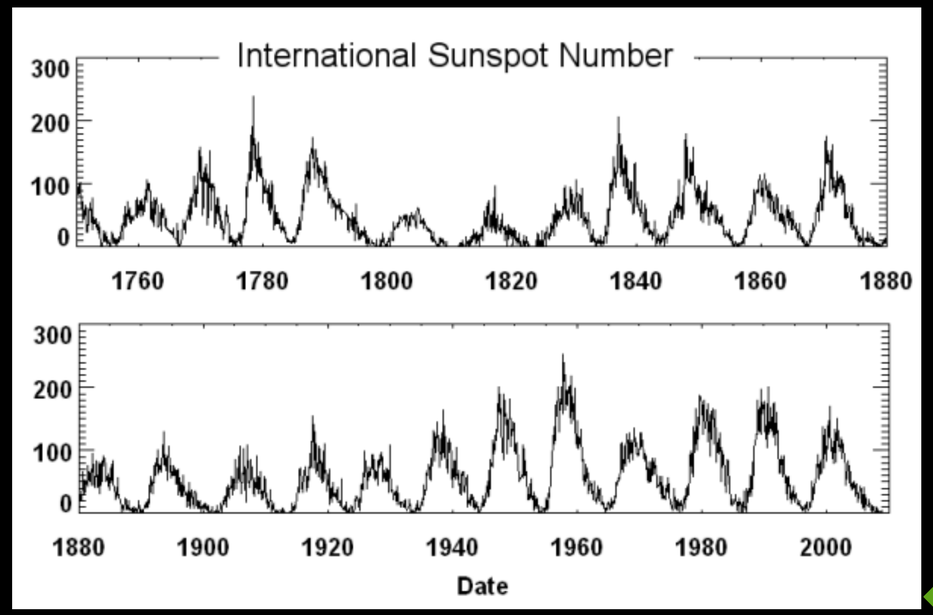


Figure 1: Plot of the number of sunspots observed as a function of year. We see a clear cycle in the number of sunspots over time, with an 11-year period. This points to an underlying process in the sun's photosphere responsible for the sunspot periodicity.

DO: CONSIDER BOLDING IMPORTANT THINGS YOU WANT TO BE SURE THE READER SEES.

University of Arizona Astronomy Graduate Program Logan Pearce

Statement of Purpose

I intend to complete a Ph.D in astronomy research in the field of extrasolar planet and brown dwarf high-contrast imaging and formation. Following completion of my Ph.D, I intend to continue to work as an astronomy researcher, ideally at an observatory or research institution such as NASA. University faculty is also a position I will consider. I intend to pursue a career path that will allow me to continue to do astronomy research.

My path to astronomy is non-traditional and non-linear, but **it is precisely because of this winding path I now know for certain that a career as a researcher in exoplanetary astronomy is the ideal path for my future.** Every choice I have made as a student, every opportunity I have pursued, has been with this goal in mind.

From: http://www.loganpearcescience.com/resources/

DO: NAME DROP AND IDENTIFY SPECIFICS ABOUT THE PROGRAM

The University of Arizona is an ideal institution to carry out this study. Your institution comes highly recommended to me as a hub for exoplanet research. The access to observing resources at Arizona is unparalleled, and facilities such as the LBTO, VLT, and Mag-AO are at the cutting edge of high-contrast imaging and interferometry. My undergraduate work was conducted using NIRC2 data from Keck Telescope, and I even was able to travel to Keck with Dr. Kraus in 2017 to collect more data for my project, and fell in love with observing there. I would ideally like to continue to pursue high contrast imaging and a career as an observational astronomer.

However the main reason I would like to study at Arizona is the expertise of your exoplanet community. I attended the Star and Planet Formation 2 conference in March of 2018, and met many of your faculty and graduate students, and learned about the exciting research in both theory and observations of how star and planetary systems form. I am particularly interested in the work of Daniel Apai's research group. His student Yifan Zhou recently visited UT Austin, and his presentation was exciting and directly related to my undergraduate research, and we discussed all of the work Dr. Apai's group is doing related to planetary mass companions. I feel that my research experience and interests would be an asset to his group, and his expertise at planet searching with VLT, access to resources, and mentorship would be vital to my science and growth as an astronomer. Jared Males and the Mag-AO team are very interesting to me as well.

Additionally, your department comes highly recommended to me as a supportive and encouraging learning environment. The exoplanet community at Arizona, from what I have learned about your program, sounds like just the kind of learning and research atmosphere I am looking for in a Ph.D program. I am also a hiking enthusiast and love the desert, so living in Tucson is very appealing to me as well.

You are the best place for me to carry out my career goals

Look here are specific things about your program I am excited about

Look here are specific people I want to work with.

Look I've heard about how great your program is! I also like Tucson!

You're perfect for me and I'm perfect for you!

From: http://www.loganpearcescience.com/resources/

PERSONAL STATEMENT VS. STATEMENT OF PURPOSE

- They are not the same thing, so don’t write the same kind of essay for both. Be CLEAR about which one they are asking for.

- Your turn: Given the names of the two types of essay, what do you think the goal of each is? What is the application committee member looking to get out of each of them?

	Statement of Purpose	Personal Statement
General Content	Academic and professional background, skills, and accomplishments; research interests; academic/career goals; why this program is a good fit for you	Personal motivation for applying; how you developed your research interests; any relevant experiences, challenges, or accomplishments
Level of Formality	Formal	Less Formal
Length	Varies, but typically 1-3 double-spaced pages	

Table source and more good info: https://www.prepscholar.com/gre/blog/statement-of-purpose-vs-personal-statement/

DO: TAILOR YOUR MATERIALS TO THE SPECIFIC PROGRAM YOU ARE APPLYING TO

- YOUR TURN: Check out my program's grad admissions solicitation: https://www.as.arizona.edu/graduate-admissions, application booklet: https://www.as.arizona.edu/sites/default/files/Graduate_Booklet%2022-23_1.pdf, and mission of the grad program: https://www.as.arizona.edu/mission-our-graduate-program

- Answer the following questions:

    - What application materials are required?

    - What is the goal of the program that you should tailor your essay to?

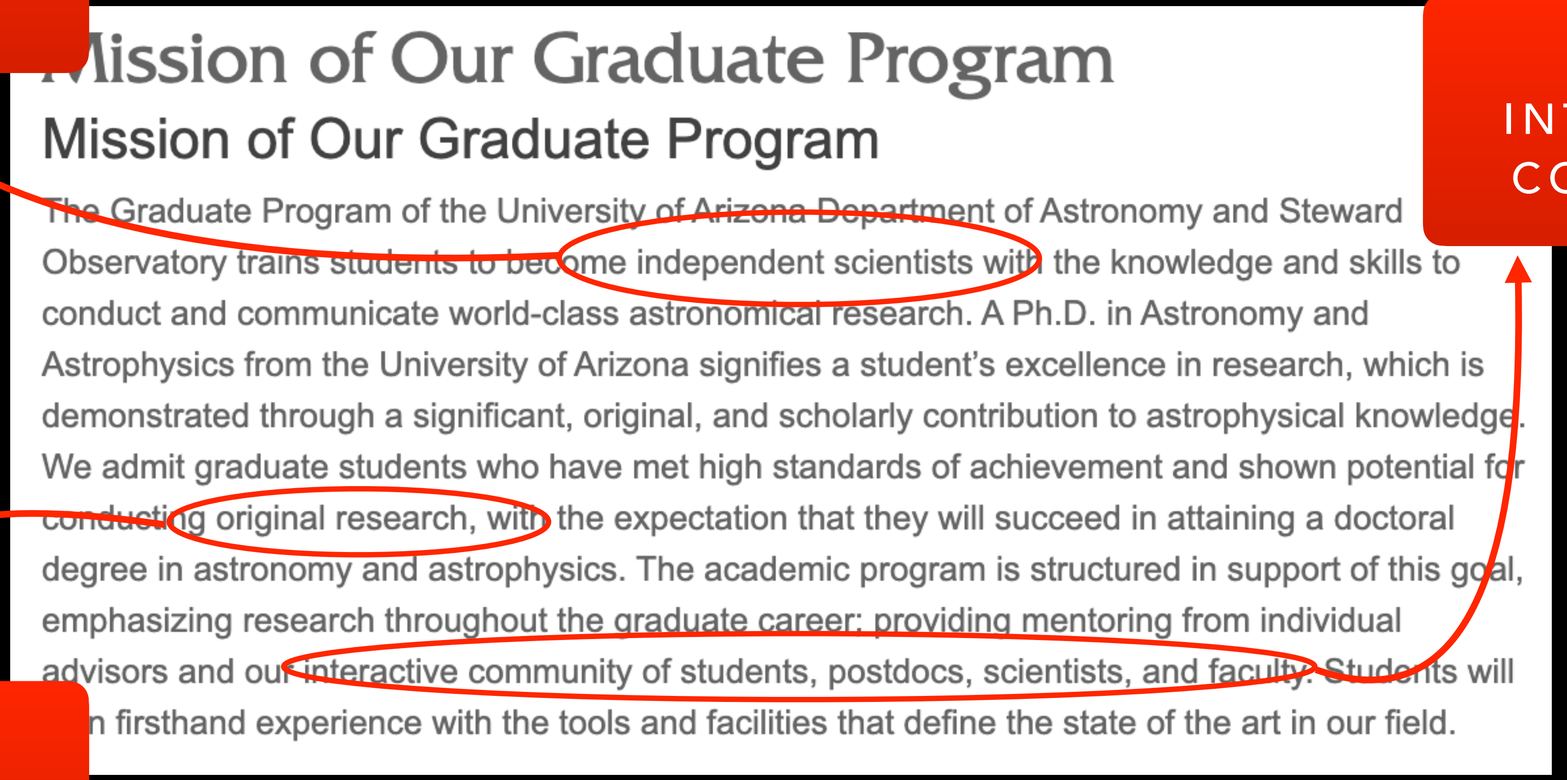
    - What are some high-level things the program values that you should be sure to hit in your essay?

SOME THINGS I NOTICED:

Disclaimer: you don’t have the space to do ALL of this!

TRAIN INDEPENDENT SCIENTISTS

Your essay better say you want to pursue a career in science research, and highlight your independence in research activity in the past



Mission of Our Graduate Program

Mission of Our Graduate Program

The Graduate Program of the University of Arizona Department of Astronomy and Steward Observatory trains students to become independent scientists with the knowledge and skills to conduct and communicate world-class astronomical research. A Ph.D. in Astronomy and Astrophysics from the University of Arizona signifies a student's excellence in research, which is demonstrated through a significant, original, and scholarly contribution to astrophysical knowledge. We admit graduate students who have met high standards of achievement and shown potential for conducting original research, with the expectation that they will succeed in attaining a doctoral degree in astronomy and astrophysics. The academic program is structured in support of this goal, emphasizing research throughout the graduate career: providing mentoring from individual advisors and our interactive community of students, postdocs, scientists, and faculty. Students will n firsthand experience with the tools and facilities that define the state of the art in our field.

VALUES INTERACTIVE COMMUNITY

Mention how you've participated in scientific community in the past and how this is a strong selling point for this program for you.

EMPHASIZE SUCCESS IN ORIGINAL RESEARCH

Discussion of past research experience should highlight originality and your unique contribution to current scientific areas.

Join Our PhD Program and Launch a Career in Astrophysics

DISTINGUISHED FACULTY

LARGE COMMUNITY

TELESCOPE AND COMPUTING RESOURCES

SPANS A LOT OF DISCIPLINES

LEADERSHIP IN THE NEXT DECADE

PRIZE AND FUNDING WINNING

There are many reasons why The University of Arizona's Astronomy and Astrophysics Graduate Program is among the top US astronomy programs, including the following:

- A distinguished and active faculty, including four members of the National Academy of Sciences and winners of Kavli, Sloan, Packard, MacArthur, Guggenheim, American Astronomical Society, and American Physical Society fellowships and prizes
- Access to world-class large, medium, and small-aperture telescopes for millimeter, infrared, and optical wavelengths
- A broad and vigorous program in theoretical astrophysics, with more than 20 faculty members drawn from Astronomy, Physics, Applied Mathematics, Lunar and Planetary Sciences Departments, and NSF's National Optical-Infrared Astronomy Research Laboratory.
- Leadership in the key astronomical observatories of the next decade, including the Large Synoptic Survey Telescope, the James Webb Space Telescope, and the Giant Magellan Telescope.
- Innovative telescope and instrumentation research groups, including the SO Mirror Lab, the Center for Astronomical Adaptive Optics, the Imaging Technology Lab, Infrared Detector Lab, and three radio instrumentation labs.
- Extensive supercomputing resources, including access to the latest GPU's.
- One of the largest astronomical communities with the Department of Astronomy, the Lunar and Planetary Laboratory, NSF's National Optical-Infrared Astronomy Research Laboratory, and the Planetary Science Institute.
- One of the largest and strongest exoplanet communities and lead institution of the NASA- funded Earths in Other Solar Systems (EOS) research consortium.
- Steward Observatory and Lunar and Planetary Laboratory are often ranked #1 in the US by NSF in research expenditures in space sciences.

A Research-Focused Program

Our graduate program strongly emphasizes active research. When admitted to our program you will be invited to visit the campus and meet with the many research groups at the Department. Most students select a research topic and join a research group at the beginning of their first semester and continue to be immersed in research throughout their studies.

HEAVY RESEARCH EMPHASIS

Financial Support, Startup Funds, and Living in Tucson

When you are admitted to our program, we make a commitment to support you for the years that it typically takes our students to complete the Ph.D. program. Support may come in the form of teaching assistantships, faculty grant-supported research assistantships, or fellowships (from NSF, NASA, or The University of Arizona). With summer employment, the total annual salary of over $30,000 enables you to enjoy a comfortable lifestyle in Tucson where cost-of-living is moderate. Your tuition is waived or covered by the department.

When you are starting in our program, we provide you with a starting budget to cover the purchase of a computer and/or other expenses supporting your research. As students join specific research projects, the projects usually cover additional expenses, such as travel, a laptop, and membership fees.

Tucson and its environment constitute a thriving city of close to million people, supporting a wide variety of events, attractions, activities, and restaurants. The University of Arizona itself provides a wide range of entertainment options, ranging from top-flight cultural activities to high-level college athletics. 300 days of sunshine per year, mountains with hiking trails, rock climbing, biking, and skiing, and the beautiful and biologically diverse Sonoran Desert encourages Tucsonans to pur

"The astronomy at Steward is world-class and getting outside around Tucson is pretty awesome too."

Steph Sallum, Ph.D. 2017, and Faculty at UC Irvine

CARES ABOUT STUDENT SUPPORT AND QUALITY OF LIFE

HIGHLIGHTS TUCSON AND OUTDOOR ACTIVITIES

SUMMARY

- DO:
  - Think like an admission committee member
  - Use strong declarative language and active verbs/voice
  - Tell your reader what to think
  - Highlight specifics about their program that are appealing/exciting to you
- DON'T:
  - Use passive voice - look out for "be" verbs!
  - Use the P word!
  - Exercise your creative/poetic writing skills. Be succinct and clear.

- This workshop was written by Logan Pearce, 2022, updated 2024.
- More advice and resources available on my website www.loganpearcescience.com