I plan to pursue a doctoral degree in astronomy with the goal of conducting original research in extra-solar planet discovery and characterization. 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.

Although I have always had an interest in astronomy, I obtained a bachelor's degree in chemistry from Purdue University as a traditional college student in 2003, and earned a commission as an **officer in the US Navy** upon completion. I sought appointment in the Navy's nuclear power program because of the degree of academic challenge it afforded. I was not disappointed. The academic rigor in the schooling and subsequent work in the fleet is unparalleled by anything in the civilian world, in my experience. I served in many roles during my 5 years in the Navy, but the most impactful for me was as a nuclear power plant operator and maintenance division supervisor aboard the aircraft carrier USS John C. Stennis (CVN-74) for over 2 years in both war-time and maintenance conditions. In that capacity, I was continually challenged as a learner, a decision-maker under pressure, and a leader of personnel. The skills and experience I gained from that short intense time are too numerous to recount in detail here, but are an essential part of who I am and a factor in all my successes going forward.

Following separation from the Navy in 2008, I obtained a teaching certification and served as a **middle school science teacher** in Texas for 6 years. I taught in an advanced magnet program, and I focused my classes on teaching physics and engineering. I believe strongly in the power of engineering projects to drive student intellectual development, and so in 2014 I completed a Master's degree in engineering education in which I conducted original research on the effects of a well-designed engineering lesson on student development, while working as an in-service teacher. I also designed a popular elective course at my school in which students designed a crewed mission to Mars. The students' excitement in studying space rekindled my own love of astronomy, and I decided to leave teaching to pursue a career as an astronomer. It had been so long since I had studied math and physics that I quickly realized I needed to re-learn the basics to be successful as a researcher, and I am glad I did. I found the truth of the saying "I didn't know what I didn't know".

As recounted in my statement of purpose, I pursued several research experiences, both at UT Austin and other institutions. I have attended multiple conferences and presented my research, and become an active member of the astronomy community. I've found a lot of purpose and fulfillment in making meaningful contributions to the progress of astronomy, which is the main reason I decided to pursue this opportunity. And getting to make a living studying how planets form is just so darn cool.

While a second-time student, I got involved in outreach as quickly as possible. I am part of the team that puts on the monthly Astronomy on Tap (AoT) show in Austin, the most highly-attended AoT show! AoT is an organization that hosts regular astronomy outreach talks for the public at a local pub. I make videos for the show, graphics, and help with merchandise. I love Astronomy on Tap and intend to get involved in the local show wherever I end up as a graduate student.

I also derive a lot of satisfaction and purpose from helping my peers take full advantage of the opportunities provided by being a UT Austin astronomy student. I served for three years as one of the Astronomy Department Undergraduate Representative, in which I facilitated communication between the department and the undergraduate population. We hosted several UG town hall events to provide feedback to the department, application workshops, a "welcome to the astronomy department" event for new students, and wrote a white paper for the departmental external review

in 2017. Additionally, I severed as a Student Veteran Services Peer Mentor for one school year, in which I helped fellow veterans transition to student life and find community. I look forward to continuing to be a cheerleader for my peers in graduate school.

Additionally, I am strongly motivated to leverage my unique position as a former teacher in outreach. It can be difficult for teachers, with many other professional demands, to develop an intuitive sense of how the scientific community generates and evaluates new knowledge. Yet teaching this in schools is vital, as teachers can be front-line actors in improving the nation's science literacy. Giving secondary science teachers direct experience in carrying out a science project, then, represents an invaluable opportunity for the scientific community to help shape the scientific literacy of the nation. I became aware of the NSF's Research Experiences for Teachers (RET) after I had already left the teaching profession, but immediately recognized its potential power. I had attended numerous teacher workshops, which were excellent, but I would have leaped on the opportunity to actually do real science. I found that there were not many RET programs available, and those were mostly engineering and computer science focused. **I want to begin an astronomy RET program at my graduate institution.** I believe Michigan, with its reputation for excellent astronomy research and dearth of opportunities in exoplanet research, is the perfect location for an astronomy RET program.

Because of my unique background, I can readily see the power and need for this type of outreach to the public. The potential of a few teachers coming to my school for the summer can have a compounding impact on the community and the nation. Get the teachers, you get the students, who get the parents, who get the community. I very much want to see this program expanded to many science disciplines, and plan to pursue outreach to teachers as a graduate student. I want teachers to have the same sort of life-changing research experiences I have been privileged to have.

The University of Michigan is an ideal location for me to pursue my interests. The astronomy department has an excellent reputation for research and community, and has been highly recommended to me by many in the exoplanet field. The research at U of M is the main draw for me (discussed in detail in my research statement), but what I know of the astronomy community there is also a contributing factor. I have been in challenging mental and physical environments before, and I am looking to join a supportive community that values work/life balance and mentorship of early career scientists.

It took me a while to find purpose in my career, but I have no doubt I have found it. **Astronomy is my path**, with a career as a research scientist, ideally at a national laboratory or observatory. Graduate school will prepare me for research as a professional astronomer, refine my skills at conducting and communicating research, and to continue encouraging peers and mentoring younger students. I believe I have a lot to offer Michigan Astronomy, and that the education I would receive there would be top notch, and set me up for success in my future astronomy career.