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Expectations for Graduate Research Assistants supported by SwRI and enrolled in the Joint Physics PhD program between UTSA and SwRI

This document lists expectations for students with Research Assistantships who are enrolled in the joint UTSA-and-SwRI physics Ph.D. program. These guidelines are minimum expectations; individual advisors may have additional expectations. Address any questions regarding these expectations to your advisor or to the lead Adjoint Professor, Mihir Desai.

Ensuring a Positive and Professional Environment.

UTSA, SwRI, and the Space Science and Engineering Division all strive to have a safe, productive work environment. If you feel that any part of this program does not meet this goal at any level (e.g. unsafe working conditions, harassment in the work place, etc.) you should inform one of the following people: (1) Your advisor, (2) Mihir Desai (as lead Adjoint), or (3) Any UTSA faculty or staff with whom you feel comfortable.

The doctoral degree requires a minimum of 81 semester credit hours beyond the bachelor's degree. These credits include contributions from both coursework and research work. For further details see <http://utsa.edu/gcat/chapter6/COS/phydept.html#phdp>.

In addition to satisfying all of the UTSA Graduate School requirements, SwRI-supported PhD students are also expected to meet the following criteria:

Coursework

Coursework will provide the fundamental understanding upon which your research will be built. Refer to your Graduate student handbook for more information. You should:

- Enroll in at least 3 classes during Spring and Fall semesters, each with 3 semester credit hours, until advancement to candidacy.
- Complete a total of 13 courses, each with 3 semester credit hours that include 4 core courses and 7 advanced electives.
- Space Physics students advanced electives must include *all seven* Space Physics courses, namely, PHY 6123, PHY 6403, PHY 6623, and 4 Special Topics courses PHY 7703. Astrophysics core course requirements are currently still under development.
- Maintain a GPA of at least 3.5, with a minimum Grade of B in any graduate class. All students should strive for straight As in their coursework.
- Apply for your Masters degree after completion of your oral qualifier. You have earned this degree, it will add to your CV when you are looking for a job, and it will 'reset' the clock on the number of hours you can take as an in state student.

Research Work

The time required to graduate will depend largely on your effort in the program. As a funded research assistant we expect:

- At least 20 hours per week of research work during each Spring and Fall semester.
- At least 40 hours per week of research work during each Summer semester. Of these, 6 semester credit hours can be applied toward degree requirements such as Directed, Doctoral, or Dissertation Research.
- The number of hours listed above is what is needed to fulfill contractual requirements. Your actual hours will vary, depending on what level of effort is required to make substantial progress toward your degree.

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- Three peer reviewed publications (accepted or in press) in the Journal of Geophysical Research, the Astrophysical Journal, Icarus or other equivalent journals related to your PhD Thesis project. (See **Publication Rule** below.)

Facilities and Benefits

In addition to the stipend and benefits listed in the Appointment Letter, students supported by SwRI shall be provided the following facilities:

- Access to laboratory and on-site SwRI campus facilities.
- Office and work space for research activities.
- Resources required to execute your research, including personal desktop computer with access to the internet.

SwRI expectations

As a visitor working at SwRI you are be expected to follow institute regulations, including:

- Agree to the institute acceptable use policies prior to gaining access to network resources.
- Complete required SwRI safety training courses prior to working in any laboratory.
- Not host any visitors (specifically foreign nationals) on the institute grounds without prior authorization from your advisor.
- Dress and act professionally while at the SwRI campus.

Other helpful advice or comments for students (in no particular order):

- Students must learn that mistakes are part of research, and lack of perfection can be a truly effective teacher. You will often be at a stage of your research where the next steps are not obvious. Try something and learn from it.
- Communicate with your advisor and committee often. This teamwork will make sure you are working on what is important. Their experience can get you through some difficult challenges.
- Although ultimately you will be judged on your research, do not neglect your classes. Classes are where you build the foundation of your knowledge for your research. If you do not keep your grades up will not be allowed to progress.
- Writing is an essential skill for working scientists. Like all skills, it requires practice. Unfortunately, many students (and scientists) are not proficient writers. Practice. When you write something (papers, proposals, etc.) ask for feedback from your advisor and your peers.
- In graduate school you will be building your network of peers, both inside and out of our program. When you go to meetings, make sure to meet and talk with other students and scientists from other institutions. Volunteer to serve on panels and committees and to review papers. This will not only expose you to what others are doing, but it will also help to introduce you as someone who wishes to be an active member of this field. These contacts may also help you find a job when you graduate.
- Look into joining a professional organization. For example, if you study magnetospheric physics, you should be a member of the American Geophysical Union, and the Space Physics and Aeronomy section. This annual dues are minimal. AGU student membership is \$20 a year.
- There are many summer schools and conferences that you may attend. These are wonderful opportunities that we encourage you to pursue. However, it is possible to spend all summer in summer schools and conferences and not have any time for

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- your research. Discuss with your advisor in advance your summer plans and the time you are expected to be here during the summer.
- You should apply for fellowships and other awards. This is an excellent way to practice writing proposals. If you win one of these awards you may get a nice financial reward (e.g., an education allowance that could be used for travel to conferences), and again a nice addition to you CV. We will try to keep you informed on some of the available fellowships, but you should keep your eyes open, too. You may be a member of some group or organization that offers a fellowship.
 - One of the difficult lessons you may need to learn is time management. There are many resources out there to help (books, advice from faculty). We suggest you make yourself a plan with clear milestones. Include things like the classes you need to take, and the papers you will want to write. This will evolve over time, so review it with your advisor and change as appropriate. Be prepared to say no to things that won't advance you toward your degree.

Publication Rule for SwRI-UTSA Space Science PhD Students

1. Purpose of this rule

The publication of original research in peer-reviewed journals is essential to the success of a research scientist. To ensure that PhD students in the SwRI-UTSA space science program are making sufficient progress toward this goal, we require that at least one first-authored, peer reviewed article is accepted by a journal no later than the end of the fourth (4th) year of support. Failure to meet this requirement may result in loss of financial support.

2. Rule definition

By the end of their 4th year of SwRI-funded support, each PhD student must have a *minimum of 1 paper accepted* by a peer-reviewed scientific journal, with the student as the first author. Failure to meet this requirement will trigger a *Termination Review*. The start date of SwRI-funded support is distinct for each student, and is regardless of any UTSA-funding sources or non-consecutive work enrollment with the exception of a voluntary pause enacted by any unpaid maternity or paternity leave. Periods of paid leave (child raising, health, and other formal paid leave) are automatically added to the 4-year timeline.

The Termination Review will assess if the student will remain in the portion of the Physics & Astronomy program funded by SwRI projects. The Termination Review Committee will determine if there are any extenuating circumstances, and if there is reason to believe that acceptance or publication of the 1st paper is imminent.

The Termination Committee will be chaired by the Lead Adjoint faculty member unless (s)he is a member of the student's doctoral committee. If the Lead Adjoint is a member of the student's doctoral committee, the Termination Committee chair will be an Adjoint faculty member appointed by the Lead Adjoint who is not a member of the student's doctoral committee.

Members of the Termination Committee will include the members of the doctoral committee and no fewer than two additional Adjoint faculty members.

The outcome of the Review panel shall be either: (1) A recommendation to terminate support for the student by an Adjoint faculty at the end of the semester immediately following the review or (2) A recommendation to grant an extension to get the student's 1st paper accepted. The extension may be no longer than two (2) semesters, and no more than one (1) extension may be granted.