



**OFFICE OF THE SENIOR VICE PRESIDENT
FOR HEALTH SCIENCES**

Information for Prospective Faculty Mentors Clinical Translational Sciences Graduate Program

The Clinical Translational Sciences (CTS) graduate program enrolls students with a wide variety of translational research interests, and as such it draws on the expertise of faculty in all of UA's Health Sciences colleges. The success of a CTS student depends on establishing a relationship with a faculty mentor who can guide the student's academic life and research, foster the student's professional development and, in many cases, provide funding for the student. This document is meant to assist faculty members as they take on this multifaceted role to help ensure the relationship is mutually beneficial.

Most professors can point to one or more people who served as mentors to them during their education and training in their field. Having had that experience, they may recognize the ways in which their mentor helped them and wish to do the same for younger people who are joining the discipline. Helping a student discover their potential and learn how to achieve their professional goals can be as richly rewarding for a mentor as it is vital to the student.

A professor who is asked to be mentor to a student pursuing the Ph.D. or M.S. in Clinical Translational Sciences needs to understand what that role will entail. CTS students are expected to be responsible for knowing what is required to complete their program and should take the initiative to ensure they are fulfilling those requirements. But their ability to succeed in the program, perform valuable research, and translate those efforts into the launch of their professional life is dependent on the guidance and support of their faculty mentor. An effective mentor should be attentive to the different areas in which they assist their student.

Academic Advising

The faculty mentor of a CTS graduate student is, among other things, the student's academic advisor. This and other aspects of the mentor-student relationship demand that the mentor have research interests and expertise that match fairly closely with the area the student wishes to study.

As in many programs, the CTS masters and doctoral program have some required courses, or sets of courses, that students must complete, but the remaining coursework is selected to

meet the student's individual needs. The mentor is responsible for shaping their student's coursework to ensure it provides the knowledge needed for the student to complete their dissertation or thesis research. The mentor should also take a broader view of the knowledge their student will need beyond the graduate program and thesis or dissertation to be able to successfully grow within the discipline. The student's coursework should therefore be broad enough to provide a foundation for research in the discipline, but should have enough specific focus for the student to have the tools to complete the dissertation or thesis project.

Additionally, for Ph.D. students the mentor helps the student identify an appropriate doctoral minor. In most cases the minor will be external to CTS, but it may be a CTS minor concentrating on a different area or aspect of translational science than the major coursework and dissertation focus on. The mentor may also be able to help the student identify a faculty member who can act as minor advisor (for a CTS or outside minor), which generally also includes service on the student's comprehensive exam committee.

CTS Advising Procedures

A CTS student needs pre-approval for the courses he or she takes each semester to ensure the courses will enable the student to make progress toward completing their degree. This approval is granted in one of two ways:

1. A student whose Plan of Study has been approved in GradPath, listing all courses to be counted toward the degree is considered to have pre-approval to enroll in any remaining courses listed on that form.
2. A student who does NOT have an approved Plan of Study needs to agree with their mentor about which courses to take in the semester. The agreement is formalized using the CTS Advising Agreement form, available from <https://cts.uahs.arizona.edu/programs/forms>. The form is signed by the student and mentor and is then returned to the CTS Coordinator of Administrative Affairs by e-mail to CTSupport@email.arizona.edu for program approval.

CTS students are enrolled in dissertation (CTS 920), master's thesis (CTS 910), or research (CTS 900) units at the request of the mentor. Students may take dissertation or thesis units as soon as the mentor has approved the student's dissertation or thesis project and agrees the student is ready to begin the research. The mentor should send an e-mail to CTS at CTSupport@email.arizona.edu to request dissertation, thesis or research enrollment for their student. The e-mail should include the number of units the student should register for. CTS staff will enroll the student and confirm by e-mail to the mentor and student.

Funding

When a faculty member agrees to become the mentor for a domestic CTS doctoral student (i.e. U.S. citizen or permanent resident), they commit to providing funding for the student for the full time the student is working on their degree. A mentor for a CTS M.S. student or international Ph.D. student is not required to provide funding or employment, but is encouraged to do so if feasible. The mentor relationship is normally established during the student's first year in the program, during which many domestic Ph.D. students are funded by the CTS program; the mentor would provide funding for the student beginning in the student's second year in the program. Funding may be in the form of employment as a Graduate Assistant or by means of a scholarship or fellowship, or any combination thereof, and should be at or above the level of funding provided by the CTS program during the first year of doctoral study. Currently the first-year domestic Ph.D. students funded by CTS are appointed as Graduate Research Assistants with a 0.5 FTE carrying annualized pay of \$25,320; the funding unit also pays the cost of the associated ERE and full resident tuition. CTS can provide the specific costs of Graduate Assistant support upon request to CTSupport@email.arizona.edu.

The terms of employment for a CTS international student – as a Graduate Assistant or otherwise – are in part dependent on the student's visa status. The student and mentor must ensure that any position for which the student is to be hired as part of the funding arrangement is appropriate and allowable for the student before the mentor relationship is formalized. The CTS Director of Graduate Affairs and Coordinator of Administrative Affairs can help determine what employment will work for the student. International students may be hired as Graduate Assistants.

The means by which a mentor funds a CTS student are determined by the mentor's department or unit; the CTS program does not determine the specific funding arrangement. All CTS students – in particular, those pursuing a Ph.D. – are encouraged to apply for extramural funding to support their studies in the form of an NIH NRSA, K-award, or other suitable fellowship program, with assistance of the mentor and CTS staff. A successful application for extramural funding can reduce the financial burden to the mentor.

Selection of Committee Members

The CTS mentor will assist their student in finding other faculty members who have appropriate knowledge and expertise to serve on the student's graduate committee. A doctoral student forms two committees, which may be the same or different, but are reported separately to the Graduate College: the Comprehensive Exam Committee and the Dissertation Committee. A master's student forms a Thesis Committee to oversee the thesis research and preparation of the thesis.

Per Graduate College policy, the doctoral Comprehensive Exam Committee must include a minimum of four members, at least three of whom are tenured or tenure-eligible UA faculty (see <http://grad.arizona.edu/gsas/degree-requirements/doctor-philosophy#comprehensive-exam-committee>). A UA faculty member who is not tenure-eligible may be approved by the Graduate College as “tenure-equivalent” or as a “special member” to serve on committees; individuals from outside UA may also be approved as “special members.” The CTS Coordinator of Administrative Affairs or Director of Graduate Affairs can assist with seeking such approval. A tenure-equivalent member serves on the committee in the same capacity as a tenured faculty member; special members serve in addition to the three required tenured/tenure-eligible/tenure-equivalent members. The committee must be able to examine the student on both the CTS major and the student’s declared minor. The CTS mentor may help the student to determine a minor that is relevant to the student’s research interests and may be able to assist the student in identifying a faculty member to serve as the minor advisor. The minor advisor typically serves on the Comprehensive Exam Committee in addition to determining the student’s minor coursework.

The doctoral Dissertation Committee comprises a minimum of three members who are tenured, tenure-eligible or tenure-equivalent UA faculty and may include additional members. Unless the student’s minor is relevant to the dissertation research, the minor does not need to be represented on the Dissertation Committee. The CTS mentor serves as Chair of the student’s dissertation committee and may help identify other faculty with appropriate expertise to be on the Dissertation Committee and assist the student with preparation of the dissertation. Note that a mentor who is not a tenured or tenure-eligible UA faculty member needs approval from the Graduate College to serve either with approval as a “tenure-equivalent” faculty member (by recommendation of the home college academic dean) or as a “special member.” A mentor approved as a special member must be Co-chair of the Dissertation Committee with another Co-chair who is tenured, tenure-eligible or tenure-equivalent UA faculty. (The full Graduate College policy regarding service on graduate student committees is found at <http://grad.arizona.edu/policies/academic-policies/graduate-student-committee-service>.)

A master’s student forms a Thesis Committee that must include at least three members, two or more of whom must be tenured, tenure-eligible or tenure-equivalent UA faculty members. The third member (and any additional members) may be tenured/tenure-eligible/tenure-equivalent or an approved special member. The mentor will be the Chair (or Co-chair) of the committee and will guide the student’s choice of a thesis topic and be the primary person overseeing the research and writing of the thesis. The other committee members provide their feedback and advice as needed to assist the student, and the full committee participates in the thesis defense and approves the completed thesis.

Guiding the Preparation of the Dissertation or Thesis

The CTS mentor is responsible for directing the student in all aspects of dissertation or master's thesis preparation. The mentor may work with the student to help them find (and narrow as needed) a topic or hypothesis for the student's research. The mentor and student should plan to meet regularly (a monthly or bi-monthly meeting is encouraged) to ensure the student's research and writing are proceeding as expected, and so that the mentor can help the student with any questions or issues that may have arisen. The mentor also oversees the student's interactions with the other members of the Dissertation or Thesis Committee and should set up periodic meetings of the full committee with the student so that the student has feedback from the other committee members as needed to shape their research and writing. Among other dissertation/thesis concerns, the mentor will be responsible for ensuring the student seeks IRB or IACUC approval in advance of conducting any experiments with human or animal subjects. In concert with the other committee members, the mentor determines when the student's draft dissertation or thesis is ready to be defended and will help the student coordinate the committee to find a date and time for the defense. The CTS program and the Graduate College allow a dissertation or thesis to be presented either in the standard chapter format or in a format based on manuscripts that have been published or prepared for publication.

Professional Development

One vital role a mentor plays is to guide the student in developing skills and gaining needed experience to become an effective professional in their field. While it is essential the student completes the academic requirements for their degree, the student must also understand their position in the discipline and how they can conduct themselves to best take advantage of opportunities for employment, funding and collaboration. A mentor may include their student in activities such as applications for grants and joint authorship of papers on research conducted in the mentor's lab and may encourage the student to apply for appropriate grants or fellowships. The mentor can make recommendations of conferences and workshops the student should attend, including opportunities for the student to present their research, and may help the student connect with researchers in other places who have common interests. Since CTS students are not employed as teaching assistants, it is beneficial for them to have a chance to present lectures if possible – the mentor may invite their student to give a guest lecture in an appropriate course, or may encourage the student to do so in a seminar or other course if possible. The mentor is also the person who can recognize any areas in which the student may require further training or practice, including writing, statistical methods, presentation skills, etc. The CTS Director of Graduate Affairs can assist in finding resources for any needs identified for the student.

CTS students are also required to prepare an annual Individual Development Plan (IDP), which they share with their mentor. The IDP is a tool for the student and mentor to identify the student's academic and professional goals – within and beyond the CTS program. The mentor provides feedback to the student to refine the IDP, and the mentor and student use the IDP as a guide for decisions about the student's coursework, research topic, prospective publications, presentations at conferences, internships, etc. The mentor should be attentive to any skills the student may need to improve in order to achieve the goals set out in the IDP.

Life Balance

Graduate students tend to be very highly motivated and goal-driven. These are certainly good traits, but it is vital that students also preserve a balance between their work and their personal lives. A mentor is chiefly a professional and academic guide for the student, but should also keep the student's general well-being in mind and can play an important role in helping the student maintain a life aside from their research and academic work. Students may feel responsible to themselves and also to their mentors for being as productive as possible, so they may rely on the mentor to occasionally tell them, "You've worked hard on this, and you should give yourself a weekend off to relax." Mentors should also be aware that they are role models for their students – a mentor who has a good balance or effective boundaries between their working and personal life sets an example their student will naturally follow. A student's expectations of themselves and their situation are strongly tied to what they see others around them doing, with the mentor as the prime example. And of course, part of the reward of being a mentor to a student is getting to know them on a personal level – as many faculty have experienced during their own training, a mentor-student relationship may well develop into a friendship that endures long beyond the end of the student's graduate program.

Rewards of Mentoring

A faculty mentor for a CTS doctoral student helps the student in many ways and may expend considerable time and energy doing so. But mentoring a student is not just an act of generosity – it also offers a variety of benefits to the mentor. The mentor is instrumental in fostering the growth of the student into a junior academic colleague. The student obviously contributes to the work done in the mentor's lab or research group and may well offer substantive contributions to publications that highlight the mentor's research. By the cross-disciplinary nature of CTS, the student's research might even foster collaboration between the mentor and other faculty who do not normally work together. But the biggest rewards of the mentor-student relationship are the intangible ones – not unlike parenting, the mentor will take pride in the student's accomplishments and will have the student in mind when learning

of new avenues through which the student may grow. Students are advised that when selecting a mentor, they should be aware that the mentor's reputation will be their own as they begin their professional life. Conversely, the accomplishments of a researcher or clinician reflect positively on those who have mentored them. Mentoring a student is much more than a set of responsibilities; it can be a genuine pleasure and provide real benefits to the mentor, be they academic, professional or personal.

As a final note, the CTS program appreciates and honors the contributions and commitment of its faculty mentors. The CTS Director of Graduate Affairs and Coordinator of Administrative Affairs are happy to provide any assistance faculty mentors need. Mentors may contact the CTS staff by e-mail at CTSupport@email.arizona.edu.

Thank you for considering being a CTS mentor!