Doctor of Philosophy Degree in Translational Science

The Doctor of Philosophy (Ph.D.) degree in Translational Science (TS) at The University of Texas at San Antonio (UTSA) is offered through a joint graduate program with The University of Texas Health Science Center at San Antonio (UTHSCSA) and The University of Texas at Austin (UT Austin). The TS Ph.D. will prepare scientists to lead multidisciplinary biomedical research teams in Type 1 (T1) Track (bench-to-bedside) or Type 2 (T2) Track (bedside-to-community) translational research, toward the goal of translating basic biomedical scientific discoveries into strategies that will improve human and global health. Areas of research emphasis/excellence include, but are not limited to, Hispanic health, military medicine, comprehensive cancer research, aging and longevity, obesity and diabetes/metabolic syndrome, infectious diseases, addiction, and targeted drug delivery. The Ph.D. degree in Translational Science will be awarded to candidates who have displayed an in-depth understanding of the subject matter and demonstrated the ability to make an original contribution to knowledge in their specialized area of study.

The regulations for this degree comply with the general University regulations (refer to Chapter 2, General Academic Regulations, and Chapter 5, Doctoral Degree Regulations).

Admission Requirements

The TS Ph.D. is an advanced scientific research doctoral program. In addition to satisfying the University-wide graduate admission requirements (refer to Chapter 1, Admission), the following admission requirements will be applied to all applicants:

1. Completion of, or enrollment in, an advanced Professional Degree (e.g., M.D., D.O., D.D.S., MSN, Pharm.D.), completion of a Master’s or Doctoral degree, preferably in a health-related, science, public health or social science discipline, or enrollment as a M.D./Ph.D. student with successful completion of the two-year pre-clinical curriculum. Enrollment/graduation must be from an accredited college or university in the United States, or proof of equivalent training at a foreign institution, with a minimum grade point average of 3.0 in the professional and/or graduate work.

2. Official Graduate Record Examination (GRE) scores. Applicants may request a waiver for the GRE requirement if they provide evidence that they have earned a doctoral degree (i.e., M.D., D.O., J.D., D.V.M., Pharm.D., D.D.S., Ph.D., etc.) from an accredited U.S. institution, are currently certified by the Educational Commission for Foreign Medical Graduates (ECFMG), have passed all three steps of the United States Medical Licensing Examination (USMLE), or were previously enrolled in the Graduate School of one of the joint degree institutions.

3. Official Test of English as a Foreign Language (TOEFL) score, with a score of at least 600 (paper test) or online equivalent, or a score of 7.0 on the Academic Examination of the International English Language Testing System (IELTS), for applicants whose native language is not English. Applicants whose scores fall below the minimum requirement will be further assessed for English comprehension skills. TOEFL may be waived for applicants whose post-secondary education was conducted with English as the language of instruction. ECFMG certified physicians will also be granted a TOEFL waiver. NOTE: Consistent with Texas Education Code, Section 51.842(b), an applicant’s standardized test scores, when used to make admission or scholarship decisions, will be compared with scores of other applicants from similar socioeconomic backgrounds, to the extent such information is available. The applicant’s performance on a standardized test (i.e., GRE) will be considered in addition to other admission criteria, and will not be used as the sole criterion for consideration of an applicant.

4. A personal statement (1–3 pages) that describes the applicant’s past training and experience, future career goals and objectives, scientific research interest, and how the TS Ph.D. program will prepare them to achieve their stated research interest and career goals. The Personal Statement should include but is not limited to:
   • A statement of the applicant’s background and purpose for applying to the TS Ph.D. program
   • Applicant’s interest in and commitment to a translational science career
   • Applicant’s potential to develop into a successful scientist, as evidenced by research training/experience, prior publications, etc.
   • Research interest and its applicability to the TS Ph.D. program
   • Identification of a potential Supervising Professor, if applicable
   • Career goals and how the TS Ph.D. program will contribute to their attainment

5. Recommendation Forms and letters of recommendation from three (3) faculty or other individuals who are familiar with and can provide information about the applicant’s academic, research, and/or professional abilities and performance, in addition to the applicant’s potential to succeed in a doctoral program and develop into an independent research investigator.

6. A current Curriculum Vitae

7. A copy of the applicant’s U.S. medical or other health professional license or certificate, if applicable.

Full-time students accepted for the program are eligible to apply for financial support in the form of competitive teaching assistantships, research assistantships, or research fellowships.

Applications must be submitted online at https://apply.embark.com/grad/UTHSCSA/. A complete application includes the application form, official transcripts, GRE scores or waiver request, letters of recommendation, Curriculum Vitae, a copy of the health professions license/certificate (if applicable), and a personal statement. TOEFL or IELTS scores, or waiver request, are required for applicants whose native language is not English. Incomplete applications will not be considered. The TS Committee on Graduate Studies (TS COGS), with members from each of the participating institutions, is responsible for reviewing applications for admission and selecting the most qualified applicants.

Degree Requirements

The degree requires a minimum of 72 semester credit hours beyond the master’s or professional degree. Students will elect either T1 Track (bench-to-bedside) or T2 Track (bedside-to-community). The curriculum consists of core courses (24 semester credit hours), track elective courses (12 semester credit hours) and free elective courses (6 semester credit hours), plus 30 semester credit hours of research and completion of a dissertation. Students will work with a graduate advisor or the supervising professor to complete an individualized degree plan that will meet the student’s research interest and goals. Using the individualized degree plan as a guide, courses may be taken at any participating
Advancement to Candidacy

TS Ph.D. students will advance to candidacy after completing their written and oral qualifying examinations. The Qualifying Examination will be administered before the start of dissertation research, and admission to candidacy will be contingent on its successful completion. Methods for administration of the qualifying exam will be written and oral. The exam will be comprehensive and will include questions covering:

- Information gained through the translational science coursework; and
- The basic knowledge required for the chosen area of research.

The format of the exam and composition of the Qualifying Examination Committee (QEC) will be determined by the TS COGS. Additional criteria may be set by the home institution, such as approval by an institution-specific committee, such as a Graduate Studies Committee (GSC), in addition to the TS COGS. At a minimum, each QEC will have representatives from two UT institutions and at least one graduate faculty member from a discipline outside the student’s main area of study. The QEC will administer the qualifying exam at a set date and time, will utilize the results as the basis for evaluating the student’s performance, and will report its judgment of performance to the TS COGS and the home institution’s committee, if applicable.

The qualifying exam is composed of two parts:

1. Written Exam: The written exam is a series of assignments designed to test the student’s background in translational science and their ability to apply this knowledge to research. Students will have up to three months to complete the written portion of the qualifying exam. Requirements for the written exam will include:
   a. Preparation of a 12-page research grant proposal related to their field but not their specific dissertation project
   b. Preparation of a scholarly systematic review related to the student’s specific research topic
   c. At least one other assignment, such as data analysis, abstract writing, or patent application, as appropriate to the student’s proposed research

2. Oral Exam: The oral exam will consist of presentation of the 12-page research grant proposal (see above) including the background, significance, innovation, impact, methods/approach, proposed analyses, and anticipated problems. The QEC, through questioning, will engage the candidate in a discussion of the proposed research to delineate the strengths and weaknesses of the approach.

Students who do not pass the qualifying exam will have their performance reviewed by the QEC. If the qualifying exam is not passed, the QEC may recommend:

1. specific remediation in areas that require further study, including taking further coursework;
2. the student be allowed to retake the qualifying exam or section(s) of the exam, as appropriate; and/or
3. the student be dismissed from the graduate program.

Dissertation

Candidates must demonstrate their ability to conduct independent research by completing and defending an original dissertation. The research topic is determined by the student in consultation with the supervising professor and the Dissertation Committee. A student must choose a Dissertation Committee by the end of the second semester of study or within 90 days following the student’s admission to candidacy. The Dissertation Committee will include at least four members, but may have additional members if required by the Graduate School of the student’s home institution. Minimum Dissertation Committee requirements are:

1. The Supervising Professor, who will act as the Chair;
2. Graduate faculty from the TS Ph.D. program from the student’s home institution;
3. Graduate faculty from the TS Ph.D. program from a second institution participating in the joint degree program;
4. A member from an outside institution who is not part of the TS Ph.D. program and is an expert in the student’s dissertation field.

Approval of the Dissertation Committee and the completed dissertation will follow the guidelines established by the Graduate School of the student’s home institution.

Final Oral Examination (Defense of Dissertation)

Completion of the dissertation will require a satisfactory final oral examination, as evaluated and approved by the Dissertation Committee. The final oral examination will cover aspects of the dissertation, information derived from the general field of the dissertation research, and other parts of the student’s individualized curriculum as determined by the Dissertation Committee. Satisfactory completion of the final oral examination will be evaluated based on whether the student has:

1. completed all work assigned by the Dissertation Committee;
2. passed all examinations, including the final oral examination;
3. completed the minimum requirements as outlined in the student’s individualized curriculum plan;
4. completed a dissertation that meets the criteria outlined above for independent investigation and contribution to the scientific discipline; and
5. submitted an approved abstract for publication in Dissertation Abstracts International.

Following a thorough review of the completion of these requirements, the Dissertation Committee will sign the approval sheets and provide an official recommendation to the TS COGS regarding the award of the doctoral degree.

If the dissertation is considered meritorious by a majority vote of the TS COGS, the TS COGS will accept the Dissertation Committee’s
approval and then inform the Graduate School of the student's home institution. Final acceptance of the doctoral dissertation is accomplished by majority vote of the Graduate council or committee of the student’s home institution. The TS COGS will also inform the Graduate Schools of the other UT components.

Program of Study

The TS Ph.D. curriculum is designed to meet requirements and display expertise in eight educational domains:

1. Understanding translational science
2. Responsible research conduct
3. Research design and analysis
4. Lead, motivate, and manage collaborative team science
5. Utilization of multi-level cultural proficiency
6. Effective scientific communication
7. Competence in the business of translational science
8. Evidence-based policy and implementation

A. Core Courses

A minimum of 24 semester credit hours must be taken in courses with content specific to the eight educational domains for the TS Ph.D. program. For some domains, only one course is available. For others, equivalent courses are offered on multiple campuses—UTSA, UTHSCSA, UTCOP (UT Austin College of Pharmacy), and UTSPH (UT School of Public Health San Antonio Regional Campus). The TS COGS will evaluate each university's curriculum annually and may approve courses not included on this list. The courses selected to meet the core course requirements must be approved by the academic advisor/supervising professor prior to enrollment. Core courses may be selected from:

Domain 1: Understanding of Translational Science

UTHSCSA MEDI 6001 Introduction to Translational Science

Domain 2: Responsible Research Conduct

UT Austin PGS 182W Ethics in Science and Clinical Practice
UT Austin PGS 185D Responsible Conduct of Science
UTHSCSA MEDI 5070 Responsible Conduct of Patient-Oriented Clinical Research

Domain 3: Research Design and Analysis

UT Austin EDP 382K Correlation and Regression Analysis
UT Austin EDP 482K Quantitative Methods: Experimental Design & Statistical Inference
UT Austin EDP 381W Molecular Biology in Translational Research
UT Austin PGS 383Q Statistics in Translational Science

UT Austin PGS 390K Experimental Design and Research Methodology in Pharmacy Admin
UTHSCSA BIOC 6035 Drug Design and Discovery
UTHSCSA CSBL 5095 Experimental Design and Data Analysis
UTHSCSA MEDI 5071 Patient-Oriented Clinical Research Methods-1
UTHSCSA MEDI 5072 Patient-Oriented Clinical Research Biostatistics-1
UTHSCSA MEDI 6060 Patient-Oriented Clinical Research Methods-2
UTHSCSA MEDI 6061 Patient-Oriented Clinical Research Biostatistics-2
UTSA PSY 5413 Inferential Statistics
UTSA PSY 6213 Correlation and Regression Analyses
UTSA PSY 7013 Advanced Research Design
UTSA SOC 5083 Advanced Quantitative Research Methods
UTSA STA 5103 Applied Statistics
UTSA STA 6833 Design and Analysis of Experiments
UTSPH PH 1610 Introduction to Biostatistics
UTSPH PH 1690 Foundations of Biostatistics
UTSPH PH 1700 Intermediate Biostatistics
UTSPH PH 1820 Applied Statistical Analysis
UTSPH PH 2710 Epidemiology III

Domain 4: Leadership and Team Science

UTSA MGT 5093 Leadership
UTSPH PH 3998 Special Topics in Management & Policy Science: Strategic Leadership
UTSPH PH 5200 Foundations in Leadership in Public Health

Domain 5: Cultural Proficiency

UT Austin HED 395 Advanced Topical Studies: Social Determinants of Health
UTSA MGT 5043 Management of Behavior in Organizations
UTSA SOC 5133 Sociology of Health and Health Care
UTSPH PH 1110 Social and Behavioral Aspects of Community Health
UTSPH PH 3998L Working with Diverse Communities
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### Domain 6: Scientific Communication

| UT Austin | PGS 290R Medical Writing and Communication |
| UT Austin | PGS 381V Communication Skills in Translational Science |
| UT Austin | PHR 487Q Communication Skills for Scientists |
| UTHSCSA  | MEDI 5075 Scientific Communication |

### Domain 7: Business of Translational Science

| UTSA       | MOT 5173 Technology Transfer: The Theory and Practice of Knowledge Utilization |
| UTSA       | MOT 5323 Biotechnology Industry |

### Domain 8: Evidence-based Policy and Implementation

| UT Austin | PGS 393Q Health-Related Quality of Life Measurements |
| UTHSCSA   | MEDI 6065 Health Services Research |
| UTSPH     | PH 3630 Health Program Planning, Implementation, & Evaluation |
| UTSPH     | PH 3920 Health Services Delivery and Performance |

### B. Topics in Translational Science Seminar

Enrollment is required for a minimum of 2 semester credit hours and these count toward the Elective credits listed below.

| UTHSCSA | MEDI 6101 Topics in Translational Science |

### C. Electives

A minimum of 18 semester credit hours is required (12 hours in the selected track and 6 hours of free electives). These can be selected from many graduate-level courses offered at any of the four participating institutions. The courses selected should contribute to the student’s research and career needs and must be approved as part of the student’s individualized degree plan by the academic advisor/supervising professor prior to enrollment.