2023-2024
Program, Policies, and Guidelines

Master of Science in Clinical Investigation and Translational Science (MSCI-TS)

Helping forge the bridge
between basic research and human studies

Graduate School of Biomedical Sciences
University of Texas Health San Antonio

MSCI-TS Program policies and guidelines are in compliance with those established by the UT System (http://www.utsystem.edu/) Board of Regents (https://www.utsystem.edu/offices/board-regents/regents-rules-and-regulations), The UTHSCSA (http://www.uthscsa.edu/hop2000/), and the Graduate School of Biomedical Sciences (http://gsbs.uthscsa.edu/). The *Catalog* (http://catalog.uthscsa.edu/) of UT Health San Antonio provides general information and regulations that relate to students. In the event of discrepancies between MSCI-TS Program policies/guidelines and those established by UT governing components, those described by the governing components will prevail.

The policies of the MSCI-TS Program are regularly reviewed and updated; therefore, this copy may not be the most current. Current policies are provided in the MSCI-TS Handbook that is electronically available at the MSCI-TS website: http://iims.uthscsa.edu/ed_msci_handbook.html

UT Health San Antonio
Institute for Integration of Medicine & Science

Master of Science in Clinical Investigation and Translational Science
Institute for Integration of Medicine & Science/
Office of Research Education and Mentoring
UT Health San Antonio
7703 Floyd Curl Drive
San Antonio, Texas 78229-3900
210-567-4304 (voice)
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The UTHSCSA is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (http://www.sacscoc.org/) (1866 Southern Lane, Decatur, Georgia 30033-4097; telephone number 404-679-4501) to award certificates, and baccalaureate, masters, doctoral, and professional degrees.
MSCI-TS Program, Policies, and Guidelines — Graduate School of Biomedical Sciences

Master of Science in Clinical Investigation and Translational Science (MSCI-TS)

Program, Policies, and Guidelines

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UT Health San Antonio
GRADUATE SCHOOL OF BIOMEDICAL SCIENCES

MSCI-TS AIMS/OBJECTIVES

The goal of this program is to prepare investigators skilled in the conduct of outstanding clinical and translational research in culturally diverse settings.

The specific aims of the MSCI-TS Program are to:

- Support the intellectual environment at UT Health San Antonio (UTHSA) for the optimal training of future clinical and translational investigators.
- Provide fundamental curricular activities and valuable training opportunities in clinical and translational research to UT Health San Antonio students, postdoctoral trainees, and faculty from the Schools of Medicine, Nursing, Dentistry, Health Professions, and Graduate School of Biomedical Sciences (GSBS) as well as from local organizations that are partnered with UT Health San Antonio.

The aims of the MSCI-TS Program will be achieved *via* completion of objective activities:

- Participation and successful completion of required didactic coursework
- Establishment of an approved Supervising Professor, Research Supervising Committee (RSC) and research project proposal
- Active involvement in an approved research project
- Formal, semi-annual assessment of progress
- *Submis*sion of an approved manuscript for peer-reviewed publication
- Award of the Master of Science degree in Clinical Investigation and Translational Science (MSCI-TS)

Applicant Eligibility Requirements

All applicants should have a sufficient educational background in the biological or biomedical sciences prior to application/admission to the program. It is expected that most applicants will have a health professional degree (e.g., MD, DDS/DMD, or BS in nursing and/or allied health) or a BS/BA or MS degree with emphasis in a health-related discipline. The following general requirements will be applied:

1. A medical, dental, masters and/or baccalaureate degree from an accredited institution in the United States or an U.S. equivalent degree and training at a foreign institution. All transcripts from foreign institutions (including GPA) must be evaluated and submitted by an approved **NACES member** foreign credentialing evaluation agency. The MSCI-TS preferred agencies are: The Educational Credential Evaluators, Inc. **(ECE)** or the World Education Services, Inc. **(WES)**.
2. A **Grade Point Average** (GPA) no lower than a B (3.00 in a 4.00 system) in the last 60 hours of coursework for a BS/BA degree or a GPA of at least 3.0 for applicants with a MS degree.
3. A minimum score of 84 on the internet-based version of the Test of English as a Foreign Language (TOEFL), a band score of 7.0 on the Academic version of the International English Language Testing System (IELTS) or a minimum score of 115 on the Duolingo English Test for applicants from countries where English is not the native language.

Applicant Documentation Requirements

Official test scores, transcripts, and foreign transcript evaluations, described above and below, **MUST** be sent at the time of application directly from your university, foreign credentialing evaluation agency, and English Testing Scores to:

Registrar's Office-Graduate Admissions - MSC 7702
UT Health San Antonio, 7703 Floyd Curl Drive
San Antonio, Texas 78229-3900

Applicants should utilize the Applicant Checklist of required documentation for admission. This form is available on the MSCI-TS Forms webpage. Additionally, an example can be found in the Appendices of this Handbook.

All **required** information described below **must** be submitted for an application to be considered complete by the MSCI-TS Admissions Review Committee. Requests for an exemption to any of these general admission requirements should be addressed to the MSCI-TS Program Director and sent directly to the MSCI-TS Academic Coordinator (Machuca@uthscsa.edu).

Required Documentation:

1. **Completed and submitted GSBS online application.** The GSBS online application can be found on the GSBS homepage.
2. **Official transcripts** from **ALL** colleges and universities attended.
3. A Course by Course Translation of All transcripts from international institutions (including GPA) **must be evaluated and submitted by an approved NACES member** international credentialing evaluation agency.
4. **Official TOEFL or IELTS (academic version) scores** taken within the past two (2) years for international applicants.
5. **Three (3) Letters of Recommendation** attesting to the applicant's readiness for graduate level studies in clinical investigation and translational science. These letters of recommendation should be uploaded by the individual recommenders who will receive an e-mail from the EMBARK online application system with a link to the Recommendation Form.
    - **Residents/Fellows** in an approved UT Health San Antonio residency or fellowship program are required to submit one (1) of the three (3) letters from the departmental chair with a statement indicating the availability and approval of release time for the completion of the MSCI-TS educational and research activities.
    - **Staff** employed at UT Health San Antonio are required to submit one (1) of the three (3) letters from their authorized supervisor with a statement indicating the availability and approval of release time for the completion of the MSCI-TS educational and research activities.
    - **Faculty (non-tenured only)** at UT Health San Antonio are required to submit one (1) of the three (3) letters from the Chair of their department. In addition, the Chair's letter must have the approval signatures of both the Dean of the school that houses the department and the President of UT Health San Antonio. (See the Handbook of Operating Procedures (HOP), Policy 3.2.5)
    - **International Applicants are required** at the time of application to submit one (1) of the three (3) letters from a UT Health San Antonio Faculty member stating their willingness to serve as the applicant's Supervising Professor for the duration of their time in the MSCI-TS program.
6. **Statement of Purpose** (a.k.a. Personal Statement) (1-2 pages) that includes a brief description of the applicant's educational background. The applicant should express their long-term research and career goals, and clearly state how the MSCI-TS educational curriculum will fit in with and enhance their career objectives. The Statement of Purpose should be submitted with the online application to the GSBS.
7. **Current curriculum vitae.** This should be submitted with the online application to the GSBS.
8. **Copy of current visa** (International Applicants).
9. **Copy of U.S. Medical License/Certificate** for licensed health care professionals.

Application Process

Application: An online application for admission into the MSCI-TS Program must be processed through UT Health San Antonio Graduate School of Biomedical Sciences (GSBS). This application is available at: uthscsa.edu/academics/biomedical-sciences/what-know-you-apply.

For admission into the Graduate School of Biomedical Sciences (GSBS), official transcripts from **ALL** colleges and universities attended by an applicant are required, as well as official TOEFL or IELTS (academic version) test scores, if applicable. Furthermore, all transcripts from international institutions must be evaluated/translated by a **NACES member** international credentialing evaluation agency **(preferably by WES or ECE)** and submitted in the online application and an official copy must also be sent to the UT Health San Antonio Registrar's Office Finally, for healthcare professionals applying to the program, a copy of the applicant's medical license or other professional accreditation should also be submitted.

Deadlines: The MSCI-TS Program has an open application policy and will accept applications continually for admission as allowed by the EMBARK online application system. However, GSBS deadlines for admission into a specific academic semester are listed below. **Applications for applicants intending to apply for or transfer a F-1 visa will only be accepted for the Fall semester of each academic year.**

Application Deadlines	
Fall Semester	April 1
International Applicants Requiring a Visa:	
Fall Semester Only:	February 1

Applicants will have the responsibility for the timely submission of application materials to the MSCI-TS Program to meet the deadlines established by the GSBS for registration and course enrollment.

Application Review: After receipt of the online application together with all the required admission documents outlined above, the MSCI-TS Admissions Review Committee (ARC) will review the submitted documents and interview each applicant. The ARC will then provide an admission recommendation to the Dean of the Graduate School for Biomedical Sciences for final approval. Further details will be conveyed via the Academic Coordinator during this admissions process.

The MSCI-TS ARC will review each application individually and will consider: the applicant's undergraduate and graduate course work and degree(s), and, if applicable, TOEFL or IELTS (academic version) tests, research experience, and all other required documentation submitted with the online application or sent directly to the MSCI-TS Academic Coordinator. Research experience is not required but may be beneficial.

After sequential review by the MSCI-TS ARC and the GSBS, applicants will be formally notified of the outcome by the UT Health San Antonio Graduate School for Biomedical Sciences. The MSCI-TS Admissions Committee recommends admission to the most highly qualified applicants regardless of ethnicity, gender, age, sexual orientation, nation of origin, or disability.

Tuition and Fees

Tuition and Fees: Rates for in state and out-of-state student tuition and fees are established by the institution and subject to adjustment. A summary of current rates is provided in the Appendix
(Page 25).

The UT Health San Antonio "Excess Credit Hours Policy" can be found in the UT Health San Antonio Catalog at: http://catalog.uthscsa.edu/generalinformation/excesscredithourspolicy/. **Please Note: under this policy a student who is enrolled in hours beyond the applicable credit hour limit will be charged out-of-state tuition.**

Student Pathways

After admission, MSCI-TS students may begin to complete the requirements for graduation while enrolled as either a full-time or part-time student. Note: Students on a F-1 visa are required to be enrolled as full-time students while completing the requirements for graduation.

Full-Time students: Full-time work is regarded as enrollment in at least eight (8) semester credit hours (SCH) during the Fall and Spring semesters. To complete the MSCI-TS in two years (with approved research project at entry) the student must enroll in at least nine (9) SCH during the Fall and Spring semesters.

For students with an approved research project at the time of admission, this is usually six (6) SCH of didactic seminars/lectures and three (3) SCH of research credit. To enroll as a full-time student upon admission, students must have an approved Supervising Professor, Research Supervising Committee (RSC), and research project at the time of application into the program. If the Supervising Professor, RSC, and research project are established and approved by the MSCI-TS COGS at the time of admission and the student enrolls in at least nine (9) SCH, the full-time student can expect to complete the course requirements for an MSCI-TS within 2 years.

For applicants who anticipate completion of the requirements for graduation within 2 years, it is highly recommended that the Supervising Professor and Research Supervising Committee be identified, and a Research Project Proposal documentation packet be submitted for review at the time of the initial application into the program.

Part-time Students: Part-time students are enrolled for **less than** eight (8) SCH credit hours per semester during the Fall or Spring semesters. Earning the MSCI-TS degree as a part-time student will usually require three (3) to four (4) years. A part-time student must enroll in **at least** four (4) SCH per semester.

UTHSA Faculty and Staff as Students in the MSCI-TS Program: UT Health San Antonio faculty and staff may apply for admission in the MSCI-TS Program. However, faculty must adhere to the HOP Policy 3.2.5. "Work Towards Advanced Degree". The amount of course work that can be taken by faculty or staff in a given semester is subject to the 'quantity of work' rules outlined in the current UT Health San Antonio Catalog and Handbook of Operating Procedures (HOP).

International Applicants/Students in the MSCI-TS Program: Consistent with the aims of the MSCI-TS Program, the MSCI-TS COGS firmly believes that enrollment in courses related to the conduct of clinical investigation and translational science is directly relevant to the research education of fellows, trainees, and students at UT Health San Antonio. Therefore, our international students will not be denied access to any of the MSCI-TS curriculum. Additionally, our F-1/J-1 and H-1B students directly benefit from the MSCI-TS

Program because the marketable skills acquired from our MSCI-TS curriculum will enhance the quality of the candidates' work that they were hired to do under the auspices of these visas and expand the Clinical Investigation and Translational Science workforce beyond our geographic borders. **Any individual on a J-1 or H-1B Research Scholar visa will be referred to the Office of International Services for review and approval.**

Accordingly, the MSCI-TS COGS has agreed to the following enrollment principles for persons with J-1 or H-1B visa status.

1. They may be accepted as a candidate working towards the MSCI-TS degree, but enrollment in classes must be incidental to their primary activities for which they came to UT Health San Antonio.
2. They may enroll as part-time students in up to four (4) SCH of didactic course work per semester; enrollment in more than four (4) SCH requires prior approval from the Office of International Services.
3. They may enroll in research semester credit hours under the supervision of their Supervising Professor. The research semester credit hours are directly relevant to and obtained from the work these individuals are conducting at UT Health San Antonio while on their J-1 or H-1B visa. The number of research semester credit hours allowed per semester will be determined on a case-by-case basis contingent upon the individual circumstances of the student.
4. At no time, will participation in the MSCI-TS Program interfere with the timely completion of the duties and responsibilities for which the visa status was granted to the individual for admission to the United States.

These principles assure that the Federal Rules and Regulations for the visa process are upheld while creating a pathway by which foreign nationals may participate in clinical research education at UT Health San Antonio.

International applicants who seek admission to the MSCI-TS Program as full-time students are required to obtain an F-1 visa.

International applicants/students entering the MSCI-TS Program on a F-1, J-1 or H-1B visa status are required to have an established Supervising Professor at the time of application. This should be reflected in one of the applicant's Letters of Recommendations submitted in the application.

Non-Degree Seeking Students in the GSBS: Individuals wishing to enroll in MSCI-TS courses without admission into the MSCI-TS Program can do so either as a student from a different GSBS graduate degree program or as a non-degree seeking student who has applied and been accepted into the GSBS Non-degree Seeking Student Program. (Note: GSBS non-degree seeking students are independent of the MSCI-TS Program.) Individuals who have matriculated in other UT Health San Antonio schools (e.g., Medical School, Dental School, Nursing School, or the School of Health Professions) as well as faculty, staff, or other employees will be required to complete a GSBS online application for acceptance into the GSBS Non-degree Seeking Student Program. The appropriate MSCI-TS Course Director must approve the enrollment of any GSBS non-degree seeking student in their course by signing the GSBS non-degree seeking student's course card (provided by the GSBS Dean's office).

Course credit earned as a GSBS non-degree seeking student can be applied towards an MSCI-TS degree following formal application and acceptance into the MSCI-TS Program. A Master of Science in Clinical Investigation and Translational Science degree cannot be obtained as a GSBS non-degree seeking student. If an applicant has completed all required MSCI-TS courses as a non-degree seeking student in the GSBS, they must be eligible to enroll in the MSCI-TS course, Mentored Research in Clinical Investigation (TSCI 6097), at the time of application to the MSCI-TS program. Therefore, they must have identified a Supervising Professor, Research Supervising Committee, and submitted their Research Project Proposal documentation packet as part of their application.

Degree Requirements

Successful completion of the MSCI-TS Program requires 1) the satisfactory completion of all required coursework (19 SCH Required/11 SCH Elective), 2) submission and MSCI-TS COGS approval of a Research Project Proposal (including establishment of a Supervising Professor and Research Supervising Committee to guide you through the process), and 3) the submission of the student's MSCI-TS COGS approved manuscript to a peer-reviewed journal.

Students who are accepted into the MSCI-TS Program are required to establish a Supervising Professor at either the time of application (encouraged) or within one year of admission to the program (International Students must establish a supervising professor at the time of application). Additionally, the student must establish their Research Supervising Committee after the establishment of their Supervising Professor. It is the responsibility of the student to seek out a MSCI-TS Graduate Faculty member and establish their commitment to serving as their Supervising Professor.

***Coursework*:** Thirty (30) semester credit hours (SCH) are required to obtain the MSCI-TS degree. Students must satisfactorily complete all *required courses*. Students must complete:

- 19 SCH of required courses
- 11 SCH of elective courses.

***Research Project Proposal*:** One of the main degree requirements of the MSCI-TS degree is to have students produce a Research Project Proposal (RPP) under the direction of their Supervising Professor (SP) and their Research Supervising Committee (RSC). Click Here for the Research Project Proposal Checklist.

***Manuscript*:** The final degree requirement for a student to complete the MSCI-TS program is submission and approval of a manuscript to a peer-reviewed journal and final approval of the submitted manuscript by the MSCI-TS COGS. Once the Manuscript is approved and all other requirements have been completed successfully, the MSCI-TS COGS will then submit a graduation recommendation to the Dean of the Graduate School for Biomedical Science for awarding of the MSCI-TS degree. Click Here for the Manuscript Submission Checklist.

Supervising Professor

Supervising Professor: The Supervising Professor will oversee all aspects of the student's research project and must be a member of the MSCI-TS Graduate Faculty. The Supervising Professor will act as a guide to help the student through the process of establishing a Research Supervising Committee, Research Project Proposal, and the collection of data, analysis and writing of their Research Project Proposal and later their manuscript.

If a student identifies a Supervising Professor who is not a member of the MSCI-TS Graduate Faculty, the MSCI-TS COGS will separately assess the qualifications of that individual for recommendation to the GSBS for appointment to the MSCI-TS Graduate Faculty. Requests for consideration of appointment to the MSCI-TS Graduate Faculty may be considered concurrently with the evaluation of an individual to serve as a student's Supervising Professor.

Details and requirements for MSCI-TS Graduate Faculty appointment are provided in the MSCI-TS (Programmatic) Graduate Faculty section of the MSCI-TS Handbook. No Supervising Professor may have more than five (5) MSCI-TS students at a given point in time; exception to this limit requires special consideration by the MSCI-TS COGS.

The proposed Supervising Professor must submit a letter of commitment to be included in the student's Research Project Proposal documentation packet forwarded to the MSCI-TS COGS through the MSCI-TS Academic Program Coordinator. The letter of commitment must include the following:

- Brief overview of the planned research project that has been reviewed and approved by the student's Research Supervising Committee.
- Explicit description of the student's role/activities in the research project
- Statement of commitment to the student's education and training throughout the interval of the student in the MSCI-TS Program
- If the student is a foreign national on a J-1, H-1B, or F-1 visa, the Supervising Professor must submit a letter with a statement of commitment to the student's education and training bi-annually prior to the beginning of each semester.

The Supervising Professor must be established within one year of enrollment into the MSCI-TS program along with the Research Supervising Committee, Research Project Proposal and Student/Supervising Professor Compact. Exceptions must be approved by the MSCI-TS COGS and will be evaluated on a case-by-case basis after submission of a written request to the MSCI-TS Program Director through the MSCI-TS Academic Program Coordinator.

Research Supervising Committee

Research Supervising Committee: The student, with the help of his/her Supervising Professor, will select a Research Supervising Committee (RSC). The RSC shall consist of the Supervising Professor (chair), a member of the MSCI-TS COGS, a member of the MSCI-TS Graduate Faculty; and an External Expertise-Specific member to provide specific expertise in the planned area of study. The RSC must be comprised of four (4) separate members, including the external expertise-specific member, as members of the student's Research Supervising Committee cannot serve in multiple roles within the Committee. The RSC will advise and guide the student on their Research Project Proposal and manuscript development.

The RSC must be established within one year of enrollment into the MSCI-TS program. Exceptions must be approved by the MSCI-TS COGS and will be evaluated on a case-by-case basis after submission of a written request to the MSCI-TS Program Director through the MSCI-TS Academic Program Coordinator.

Research Project Proposal

Research Project Proposal*:** The first duty of the Research Supervising Committee will be to assist the student in (1) planning his/her research project, and (2) approving the research proposal for review by the MSCI-TS COGS. It is anticipated that the project/written proposal will be the student's work. The written proposal should not exceed ***six double-spaced typewritten pages and should include the following sections:

- Hypothesis
- Specific Aims
- Significance (with background, references, and rationale for the proposed studies)
- Experimental Design (including study population/specimen type(s), number of planned subjects/observations, recruitment/procurement plan for subjects/specimens, methods/procedures to be applied to subjects/specimens, and analytic plan, including statistical software package(s) to be utilized)
- References (*not included in the 6-page limit*)

The student submitting the Research Project Proposal is required to briefly present their project to the MSCI-TS COGS and answer any questions during the COGS review. The Student's RSC COGS Member must also be present for the presentation and review.

Once the written research proposal has been approved by the RSC, the proposal shall be forwarded to the MSCI-TS Academic Coordinator/COGS for review and approval action. The research proposal must be accompanied by:

1. RSC List and Signature Approval of Research Project Form
2. Supervising Professor's letter of commitment
3. Supervising Professor's curriculum vitae
4. External Expertise-Specific Faculty's curriculum vitae
5. Research Project Proposal
6. Research Proposal Assessment Form
7. Student/Supervising Professor Compact

After MSCI-TS COGS approval, the student will begin participating in mentored research activities under the direction of the Supervising Professor and can register to receive research course credit (TSCI 6097 – Mentored Research).

TSCI 6097 – Mentored Research

The TSCI 6097 – Mentored Research course is set up for the student to conduct their Research Project under the direction of their Supervising Professor. The MSCI-TS Academic Coordinator will provide the student and Supervising Professor with the Planned Activities Form to be completed and then approved by the MSCI-TS Program Director before enrolling in TSCI 6097, in which the student and Supervising Professor will detail a tentative plan that describes their planned activities for the MSCI-TS COGS approved Research Project Proposal (RPP). This time is to be spent directly working on the project and includes, but is not limited to, writing consent forms, collecting data, analyzing data, and preparing a manuscript.

To receive credit for the course, the student and their Supervising Professor must submit a Satisfactory **Completion of Planned Activities Form** to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator at least two weeks prior to the deadline for submitting grades.

Change in Supervising Professor, Research Supervising Committee or Research Project Proposal

Change in Supervising Professor, Research Supervising Committee (RSC), or Research Project: If it becomes necessary for a student to change his/her Supervising Professor, RSC, or research project proposal after approval by the MSCI-TS COGS, the MSCI-TS COGS must review and approve any changes prior to implementation.

Changing a Supervising Professor: Any change in the designated Supervising Professor requires review and approval by the MSCI-TS COGS. This request should be submitted in writing to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator and should include:

1. Cover memo that describes the basis for the request to change the Supervising Professor
2. A letter of commitment from the proposed Supervising Professor (with details as described above for the initial Supervising Professor's letter of commitment)

3. Curriculum Vitae of the proposed Supervising Professor
4. Compact Between MSCI-TS Student and Supervising Professor form (see Appendix)
5. Request to Amend MSCI-TS Student Research Proposal form (see Appendix)

Changing a Research Supervising Committee (RSC): Any change in membership in an approved RSC requires review and approval by the MSCI-TS COGS. This request should be submitted in writing to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator and should include:

1. Cover memo that describes the basis for the request to change the Research Supervising Committee membership
2. Request to Amend MSCI-TS Student Research Proposal form (see Appendix)

Changing a Research Project: Significant changes in the planned research project (e.g., addition or deletion of a Specific Aim or substantial modifications in experimental design or scope of research studies to be undertaken) must be reviewed and approved by the Supervising Professor and RSC prior to review and approval action by the MSCI-TS COGS. The written request to change the research project must be submitted to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator and should include:

- The revised research proposal (with details as described above for the initial research proposal)
- Cover memo that describes the basis for the request to change the research project
- Request to Amend MSCI-TS Student Research Proposal form (see Appendix)

Manuscript Requirement

A basic tenet of the MSCI-TS Program is the expectation that MSCI-TS students should make a significant contribution to the peer reviewed literature. Thus, upon satisfactory completion of all required courses, and with the approval of the Supervising Professor and Research Supervising Committee (RSC), each student is required to submit a manuscript to the MSCI-TS COGS for review and approval towards their eligibility for candidacy for the MSCI-TS degree. **Due in (Spring) March 15th/ (Fall) October 15th.**

- The manuscript must have already been submitted to a peer reviewed scientific journal – it may have been submitted, in press, or published during the interval that the student was enrolled in the MSCI-TS Program.
- Manuscripts unrelated to the approved research project, such as case reports or book chapters, are not acceptable for completion of the manuscript requirement of the MSCI-TS degree.
- Students are not required to be the first author on the manuscript but must be a primary author. It is the consensus of the MSCI-TS COGS that the primary author is demonstrated as the 1st or 2nd author on a peer-reviewed publication. It is expected that students will be (or will share the position of) the primary author and that the manuscript will address the research project that was approved by the MSCI-TS COGS. If either of these is not the case, a detailed written explanation must be provided by the Supervising Professor.
- The manuscript should be provided to the Research Supervising Committee for review and approval *at least 2 weeks* prior to submission to the MSCI-TS COGS. When submitted to the RSC:
    - It is required that the manuscript be evaluated by the Research Supervising Committee **prior** to submission for publication.
- The manuscript must be accompanied by a letter from the Supervising Professor that details the extent of the student's participation in each stage of the research as well as their involvement/role in the development and preparation of the manuscript.

- After approval by the Research Supervising Committee, the Manuscript Approval Form should be completed and signed/dated by all members of the Research Supervising Committee.
- The manuscript can be submitted to the MSCI-TS COGS at any time; however, in cases with impending graduation deadlines, the approved manuscript should be provided to the MSCI-TS COGS **at least two months (OCT/MAR) prior** to the regularly scheduled graduation date established by the Graduate School of Biomedical Sciences (GSBS).
- The student submitting the manuscript is required to briefly present their manuscript to the MSCI-TS COGS and answer any questions during the COGS review. The Student's RSC COGS Member must also be present for the presentation and review.
- When the manuscript is submitted to the MSCI-TS COGS, it should be accompanied by:
  1. Manuscript Approval Form
  2. Supervising Professor's Letter (described above)
  3. Journal Submission Date: A dated notice (letter or e-mail) from the publisher that indicates manuscript submission/acceptance
  4. Student's Manuscript, including tables and figures
  5. Manuscript Assessment Form (see Appendix)
- In keeping with the responsible conduct of research, all manuscripts must comply with the specific requirements of the journal (*e.g.*, responsibilities of the corresponding author, conflict of interest statement). There will be no exception to this requirement.
- The MSCI-TS manuscript requirement applies to all students who seek to complete the MSCI-TS Program.

Coursework & Grading

Thirty semester credit hours (SCH) are required to obtain the MSCI-TS degree.

***Required Courses*:** Students in MSCI-TS Program must successfully complete the following 19 semester credit hours (SCH) of didactic required courses.

TSCI 5070 (2 SCH)	Responsible Conduct of Research
TSCI 5071 (2 SCH)	Patient-Oriented Clinical Research Methods -I
TSCI 5072 (2 SCH)	Patient-Oriented Clinical Research Biostatistics - I
TSCI 5073 (1 SCH)	Integrating Molecular Biology with Patient-Oriented Clinical Research
TSCI 5074 (2 SCH)	Data Management, Quality Control, and Regulatory Issues
TSCI 5075 (2 SCH)	Scientific Communication
TSCI 5080 (1 SCH)	Integrating Molecular Biology with Patient-Oriented Clinical Research Practicum **(Prerequisite: TSCI 5073)**

TSCI 6001 (1 SCH)	Introduction to Translational Science
TSCI 6060 (2 SCH)	Patient-Oriented Clinical Research Methods -2 **(Prerequisite: TSCI 5071)**
TSCI 6061 (2 SCH)	Patient-Oriented Clinical Research Biostatistics – 2 **(Prerequisite: TSCI 5072)**
TSCI 6065 (2 SCH)	Health Services Research **(Prerequisite: TSCI 5071 & TSCI 6060)**

***Research Course*:** After an MSCI-TS student has received **approval of their Research Project Proposal by the MSCI-TS Committee on Graduate Studies (COGS),** they may enroll to receive course credit (1.0 – 4.5 SCH) for mentored research (TSCI 6097).

TSCI 6097 (1-4.5 SCH)	Mentored Research in Clinical Investigation-Translational Science **(Prerequisite: MSCI-TS COGS Approved Research Project/Approved Planned Activities Form)**

MSCI-TS students must enroll in TSCI 6097 Mentored Research for at least two semesters to be eligible for consideration for graduation. The MSCI-TS Academic Coordinator will provide students with a Planned Activities form to be completed before enrolling in TSCI 6097, in which the student will detail a tentative plan that describes their planned activities for the MSCI-TS COGS approved Research Project Proposal (RPP). The Planned Activities form will outline the types of planned activities related to the approved research project and the number of hours dedicated to each per week and will thereby determine the number of semester credit hours (SCH) the student is eligible to enroll in for TSCI 6097. To receive the requested credit for the course, the student and his/her Supervising Professor must submit a Satisfactory Completion of Planned Activities Form to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator at least two weeks prior to the deadline for submitting grades.

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***Thesis Course*:** MSCI-TS Students wishing to graduate are required to enroll in 1.0 semester credit hour (SCH) of TSCI 6098 Thesis during the semester in which they plan to graduate (not to exceed two semesters). It is required that MSCI-TS graduating students enroll in TSCI 6098 Thesis during the semester in which they will be submitting their manuscript to the MSCI-TS COGS for approval. Prerequisites to enroll in this course are that the student must have an approved **research project proposal and have enrolled in at least two semesters of TSCI 6097 – Mentored Research.**

Semester Credit hours accrued for TSCI 6097 and TSCI 6098 will count towards the student's Elective requirement.

TSCI 6098 (1 SCH)	Thesis

***Elective Courses*:** 11 SCH of diverse elective courses are sponsored by the MSCI-TS Program and are available and may be taken in any semester when offered. These include:

TSCI 5050 (1.0 SCH)	Introduction to Data Science
TSCI 5077 (1 SCH)	Translational Science Practicum **Prerequisite: Consent of the Course Director/ Contact Coordinator**

TSCI 5201 (3 SCH)	Advanced Statistics for Machine Learning Methods: Statistical Principles of Machine Learning Applied to Biomedical Data
TSCI 5230 (3 SCH)	Programing for Biomedical Data Science
TSCI 6069 (2 SCH)	Statistical Issues, Planning, and Analysis of Contemporary Clinical Trials **(Prerequisite: TSCI 5072 & TSCI 6061)**
TSCI 6070 (2.0 SCH)	Biostatistics Methods for Longitudinal Studies **(Prerequisite: TSCI 5072 & TSCI 6061)**
TSCI 6100 (1 SCH)	Practicum in IACUC Procedures
TSCI 6101 (1 SCH)	Topics in Translational Science
TSCI 6102 (1 SCH)	Practicum in IRB Procedures
TSCI 6105 (1 SCH)	Topics in Cancer Prevention
TSCI 6106 (1 SCH)	Practicum in Cancer Prevention Science
TSCI 6201 (1 SCH)	Data Science Leadership in Healthcare
TSCI 6202 (2 SCH)	Data Visualization and Building Applications **(Prerequisite: TSCI 5230)**
TSCI 6203 (1 SCH)	Practicum in Biomedical Data Science **(Prerequisite: TSCI 5201)**

In addition to the elective courses outlined above, requests for substitution of other graduate level courses will be considered on a case-by-case basis. A written request for consideration of alternative elective coursework must be submitted to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator.

Timeline for Coursework: A typical schedule for a full-time MSCI-TS student is provided in the Appendices together with descriptions of MSCI-TS Program-sponsored courses.

***Grade Requirement*:** Student performance in MSCI-TS-sponsored Program courses is assessed on a satisfactory (S) / unsatisfactory (U) basis. Any student who receives less than a Satisfactory (S) assessment in any of the requisite MSCI-TS core courses will be required to re-take the course and receive a passing grade during the next academic year. In the event of a second failure in the same course, the MSCI-TS COGS will provide a recommendation as to whether the student is to be dismissed from the MSCI-TS Program.

Exemption of Required Course: Exemption of the requirement for completion of a required course will be considered by the MSCI-TS COGS on a case-by-case basis. A written request for exemption of a required course must be submitted to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator and should include a brief description of the reason(s) for the request as well as documentation (publications, meeting abstracts, etc.) supporting the reason(s) for the request.

***Transfer of Coursework for Credit*:** If a student has successfully completed graduate level coursework that is duplicative of required or elective MSCI-TS courses, it is possible that transfer of course credit may be allowed. A written request for consideration of transfer of course credit in substitution for a given MSCI-TS course must include the following documentation and be submitted to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator.

1. A written request that includes a comprehensive description of the prior course detailing when and where completed, course semester credit hours, and details of course content and objectives.
2. An official copy of the student's transcript that indicates successful course completion and the grade issued.
3. A copy of the course description from the catalog that was in effect during the semester the course was taken.
4. A course syllabus is suggested but not required.

MSCI-TS COGS approval of a request for course exemption does not grant the student credit for the semester credit hours associated with the course. The semester credit hours for the exempted course can be obtained by taking a MSCI-TS elective course or additional mentored research hours. Transfer of coursework for credit is described below.

If the transfer of credit request is approved by the MSCI-TS COGS, the MSCI-TS Academic Coordinator will prepare a request for transfer of course credit and submit it to the GSBS for consideration/approval by the Dean. In no case will the allowable semester credit hour(s) of transfer for a given course exceed that of the corresponding MSCI-TS course. As per GSBS rules, no more than 6 semester credit hours may be transferred towards the completion of a Master of Science degree.

Coursework during the Semester of Graduation: Other than TSCI 6097 Mentored Research or TSCI 6098 Thesis, students **cannot** be enrolled in coursework towards the 30-semester credit hour requirement during the semester of graduation.

Class Attendance and Makeup Policy

***Attendance*:** The UT Health San Antonio MSCI-TS faculty believes that attendance at scheduled classes and examinations is crucial to meeting course and program objectives. Therefore, regular attendance in class is expected of each student. Attendance is defined as being present within 15 minutes after the scheduled beginning of the class and until 15 minutes before the scheduled ending of the class.

Excused absences may be granted by the Course Director in cases such as formal presentations at scientific meetings, illness, or personal emergency. Excused absences are considered on an individual basis and require electronic communication with the Course Director to request an excused absence. The e-mail request to the Course Director for consideration of an excused absence must provide details regarding the circumstances and specific dates. It is expected that students will provide *advanced notice* of absence for scheduled events.

Repeated unexcused absences make it impossible to achieve course objectives. Thus, if a student has excessive unexcused absences in any course, they will automatically receive a grade of unsatisfactory unless *makeup* has been approved by the Course Director (see below). Allowable unexcused absences will be determined by the credit hours of the course as follows:

Course Credit Hours	Allowable Unexcused Absences
3	**3**
2	**2**
1	**1**

***Absence Makeup*:** Makeup of absences (both excused and unexcused) is allowed at the discretion of the Course Director.

Other MSCI-TS Program Requirements

Laptop Computer Requirement: The MSCI-TS Program requires each student to have a laptop computer that can connect to and operate over a wireless network. Software required:

- Microsoft Office Suite (A personal copy of the latest version can be purchased at UT Health San Antonio bookstore at student pricing with a student ID)
- R & R Studio (Open source, free, latest version)
  https://www.rstudio.com/products/RStudio/
  https://www.r-project.org/

Laptops with an Apple Mac-based operating system must be able to also perform as a PC-based operating system.

All laptops will connect to UT Health San Antonio network via the HSCwave broadcast wireless connection. Authentication for wireless use is based on The UTHSCSA domain username and password. Verification of proper operation **prior** to the start of class is highly recommended.

Assistance is available thru the IMS Service Desk (210-567-7777 or ims-servicedesk@uthscsa.edu). Assistance is also available at the IMS Student Support Center (ALTC 106).

Semi-Annual Student Evaluation

Students with an MSCI-TS COGS-approved research project proposal will be evaluated by the Supervising Professor and Research Supervising Committee (RSC) **once every six months throughout the remainder of their enrollment in the MSCI-TS Program.** The Student/Supervising Professor Compact will be reviewed by the Student/Supervising Professor and submitted annually by August 31st of each year. Additionally, the semi-annual student evaluation must be submitted to the MSCI-TS COGS/ Semi-Annual Review Committee by ***August 31st and February 28th*** of each year. Once a student has completed all requirements for completion of the MSCI-TS Program, no further semi-annual evaluations or reviewed Student/Supervising Professor Compacts will be required.

Requests for extension of the deadline for submission of all documents associated with the semi-annual evaluation (see below) and Student/Supervising Professor Compact will be considered on a case-by-case basis. A written request for extension should be directed to the MSCI-TS Program Director through the MSCI-TS Academic Coordinator and should describe the reason for the request; this letter must include the signature of the Supervising Professor. Requests must be received by the final Friday of the month **prior** to the due date of the evaluation. **Failure to submit completed, signed forms included in this**

required semi-annual evaluation or to provide a letter requesting an extension of the deadline will result in a grade of unsatisfactory for the research course (TSCI 6097 Mentored Research) in the corresponding semester (Fall semester for the August 31st deadline and Spring semester for the February 28th deadline). A grade of "Unsatisfactory" (U) for 50% or more course credit hours (semester hours) in research shall be grounds for recommendation (to the Dean of the GSBS) for dismissal from the Program. If a student receives a grade of "Unsatisfactory" (U) the semester credit hours (SCH) will not be counted towards the total 30 SCH required for graduation.

To accomplish this evaluation, the student shall submit to the RSC a written report of progress on their research work, including statements of objectives of the research, methods used, major results obtained, conclusions drawn, pre- or reprints of papers submitted for publication, and proposed direction of future work. This will involve completion of the MSCI-TS Semi-Annual Student Evaluation form (by the student and Supervising Professor) and a formal meeting of the student's RSC. The Supervising Professor shall serve as the Chair of the student's Research Supervising Committee and is expected to establish the time and place of the meeting. The student shall be present during this formal meeting of the RSC and is expected to provide a brief overview of his/her research and training activities, any problems encountered since the previous meeting with the RSC, as well as plans towards completion of the requirements in fulfillment of the MSCI-TS Program. If requested, the student may be asked to leave the meeting during Supervising Committee's deliberations.

The RSC will evaluate the research progress made by the student and, if satisfactory, endorse both the progress and the direction of future work to be undertaken. This semi-annual evaluation will include consideration of student participation in and satisfactory completion of required MSCI-TS course work, research, seminars, and other MSCI-TS Program activities.

If progress is unsatisfactory, the RSC shall discuss the reasons for this decision with the student. Then, the Supervising Professor and student shall develop a plan for remediation which is to be submitted with the semi-annual evaluation. In this case, the student will be required to, following the semi-annual evaluation process, submit an updated MSCI-TS Student Semi-Annual Student Evaluation within three months of the original unsatisfactory semi-annual evaluation.

The Supervising Professor will follow up each RSC/student meeting with a memorandum to every member of the RSC specifying the Research Supervising Committee's decisions regarding the outcome of student evaluation including research progress and future work. A copy of this memorandum should be provided to the MSCI-TS Program Director through the MSCI-TS Academic Programs Coordinator together with the MSCI-TS Semi-Annual MSCI-TS Student Evaluation form that includes the Student Progress Report form (see Appendix) for processing and further review by the MSCI-TS Semi-Annual Review Committee prior to presentation to the MSCI-TS COGS.

Failure of a student to show satisfactory progress toward his/her degree goal may be grounds for dismissal from the Program. The MSCI-TS COGS and the Semi-Annual Review Committee, in consultation with the Supervising Professor, will make the final decision regarding a recommendation for student dismissal (to be submitted to the Dean of the GSBS) by the MSCI-TS Program Director. The Dean of the GSBS will be notified of any student who receives unsatisfactory evaluations in two consecutive periods.

Ethics/Professionalism Policy

The MSCI-TS Program expects all students to exhibit the highest standards of conduct, honesty, and professionalism. Academic misconduct includes activities that undermine the academic integrity of the institution. The University may discipline a student for academic misconduct as outlined in The UT Health San Antonio Catalog and Handbook of Operating Procedures. Academic misconduct may involve human, hard-copy, or electronic resources. Policies of academic misconduct apply to all course-, department-, school-, and university-related activities including conferences and off-campus performances as well as research work (including lab experiments, data collection, and analyses). All cases of academic misconduct must be reported to the Dean of the Graduate School of Biomedical Sciences (GSBS) and the seriousness of the violation may be considered in assessing a penalty. Academic misconduct includes, but is not limited to, the following:

Cheating: Any attempt to use or provide unauthorized assistance, materials, information, or access in any form and in any academic exercise or environment is considered cheating and is expressly forbidden. . All students commit to not receiving or giving any aid on the completion of their work in this course including the use of AI text generators. If you are unsure how this might pertain to this course, please contact the course director before submission of any assigned work.

Fabrication: A student must not falsify or invent any information or data including, but not limited to, records or reports, laboratory results, data analyses, and citation to the sources of information.

Plagiarism: Plagiarism is defined as presenting someone else's work as one's own. Ideas or materials taken from another source for either written or oral use must be fully acknowledged. The adoption or reproduction of ideas, opinions, theories, formulas, graphics, or research results of another person without acknowledgment is expressly forbidden. Credit must be given to the originality of others whenever:

- Quoting the works of another
- Using another person's ideas, opinions, or theories
- Paraphrasing the words, ideas, opinions, results, or theories of others
- Borrowing facts, statistics, or illustrative material
- Offering materials assembled or collected by others

Facilitating Academic Dishonesty: A student must not intentionally or knowingly help another student commit an act of academic misconduct, nor allow another student to use his/her work or resources to commit an act of misconduct.

MSCI-TS (Programmatic) Graduate Faculty

The MSCI-TS COGS assesses the qualifications of each individual prior to recommendation to the Dean of the GSBS for their appointment to the MSCI-TS Graduate Faculty. The following must be submitted *via* e-mail to the MSCI-TS Academic Programs Coordinator for MSCI-TS COGS assessment:

- Curriculum Vitae (PDF)
- MSCI-TS Graduate Faculty Trainee Table (Form), a copy of a recent NIH grant trainee table will be accepted in lieu of the MSCI-TS Graduate Faculty Trainee Table.

In consideration of individuals for membership in the MSCI-TS Graduate Faculty, emphasis will be placed upon the following:

- Experience and accomplishments in the provision of mentored research training
- Availability of research funding to support a student's mentored research project
- Research productivity (publications)
- Teaching excellence
- Other scholarly activities

Consistent with the by-laws of the GSBS, all MSCI-TS Graduate Faculty will be automatically reviewed at least once every three (3) years. Requests for appointment to the MSCI-TS Graduate Faculty may be considered concomitantly with the evaluation of an individual to serve as a student's Supervising Professor. A list of current MSCI-TS Graduate Faculty is included in the Appendix

Completion of the MSCI-TS Program

Recommendation for Granting the MSCI-TS Degree: Upon satisfactory completion of all degree requirements, the MSCI-TS COGS must review and approve the recommendation for graduation; the MSCI-TS COGS Chair will then submit a recommendation form to the GSBS Graduate Faculty Council (GFC) through the Dean of the GSBS for further consideration and approval.

Time-to-Master's Degree: It is expected that that the MSCI-TS Program can be completed in 2 years of full-time work. Part-time students may require 3 to 4 years to complete the degree requirements. If an MSCI-TS student who enrolled full-time has not graduated in 3 years (or a part-time student has not graduated in 4 years), the MSCI-TS COGS Chair will form a special committee independent of the Student's Research Supervisory Committee to review progress with the student and his/her advisor. The special committee's responsibility will be to either recommend a course of action to expedite graduation or recommend termination of the enrollment of the student in the program.

Helpful Online Links

MSCI-TS Program	https://iimsprod.wpengine.com/education/education/programs/msci-ts/
MSCI-TS Forms	https://iimsprod.wpengine.com/education/education/programs/msci-ts/forms/
MSCI-TS Plan of Study	https://iimsprod.wpengine.com/education/education/programs/msci-ts/msci-ts-plan-of-study/
Graduate School of Biomedical Sciences (GSBS)	http://gsbs.uthscsa.edu/
GSBS Application for Admission	https://www.uthscsa.edu/academics/biomedical-sciences/what-know-you-apply
GSBS Academic Calendar	http://33hu841nxtz3q9wwt3fihfao-wpengine.netdna-ssl.com/registrar/wp-content/uploads/sites/2/2019/12/GSBS-2020-2021-Calendar.pdf
GSBS Syllabus Depot	http://gsbssyllabus.uthscsa.edu/
Office of Student Services (Registrar)	http://students.uthscsa.edu
Office of International Services	http://www.uthscsa.edu/ois
CANVAS	http://www.uthscsa.edu/university/canvas
UT Health Catalog	http://catalog.uthscsa.edu/
UT Health Handbook of Operating Procedures (HOP)	http://www.uthscsa.edu/hop2000/
Institute for the Integration of Medicine and Science	https://iimsprod.wpengine.com/

Appendices

Page

2023-2024
Committee on Graduate Studies

Helen P. Hazuda, PhD
MSCI-TS COGS Chair

Alex Bokov, PhD
Population Health Sciences

Carrie Jo Braden, RN, PhD
Nursing

Andrew Cap, MD, PhD, FACP
Clinical Investigation Fellowship
San Antonio Military Medical Center

Bandana Chatterjee, PhD
Molecular Medicine

Byeongyeob Choi, PhD
Population Health Sciences

Yong-Hee P. Chun, DDS, MS, PhD
Periodontics

Robert A. Clark, MD
Office of the VP for Research

Bertha E. Flores, PhD, APRN
School of Nursing

Christopher Frei, PharmD, MSc
Pharmacology Ed& Research Cntr

Jonathan Gelfond, MD, PhD
Population Health Sciences

Goutam Ghosh-Choudhury, PhD
Medicine/Renal Diseases

Helen P. Hazuda, PhD
Medicine/Renal Diseases

Teresa Johnson-Pais, PhD
Urology

Krista Kilpadi, PhD
Office of Clinical Research/IRB

Addanki Pratap Kumar, PhD
Molecular Medicine

Kelly C. Lemke, DDS, MSCI-TS
Developmental Dentistry

Timothy D. Raabe, PhD
Graduate School for Biomedical Sciences

Susanne Schmidt, PhD
Population Health Sciences

Joseph O. Schmelz, PhD
Office of the VP for Research

Rudy J. Trevino, MS, CPIA
Research Regulatory Program

Chen-Pin Wang, PhD
Population Health Sciences

2023-2024
MSCI-TS Graduate Faculty

Seema Ahuja, MD
Medicine/Renal Diseases

Sunil K. Ahuja, MD
Medicine/Infectious Disease

Bennett T. Amaechi, BDS, PhD
Comprehensive Dentistry

Antonio R. Anzueto, MD
Medicine/Pulmonary Disease

Cynthia Blanco, MD
Pediatrics/Neonatology

Alex Bokov, PhD
Population Health Sciences

Carrie Jo Braden, RN, PhD
School of Nursing, Dean's Office

Andrew Brenner, MD, PhD
Medicine

Andrew Cap, MD, PhD, FACP
Clinical Investigation Fellowship
San Antonio Military Medical Center

Eugenio Cersosimo, MD
Medicine/Diabetes

Bandana Chatterjee, PhD
Molecular Medicine

Byeongyeob Choi, PhD
Population Health Sciences

Robert A. Clark, MD
Office of the VP for Research

David L. Cochran, DDS, PhD
Periodontics

Jannine D. Cody, PhD
Pediatrics/Cytogenetics

Mark Davies, MD
Surgery

Ralph A. DeFronzo, MD
Medicine/Diabetes

Immaculada del Rincon, MD
Medicine/Clinical Immunology

Agustin Escalante, MD
Medicine/Clinical Immunology

Robert L. Ferrer, MD
Family & Community Medicine

Kristin R. Fiebelkorn, MD
Pathology

Bertha E. Flores, PhD, APRN
School of Nursing

Christopher Frei, PharmD, MSc
Pharmacology Ed& Research Ctr.

Amy Garret, PhD
Psychiatry

Jonathan Gelfond, MD, PhD
Population Health Sciences

Goutam Ghosh-Choudhury, PhD
Medicine/Renal Diseases

Alice K. Gong, MD
Pediatrics

Kenneth Hargreaves, DDS, PhD
Endodontics

Helen P. Hazuda, PhD
Medicine/Nephrology

Martin Javors, PhD
Psychiatry

Teresa Johnson-Pais, PhD
Urology

Balakuntalam S. Kasinath, MD
Medicine/ Renal Diseases

David Katerndahl, MD
Family & Community Medicine

Nancy D. Kellogg, MD
Pediatrics/Child Abuse

Dean L. Kellogg, Jr, MD, PhD
Medicine/Geriatrics

Krista Kilpadi, PhD
Office of Clinical Research/IRB

George B. Kudolo, PhD
Clinical Laboratory Sciences

Addanki Pratap Kumar
Molecular Medicine

Jack L. Lancaster, PhD
Research Imaging Institute

Robin J. Leach, PhD
Cellular and Structural Biology

Senlin Li, MD
Medicine/Infectious Disease

Michael A. Liss, MD
Urology

Donald C. McCurnin, MD
Pediatrics/Neonatology

Joel E. Michalek, PhD
Population Health Sciences

Michael Odom, MD
Pediatrics/Neonatology

Babatunde O. Oyajobi, PhD
Cellular & Structural Biology

Raymond F. Palmer, PhD
Family & Community Medicine

Robert W. Parker, MD
Family & Community Medicine

Thomas F. Patterson, MD
Medicine/Infectious Diseases

Jay I. Peters, MD
Medicine/Pulmonary Diseases

Thomas Prihoda, PhD
Pathology

Rajam S. Ramamurthy, MD
Pediatrics

Patrick S. Ramsey, MD, MSPH
OB-GYN

Yolanda M. Rangel, PhD
Physical Therapy

Marcos Restrepo, MD
Medicine/Pulmonary Disease

Ronald Rodriguez, MD, PhD
Urology

John D. Rugh, PhD
Developmental Dentistry

Joseph O. Schmelz, PhD
Office of the VP for Research

Susanne Schmidt, PhD
Population Health Sciences

Martin G. Schwacha, PhD
Surgery

Wayne H. Schwesinger, MD
Surgery

Steven R. Seidner, MD
Pediatrics/Neonatology

Paula K. Shireman, MD
Surgery/Vascular Surgery

Ronald M. Stewart, MD
Surgery

Kimberly Summers, PharmD
IRB/Research Protection Programs

Rajeshwar R. Tekmal, PhD
Obstetrics and Gynecology

Gail Tomlinson, MD, PhD
Pediatrics/Hematology-Oncology

Devjit Tripathy, MD
Medicine/Diabetes

Ratna K. Vadlamudi, PhD
Obstetrics & Gynecology

Manjeri A. Venkatachalam, MBBS
Pathology

Chen-Pin Wang, PhD
Population Health Sciences

Nathan P. Wiederhold, PharmD
Pathology/Laboratory Medicine

Steven D. Weitman, MD, PhD
Pediatrics

Ross Wills, PhD
Surgery

MSCI-TS Full-Time Plan of Study

First Year		
Fall		**Credit Hours**
TSCI 5070	Responsible Conduct of Research	2
TSCI 5071	Patient-Oriented Clinical Research Methods-1	2
TSCI 5072	Patient-Oriented Clinical Research Biostatistics-1	2
TSCI 6001	Intro to Translational Science	1
TSCI ____	Elective hours	TBD

First Year		
Spring		**Credit Hours**
TSCI 5073	Integrated Molecular Biology with Patient-Oriented Clinical Research	1
TSCI 5074	Data Management, Quality Control and Regulatory Issues	2
TSCI 6060	Patient-Oriented Clinical Research Methods-2	2
TSCI 6061	Patient-Oriented Clinical Research Biostatistics-2	2
TSCI 6097	Mentored Research	1.0-4.5
TSCI ____	Elective hours	TBD

Second Year		
Fall		**Credit Hours**
TSCI 5075	Scientific Communication	2.0
TSCI 5080	Integrating Molecular Biology w/PT-Oriented Clinical Research Practicum	1.0
TSCI 6065	Health Services Research	2.0
TSCI 6097	Mentored Research	1.0 - 4.5
TSCI ____	Elective hours	TBD

Second Year		
Spring		**Credit Hours**
TSCI 6098	Thesis *	1.0

Thirty (30) semester credit hours (**19 SCH of Required/ 11 SCH Elective**) are required to obtain the MSCI-TS degree. **TSCI 6097 and 6098 count toward Elective Hours.**

Enrollment in TSCI 6097 (Mentored Research) may occur in any semester after the Research Project Proposal has been submitted and approved by the MSCI-TS COGS. **TSCI 6097 must be taken twice**.

*****No formal classes should be taken during this semester. The research project should be completed, and a manuscript prepared and submitted to Peer-Reviewed journal and the MSCI-TS COGS at least 2 months prior to their expected graduation date. Students **must** complete ***TSCI 6098*** (***Thesis***) to be eligible for graduation and **must** be enrolled in the Graduate School in the semester of their graduation.

MSCI-TS Elective Courses (may be taken in any semester when offered)

TSCI 5050 (1 SCH) – Introduction to Data Science

TSCI 5077 (1 SCH) – Practicum in Translational Science

TSCI 5201 (3 SCH) – Advanced Statistics for Machine Learning Methods: Statistical Principles of Machine Learning Applied to Biomedical Data

TSCI 5230 (3 SCH) – Programing for Biomedical Data Science

TSCI 6069 (2 SCH) – Statistical Issues, Planning, and Analysis of Contemporary Clinical Trials

TSCI 6070 (2 SCH) – Biostatistics Methods for Longitudinal Studies

TSCI 6100 (1 SCH) – Practicum in IACUC Procedures

TSCI 6101 (1 SCH) – Topics in Translational Science

TSCI 6102 (1 SCH) – Practicum in IRB Procedures

TSCI 6105 (1 SCH) – Topics in Cancer Prevention

TSCI 6106 (1 SCH) – Practicum in Cancer Prevention

TSCI 6201 (1 SCH) – Data Science Leadership in Healthcare

TSCI 6202 (2 SCH) - Data Visualization and Building Applications

TSCI 6203 (1 SCH) – Practicum in Data Science

Offerings Subject to Change without Notice

Tuition and Fees - Degree Cost Estimate

MSCI-TS Degree Requires the Completion of 30 SCH Coursework: 19 Required/11 Elective.

TX Resident – Full Time Student Estimated Cost of Degree					
Semester	**SCH**	**Tuition per SCH**	**Fees per Semester**	**Est. Cost per Semester**	**Notes**
Fall 2021	8	$179.94	$2207.50	**$3,647.02**	
Spring 2022	8	$179.94	$2207.50	**$3,647.02**	
Fall 2022	8	$179.94	$2207.50	**$3,647.02**	
Spring 2023	5	$179.94	$2207.50	**$3,107.20**	
Fall 2023	1	$179.94	$2307.50*	**$2,116.44**	Students Must enroll in TSCI 6098 last semester.
Estimated Total Cost of Degree				**$14,680.70**	

Non-TX Resident – Full Time Student Estimated Cost of Degree					
Semester	**SCH**	**Tuition per SCH**	**Fees per Semester**	**Est. Cost per Semester**	**Notes**
Fall 2020	8	$679.07	$2207.50	$7,269.06	
Spring 2021	8	$679.07	$2207.50	$7,269.06	
Fall 2021	8	$679.07	$2207.50	$7,269.06	
Spring 2022	5	$679.07	$2207.50	$5,231.85	
Fall 2023	1	$679.07	$2307.50*	$2,615.57	Students Must enroll in TSCI 6098 last semester.
Estimated Total Cost of Degree				$29,654.60	

UTHSA Faculty/Staff or Students with Private/Employer Health Insurance - TX Resident – Full Time Student Estimated Cost of Degree					
Semester	**SCH**	**Tuition per SCH**	**Fees per Semester**	**Estimated Cost per Semester**	**Notes**
Fall 2021	8	$179.94	$612.50	**$2052.02**	
Spring 2022	8	$179.94	$612.50	**$2052.02**	
Fall 2022	8	$179.94	$612.50	**$2052.02**	
Spring 2023	5	$179.94	$612.50	**$1512.20**	
Fall 2023	1	$179.94	$712.50*	**$892.44**	Students Must enroll in TSCI 6098 last semester.
Estimated Total Cost of Degree				**$8,560.70**	

*****= Includes $100 Graduation Fee

- **Texas Resident Tuition per Semester Credit Hour (SCH) = $179.94** (Tuition estimate is a combination of Statutory, Differential, Designated, and Designated [Deregulated] Tuition Fees).
- **Non-Texas Resident Tuition per Semester Credit Hour (SCH) = $680.07** (Tuition estimate is a combination of Statutory, Differential, Designated, and Designated (Deregulated) Tuition Fees).
- **Estimated Fees Per Semester W/GSBS Health Ins = $2207.50**
  Note: Estimate includes: Fitness Center, Student Service, Medical Service, Library, **GSBS Health Insurance Fees ($1,595).**

Tuition and Fees subject to change without notice.
For a detailed breakdown of Tuition and Fees press CTRL + Click

For questions regarding UTHSA Tuition and Fees Policy,
Please press CTRL + Click for explanation of tuition types and fees.

MSCI-TS Program Forms

Applicant Form & Checklist
Application Checklist

Research Project Forms
Research Proposal Packet Checklist
Research Supervising Committee List and Signature Approval of Research Form
Research Proposal Assessment Form
Request to Amend Research Form

TSCI 6097: Mentored Research Forms
6097 Planned Activities Form
6097 Planned Activities Completion Form

Compact & Semi-Annual Evaluation Forms
Supervising Professor Compact
Student Semi-Annual Evaluation Form

Manuscript Forms
Manuscript Submission Checklist
Manuscript Approval Form
Manuscript Assessment Form

Translational Science Training (TST) Practicum Forms
Student Planned Activities Worksheet
Monthly Student Activities Form (TSCI 5077)

IACUC Practicum Forms (TSCI 6100)
Student Planned Activities Form (TSCI 6100)
Monthly Planned Activities Report Form (TSCI 6100)

IRB Practicum Forms (TSCI 6102)
Student Planned Activities Form (TSCI 6102)
Monthly Planned Activities Report Form (TSCI 6102)

Translational Science and Clinical Investigation (TSCI) Course Descriptions

TSCI 5050 Introduction to Data Science

1.0 Semester Credit Hour (SCH) (MSCI-TS Elective)
Course Director: Alex Bokov, PhD

This elective course is designed to train participants to use programing languages such as R and SQL to extract, prepare, and analyze data. This course is designed to be self-contained: statistical methods and theory relevant to analyzing large datasets will be covered with the computer-related course content providing tangible applications and motivating examples. In addition, the course will include organizational skill training and best practices needed to run a successful collaboration between researchers conducting patient-oriented clinical research and the researchers in the computational fields.

TSCI 5070 Responsible Conduct of Research

2.0 Semester Credit Hours (SCH) (MSCI-TS/CTS/CCP/CBDS Required)
Course Director: Krista L. Kilpadi, MD/PhD and Babatunde Oyajobi, MD/PhD

This interdisciplinary course is designed to train participants in the responsible conduct of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) delineate a history of hallmark abuses of humans enrolled in clinical research, (2) describe the evolution of national and international codes and regulations guiding inclusion of human subjects in clinical investigations, (3) list the elements of informed consent and describe procedures and precautions for enrolling special populations into clinical investigation, (4) write a consent form in understandable language, (5) recognize different forms of scientific misconduct, (6) describe the role and processes of a peer review board to judge violations in research ethics, (7) develop strategies for self-assessment and validation of scientific objectivity in one's own research, and (8) recognize the ethical responsibilities and consequences of whistle blowing.

TSCI 5071 Patient-Oriented Clinical Research Methods-1

2.0 Semester Credit Hours (SCH) (MSCI-TS/CTS/CCP Required)
Course Director: Byeongyeob Choi, PhD

This interdisciplinary course is the first in a two-semester sequence designed to train participants in the conduct of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) define a research question, (2) effectively conduct a systematic review of the scientific literature, (3) design strategies for recruitment into a study, (4) delineate strategies for minimizing bias in cross-sectional and retrospective studies, and (5) read and interpret research reports of cross-sectional and case control investigations.

TSCI 5072 Patient-Oriented Clinical Research Biostatistics-1

2.0 Semester Credit Hours (SCH) (MSCI-TS/CTS/CCP Required)
Course Directors: Jonathan Gelfond, MD, PhD

This interdisciplinary course is the first in a two-semester sequence designed to train participants in the analysis and biostatistics of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) identify and summarize different categories of data; (2) set up and perform tests of hypotheses; (3) estimate sample sizes for survey and case-control studies; and (4) use statistical software packages to enter, summarize, graph, visualize, and analyze data.

TSCI 5073 Integrating Molecular Biology with Patient-Oriented Clinical Research

1.0 Semester Credit Hours (SCH) (MSCI-TS Required)
Course Directors: Teresa L. Johnson-Pais, PhD

This interdisciplinary course is designed to train participants on integrating molecular biology methods into patient-oriented clinical research. Students will have the opportunity to learn to: (1) appropriately use molecular terms in clinical investigation; (2) describe the events involved in protein synthesis; (3) describe the principles involved in molecular techniques (e.g., polymerase chain reactions, Southern blots); (4) identify the appropriate specimens, collection, and handling requirements for each molecular technique; (5) identify and correct common sources of error in performing molecular techniques; (6) cite examples of clinical applications of molecular techniques in clinical medicine; and (7) apply molecular techniques in the laboratory to specific clinical problems.

TSCI 5074 Data Management, Quality Control, and Regulatory Issues

2.0 Semester Credit Hours (SCH) (MSCI-TS Required)
Course Director: Schmidt, Susanne, PhD

This interdisciplinary course is designed to train participants in the necessary data management and quality control procedures required for the conduct of patient-oriented clinical research.

By the end of this course, each student should be able to:

1. Understand the principles of data management as they pertain to clinical research
    a. Using and Defining meta data
    b. Research logistics
    c. Data Security
    d. Randomization
2. Understand supporting principles
    a. Data management and Analysis ethics
    b. Compliance
    c. Quality Control
    d. Program Evaluation
3. Using the REDCap Electronic Data Capture (EDC) tool
    a. Design and build a data collection instrument
    b. Design and build a survey
    c. Design and build a longitudinal study
    d. Build a report
    e. Import external data from Excel
    f. Export data to Excel
4. Be able to identify individuals and resources within the institution that can provide guidance in all areas covered.

TSCI 5075 Scientific Communication

2.0 Semester Credit Hour (SCH) (MSCI-TS Required)
Course Directors: Bandana Chatterjee, PhD

This interdisciplinary course is designed to train participants to write effectively in all aspects of conducting patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) recognize and avoid errors in grammar, punctuation, and usage that are common in scientific writing; (2) construct units of writing whose structure, style, and logical continuity allows instant and clear comprehension; (3) construct concise, informative titles; (4) develop clear, comprehensive, abstracts for papers and grant proposals; (5) construct complete, well-rationalized sets of specific aims for grant proposals; and (6) effectively apply the 4-Point Rule (What is the question? How did we approach it? What happened? What does it mean?) to all forms of scientific writing.

TSCI 5077 Practicum in Translational Science

1.0 Semester Credit Hours (SCH) (MSCI-TS Elective)
Prerequisite: Consent of the Course Director
Course Director: Yong-Hee Chun, DDS, MS, PhD

This *elective* course provides an opportunity for participation in unique clinical and translational research activities that are highly individualized for each student based on prior experience and research interests.

TSCI 5080 Integrating Molecular Biology with Patient Oriented Clinical Research Practicum

1.0 Semester Credit Hour (SCH) (MSCI-TS Required)
Prerequisite: TSCI 5073
Course Director: Goutam Ghosh-Choudhury, PhD

This is the required practicum to TSCI 5073 (Integrating Molecular Biology with Patient-Oriented Clinical Research Practicum. This practicum is designed to provide the opportunity for highly individualized research activities for integrating molecular biology methods into patient-oriented clinical research.

TSCI 5201 Advanced Statistics for Machine Learning Methods: Statistical Principles of Machine Learning Applied to Biomedical Data

3.0 Semester Credit Hour (SCH) (MSCI-TS Elective/CBDS Required)
Prerequisite: Consent of the Course Director
Course Director: Zhu Wang, PhD

This class offers a hands-on approach to machine learning and data science. The class discusses the application of supervised and unsupervised techniques for machine learning including random forests, support vector machines, boosting, deep learning, K-means clustering and mixture models. The course focuses on real data application with open-source implementations in Python and R.

TSCI 5230 Programing for Biomedical Data Science

3.0 Semester Credit Hour (SCH) (MSCI-TS Elective/CBDS Required)
Prerequisite: Consent of the Course Director
Course Director: Alex Bokov, PhD

This class offers a hands-on approach to data science programming for biomedical research. We will introduce R, Python, SQL, and the software tools that interoperate with them. We will also cover cross-cutting best practices for organizing one's work to facilitate collaboration, reproducibility, and portability. Students who already have data they want to analyze are encouraged to use it in their assignments.

TSCI 6001 Introduction to Translational Science

1.0 Semester Credit Hour (SCH) (MSCI-TS/CTS/CCP Required)
Course Director: Bertha E. "Penny" Flores, RN, PhD

This elective course provides an in-depth overview of the essential components encompassed by translational science. Content is provided through a series of lectures, assigned readings, literature reviews, class presentations, and discussions with faculty

TSCI 6060 Patient-Oriented Clinical Research Methods-2

2.0 Semester Credit Hours (SCH) (MSCI-TS Required)
Prerequisite: TSCI 5071
Course Director: Byeongyeob Choi, PhD

This interdisciplinary course is the second in a two-semester sequence designed to train participants in the conduct of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) define criteria for inferring causation from observational studies; (2) design strategies for subject retention in a prospective study; (3) design strategies for monitoring progress in a randomized control trial; (4) delineate strategies for minimizing bias in cohort studies and randomized control trials; (5) compare and contrast the uses, strengths, and weaknesses of different clinical trial designs; (6) read and interpret research reports of cohort studies and randomized control trials; and (7) describe the steps in conducting a meta-analysis.

TSCI 6061 Patient-Oriented Clinical Research Biostatistics 2

2.0 Semester Credit Hours (SCH) (MSCI-TS Required)
Prerequisite: TSCI 5072
Course Director: Jonathan Gelfond, MD, PhD

This interdisciplinary course is the second in a two-semester sequence designed to train participants in the biostatistical analysis of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) perform a two-way analysis of variance and explain the results; (2) perform survival analysis; (3) compare and contrast the purpose and characteristics of different forms of interventional trials; and (4) plan the sample size, analysis, and stopping rules of a randomized clinical trial.

TSCI 6065 Health Services Research

2.0 Semester Credit Hours (SCH) (MSCI-TS Required)
Prerequisite: TSCI 5071 and TSCI 6060
Course Director: Helen P. Hazuda, PhD

This course focuses on concepts and methods used in research focusing on health care quality, utilization, access, and safety. The seminar will utilize skills-based learning, small group activities, and outside assignments. By the end of the course, candidates will be required to:

- articulate underlying core concepts
- describe basic methods used in health services research
- identify relevant databases and data sources for health services research
- critically appraise and interpret published reports of health services research
- discuss current issues in HSR
- understand how to incorporate health services concepts, methods, or tools, into current research

TSCI 6067 Genomic Healthcare

1.0 Semester Credit Hour (SCH) (MSCI-TS Elective)
Course Director: Donna Lehman, PhD

This elective course prepares students to integrate genomic and other omics technology into patient care and clinical research. It begins with an introduction to genomics and overview of omics technologies. Students will explore the different resources of genomic information and have opportunities to apply these resources to keep abreast of current knowledge in their health topic of interest including the ethical individual and societal challenges ahead. Genomics in cancers is an active area in personalized medicine, and this topic will be discussed by a local cancer genomics expert. The course will also provide an introduction and overview of current applications of gene therapeutics to a variety of disorders. By the end of the course, students will have a working knowledge of the human genome and the tools for integrating this information into clinical research as well as conveying it to patients.

TSCI 6069 Statistical Issues, Planning, and Analysis of Contemporary Clinical Trials

2.0 Semester Credit Hour (SCH) (MSCI-TS Elective)
Prerequisite: TSCI 5072 and TSCI 6061
Course Director: Joel Michalek, PhD

This elective course will serve as an in-depth survey of the various clinical trial designs, analysis, and regulatory issues. Students will learn to apply statistical principles in designing clinical trials to minimize risk to patients while maximizing generalizable discovery. Specific topics include Phase I-V studies, adaptive designs, longitudinal and survival studies. Students will learn to specify the primary outcome and to estimate the required sample size for common trial designs. Clinical trial design and analysis is often complicated by idiosyncrasies such as missing data, and the methodology for handling these will be covered.

TSCI 6070 Biostatistics Methods for Longitudinal Studies

2.0 Semester Credit Hour (SCH) (MSCI-TS Elective)
Prerequisite: TSCI 5071 and TSCI 5072
Course Director: Chen-Pin Wang, PhD

This elective course will discuss a broad range of statistical techniques for deriving statistical inference from longitudinal studies. Main topics include design of longitudinal studies (power analyses and sample size estimation), analyses of repeated measured outcomes (continuous and discrete), analyses of time-to-event outcomes, techniques to address challenges associated with missing data and confounding data, and rigorous casual modeling approaches. Students will learn to identify feasible and efficient statistical designs for longitudinal studies and to conduct rigorous and robust statistical methods to analyze data from longitudinal studies. The goal is to develop students' biostatistical competencies in conducting high-quality longitudinal studies in medical research.

TSCI 6097 Research

1.0 – 4.5 Semester Credit Hours (SCH) (MSCI-TS Degree Requirement/ SCH count toward elective hours)
Prerequisite: A MSCI-TS COGS approved Research Project Proposal and a Course Director approved Planned Activities form (Approval prior to enrollment is required).
Course Director: Helen P. Hazuda, PhD

The Research Course is set up for the student to conduct their COGS approved Mentored Research Project under the direction of their supervising professor. This time is to be spent directly working on the project and includes, but is not limited to, writing consent forms, collecting data, analyzing data, and preparing a manuscript. After MSCI-TS COGS approval of the research project proposal, students will enroll in 1.0 - 4.5 semester credit hours of research for a minimum of 2 semesters.

TSCI 6098 Thesis

1.0 Semester Credit Hours (SCH) (MSCI-TS Degree Requirement/ SCH count toward elective hours)
Prerequisite: A MSCI-TS COGS approved Research Project Proposal.
Course Director: Helen P. Hazuda, PhD

Registration for one semester is required of MSCI-TS degree candidates. The final requirement for the MSCI-TS degree candidates requires student to make a significant contribution to the peer reviewed literature in their field of research. This course is intended for students to finalize their manuscript submission to a peer-reviewed journal and submit their manuscript submission packet to the MSCI-TS COGS for review and approval towards their eligibility for MSCI-TS degree. Manuscript Submission Packets are due on: **(Spring Graduates) March 15th/ (Fall Graduates) October 15th.**

TSCI 6100 Practicum in IACUC Procedures

1.0 Semester Credit Hour (SCH) (MSCI-TS Elective)

Prerequisite: Consent of the Course Director
Course Director: Rodolfo Trevino, MS, CPIA

This elective course presents an in-depth introduction to the institutional program that provides oversight and regular review of projects that involve the care and use of animals. This includes consideration of the operational procedures of the Institutional Animal Care and Use Committee (IACUC) of the UTHSCSA. Course objectives are achieved through a combination of readings, monthly attendance at selected IACUC meetings, and discussions with faculty.

TSCI 6101 Topics in Translational Science

1.0 Semester Credit Hour (SCH) (MSCI-TS Elective)/CTS Required)
Prerequisite: Consent of the Course Director
Course Director: Christopher Frei, PharmD, MSc

This elective course addresses selected topics in translational science through a series of lectures, assigned readings, literature reviews, class presentations, and discussions with faculty.

TSCI 6102 Practicum in IRB Procedures

1.0 Semester Credit Hour (SCH) (MSCI-TS Elective)
Course Director: Krista L. Kilpadi, MD/PhD

This elective course presents an in-depth introduction to the institutional program that provides oversight and regular review of research projects that involve human subjects. This includes consideration of the operational procedures of the multiple Institutional Review Boards (IRB) of the UTHSCSA. Course objectives are achieved through a combination of readings, monthly attendance at selected IRB meetings, and discussions with faculty.

TSCI 6105 Topics in Cancer Prevention

1.0 Semester Credit Hour (SCH) (MSCI-TS Elective/CCP Required)
Course Director: Addanki Pratap Kumar, PhD

This course address current topics in cancer prevention science through a series of didactic lectures and discussions with cancer prevention faculty. Topics span the continuum of cancer prevention from basic cancer epidemiology and carcinogenesis, to cancers of special relevance in South Texas and interventions. An exposure to prevention clinical trials and disparity research will also be presented. Consent of instructor is required for registration.

TSCI 6106 Practicum in Cancer Prevention Sciences

1.0 Semester Credit Hour (SCH) (MSCI-TS Elective/CCP Required)
Course Director: Addanki Pratap Kumar, PhD

This course allows for practical experience in cancer prevention and cancer prevention science. It is designed to be a one-on-one experience in which the student experiences the practice of cancer prevention science. Examples include following a dermatologist in screening patients for skin cancer, working on datasets derived from cancer prevention trials, participating in cancer prevention trials, spending time with a preceptor at the City of San Antonio Metropolitan Health District or a state health agency, as examples.

TSCI 6201 Data Science Leadership in Healthcare

1.0 Semester Credit Hour (SCH) (MSCI-TS Elective/CBDS Required)

Course Director: Jonathan Gelfond, MD, PhD

This offers a hands-on approach to data science operations in biomedical science. The class discusses the management of data science teams, collaboration within healthcare organizations, and the social and ethical responsibility of data scientists. The course focuses on real world applications.

TSCI 6202 Data Visualization and Building Applications

2.0 Semester Credit Hour (SCH) (MSCI-TS Elective/CBDS Required)
Prerequisite: TSCI 5230/Consent of the Course Director
Course Director: Alex Bokov, PhD

This course offers a hands-on approach to data visualization for biomedical data science. The class uses R, Python and JavaScript and the software tools that interoperate with them. Some cross-cutting best practices. The course focuses on real world applications.

TSCI 6203 Practicum in Biomedical Data Science

2.0 Semester Credit Hour (SCH) (MSCI-TS Elective/CBDS Required)
Prerequisite: TSCI 5201/Consent of the Course Director
Course Director: Zhu Wang, PhD/Alex Bokov, PhD/ Jonathan Gelfond, MD/PhD

This course provides an opportunity for participation in unique biomedical data science and translational research activities that are highly individualized for each student based on prior experience and research interests.

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Responsible Conduct of Patient-Oriented Clinical Research • Patient-Oriented Clinical Research Methods • Patient-Oriented Clinical Research Biostatistics • Integrating Molecular Biology with Patient-Oriented Clinical Research • Data Management, Quality Control, and Regulatory Issues • Grantsmanship and Peer Review • Health Services Research • Instrument Validation and Development • Genetics and Genetic Epidemiology • Cross Cultural Adaptation of Research Instruments • Practicum in Translational Science • Introduction to Translational Science • Practicum in IACUC Procedures • Topics in Translational Science • Practicum in IRB Procedures • Selected Topics in Advanced Research Ethics • Responsible Conduct of Patient-Oriented Clinical Research • Patient-Oriented Clinical Research Methods • Patient-Oriented Clinical Research Biostatistics • Integrating Molecular Biology with Patient-Oriented Clinical Research • Data Management, Quality Control, and Regulatory Issues • Grantsmanship and Peer 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UT Health
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Procedures • Selected Topics in Advanced Research Ethics • Responsible Conduct of Patient-Oriented Clinical Research • Responsible Conduct of Patient-Oriented Clinical Research • Patient-Oriented Clinical Research Methods • Patient-Oriented