Department of Neuroscience, Developmental and Regenerative Biology (NDRB)

The University of Texas at San Antonio

DEVELOPMENTAL & REGENERATIVE SCIENCES (DRS)
DOCTORAL PROGRAM

DRS
DEVELOPMENTAL & REGENERATIVE SCIENCES

ACADEMIC POLICIES AND PROCEDURES

2026 - 2027

Revision date: August 13, 2026

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I. NDRB DOCTORAL DEGREE PROGRAM AREAS

The Department of Neuroscience, Developmental and Regenerative Biology (NDRB) of the University of Texas at San Antonio provides opportunities for advanced study and research leading to the Doctor of Philosophy degree. The PhD degree is awarded to candidates who have 1) displayed an in-depth understanding of the subject matter and 2) demonstrated the ability to make a significant contribution to knowledge in their field of specialty. There are two NDRB PhD programs; one has an emphasis in Developmental & Regenerative Sciences (DRS) and the other has an emphasis in Neuroscience. This document describes the Academic Policies and Procedures for the Developmental & Regenerative Sciences (DRS) PhD Program.

II. GRADUATE FACULTY ASSOCIATED WITH THE DRS PHD PROGRAM

CORE FACULTY

Alfonso Apicella, PhD
Lacy Barton, PhD
Aritra Bhattacherjee, PhD
Eric Brey, PhD
Anthony Burgos-Robles, PhD
Erika Tatiana Camacho, PhD
Astrid Cardona, PhD
Melanie Carless, PhD
Damayanti Charkraborty, PhD
Thomas Forsthuber, MD, PhD
T. Chris Gamblin, PhD
Maria A. Gonzalez Porras, PhD
Teja Guda, PhD
Brian P. Hermann, PhD
Jenny Hsieh, PhD
ChiungYu Hung, PhD
Hyoung-gon Lee, PhD
Annie Lin, PhD
Lindsey Macpherson, PhD
John McCarrey, PhD
Stanton McHardy, PhD
Christopher Navara, PhD
George Perry, PhD
Christopher Rathbone, PhD
Fidel Santamaria, PhD
Francesco Savelli, PhD
Janakiram Seshu, PhD
Marina Augusto Silveria, PhD
Gongchen Sun, PhD
Alexey Soshnev, PhD
Jeffrey Vedanayagam, PhD
Matthew Wanat, PhD
Yufeng Wang, PhD
Marissa Wechsler, PhD

ADJOINT FACULTY**

Dan Darlington, PhD (ISR)
Chester J. Hutcheson, PhD (59th Medical Wing, DHA)
Michael A. Meledeo, PhD (ISR)
Kristin Reddoch-Cardenas, PhD (ISR)
Corinna Ross, PhD (TBRI)
Alan Weaver, PhD (ISR)
Xiaowu Wu, MD, MMS (ISR)
Lusha Xiang, PhD (ISR)

ISR = US Army Institute of Surgical Research
DHA = Defense Health Agency
TBRI = Texas Biomedical Research Institute

AFFILIATE FACULTY***

Gary Gaufo, PhD
Howard Grimes, PhD
David Jaffe, PhD
Richard LeBaron, PhD
Robert Renthal, PhD
Charles Wilson, PhD

**Core faculty at UT San Antonio are potentially able to accept new dissertation students.*
***Adjoint faculty at locations other than UT San Antonio may able to accept students.*
****Affiliate faculty are not currently in a position to accept students.*

III. ORGANIZATION AND ADMINISTRATION OF THE DRS DOCTORAL PROGRAM

The DRS doctoral program in the NDRB Department at UT San Antonio is administered by the Graduate Advisor of Record (GAR), the DRS Doctoral Studies Committee (DRS-DSC) and the DRS Program Administrator, each of which report to the NDRB Department Chair. The DRS-DSC is comprised of seven members appointed by the Department Chair from the NDRB Department graduate faculty who are active in the DRS program. The NDRB Chair designates a chairperson of the DRS-DSC who also serves as the Graduate Advisor of Record (GAR) for the DRS PhD Program. The DRS-DSC monitors all academic aspects of the DRS Doctoral Program, prepares reports as needed to maintain accreditation of the DRS Doctoral Program, reviews applications, interviews qualified applicants and recommends admission of students into the DRS Doctoral program, recommends and monitors degree requirements on behalf of the DRS Graduate Faculty, monitors student progress toward achieving those requirements, adjudicates any disputes or other issues pertaining to the program curriculum or academic performance, recommends students for admission to candidacy for the PhD degree and recommends students to whom the PhD degree is to be conferred upon satisfactory completion of all requirements.

Once a student has advanced to candidacy, the Dissertation Committee, chaired by the student's Dissertation Advisor/PI, bears the responsibility of monitoring the student's research progress through the program in a timely manner. For a description of the Dissertation Committee, see page 13.

The Graduate Advisor of Record (GAR) for the DRS Doctoral Program advises all DRS doctoral students, supervises the maintenance of records in conjunction with the Program Administrator, and represents the NDRB Department in most matters relating to the DRS Doctoral Program and doctoral students. Questions about degree requirements and academic policies should be directed to the DRS GAR. The Program Administrator is an administrative support position filled by a member of the NDRB office staff. The Program Administrator maintains all program/student records, enrolls students in courses, administers appointments and related matters (e.g. GRA appointments) for all DRS PhD students, and provides other administrative support for DRS Doctoral Program events and activities. The GAR, DRS-DSC and the Program Administrator report to the NDRB Department Chair and the College of Sciences Associate Dean for Graduate Education, who, in turn, report to the Dean of the College of Sciences. Final authority over the DRS Doctoral Program rests with the Provost, Vice President for Academic Affairs, and the Dean of the Graduate School.

IV. DRS PROGRAM ADMISSION REQUIREMENTS AND REGISTRATION

ADMISSION. All prospective students must have a B.A. or B.S. degree (preferably in Biology or a related discipline) from an accredited university and should have a minimum GPA of 3.0 in upper-division and/or graduate work. Applicants are required to submit a statement describing relevant past education and research experience and explaining why they wish to obtain a doctoral degree in Developmental & Regenerative Sciences and what they expect to do with the degree once they obtain it. Applicants must also submit three letters of reference from individuals who know the applicant well and can, preferably, describe past experience the applicant has amassed in performing laboratory research. Applicants whose native language is not English must document their English proficiency via TOEFL (≥550 paper, ≥79 computer), IELTS (≥6.5), or Duolingo English Test (≥105). Any

deficiencies in these requirements must be rectified prior to admission into the program.
FINANCIAL SUPPORT PACKAGE. As specified in the official letter offering admission into the DRS PhD Program, unless declined by the student or in special circumstances, every student admitted into the DRS doctoral program will receive a comprehensive financial support package typically including a graduate research assistantship (GRA) paying $35,000 per year (as of Fall 2024), plus payment of all tuition/fees and support for health insurance. Students supported by NIH or other extramural grants or independent sources are not required to teach except for taking the required Principles of Scientific Teaching course. Financial support is ordinarily derived from NDRB during Year 1 and then from the Dissertation Advisor/PI during the student's subsequent years in the program. Students not supported by funding from their Dissertation Advisor/PI or other extramural sources may be required to serve as a teaching assistant for up to two courses/semester. Financial support is typically offered for no more than 6 years. Students must be registered full time = 9 credit hours/semester (fall and spring) and 3 credit hours/term (summer), while supported by University/PI funding. DRS Program participation is a full-time endeavor, and concurrent outside employment is not permitted. Approvals for outside employment must be obtained from the Dissertation Advisor/PI, the DRS-DSC, the Department Chair, the Associate Dean for Graduate Education and the Office of the Provost and Vice President for Academic Affairs. Appointment type (e.g., GRA) is dependent on funding sources.

REGISTRATION. Rules recommended by the DRS-DSC and approved by the DRS graduate faculty, the Department Chair, the Graduate Council and the Office of the Provost and Vice President for Academic Affairs govern the registration of doctoral students. The DRS Graduate Advisor of Record must approve all classes prior to registration. The student should discuss selection of lecture courses with his/her Dissertation Advisor/PI, once this faculty member is selected, and then obtain approval from the DRS GAR.

V. MILESTONES AGREEMENT

Upon admission into the DRS PhD program, each student will be required to sign a copy of the DRS PhD Program Milestones Agreement (Form 1), which details requirements of DRS PhD students during each year of the DRS PhD program and documents that each student has been made aware of those requirements upon entry into the DRS PhD program.

VI. DRS PhD PROGRAM CURRICULUM

COURSE REQUIREMENTS. The doctoral degree requires a minimum of 80 hours beyond the Baccalaureate Degree. The Program of Study includes a Core Curriculum (20 hours), Elective courses that support the emphasis in DRS (9 hours), Colloquia (10 hours minimum) and Doctoral/Dissertation Research (41 hours minimum). Graduate courses in which a grade lower than "B" is received, or remediation course work at the undergraduate level, will not be counted toward the required 78 hours.

A. Core curriculum (20 semester credit hours required):
   - NDRB 5133: Principles of Cell Biology
   - NDRB 5123: Principles of Molecular Biology
   - NDRB 5223: Principles of Developmental Biology
   - NDRB 7143: Principles of Biological Scientific Writing
   - NDRB 7113: Principles of Scientific Teaching

- NDRB 7572: Experimental Techniques in the Life Sciences (Laboratory rotations) (Total of 4 semester credit hours during 1st year of study)
- NDRB 5001 Ethical Conduct in Research

B. Colloquia (1/semester throughout tenure in program – minimum of 10 semester credit hours required):
- NDRB 7041: Qualifying Exam (QE) Colloquia (2 semester credit hours during 1st year of study)
- NDRB 7041: NDRB Colloquia (8 semester credit hours minimum during 2nd-5th years of study)*

** As of Fall 2026 – All 2nd-5th year students are required to enroll in the NDRB 7041 – DRS Journals colloquium which will involve reading and discussing representative primary research articles from weekly DRS Seminar speakers ahead of their seminar.*

C. Doctoral Research/Doctoral Dissertation (43 semester credit hours):
- NDRB 7212/3: Doctoral Research (6 semester credit hours minimum)
- NDRB 7315/8: Doctoral Dissertation (35 semester credit hours minimum)

D. Elective courses (6 semester credit hours minimum):
- Any two 3-credit hour 5000-7000 level lecture course in NDRB, MMI or BIO. Lecture courses from other departments can be taken with approval by the DRS-DSC/GAR.

The Interim Program of Study (Form 2) (submitted during first year in program) must be approved by the DRS GAR on behalf of the DRS-DSC and submitted via the Department Chair to the College and Graduate School.

The Final Program of Study (Form 14) (submitted in semester of graduation) must be approved by the student's Dissertation Advisor and the DRS GAR, on behalf of the DRS-DSC, and submitted via the Department Chair to the College and the Graduate School.

RESEARCH ROTATIONS. All first year DRS students must participate in Experimental Techniques in Life Sciences – even if they have already identified a dissertation lab/PI. These constitute Research Rotations (NDRB 7572), in which students will perform research for 10 weeks each in labs of at least three different program faculty. Rotations provide an opportunity for students to become acquainted with the various faculty mentors and their individual research areas and facilitate selection of a Dissertation Advisor/PI/lab. Students must complete a minimum of three laboratory rotations. If necessary, a fourth rotation with no affiliated academic credit may be completed during the summer following year 1 in the program. All DRS PhD students must identify a Dissertation Advisor/PI /lab prior to the start of the fall semester of their 2nd year in the program. The supervising professor of each rotation designs a research project in consultation with the student. The student must submit a report to the DRS-DSC describing each rotation project (Form 3). This report will include a description of the rotation project and results prepared by the student, plus an assessment of the student's performance during the rotation prepared by the supervising professor. 1st-year DRS PhD students may also be asked to make a short oral presentation in the spring of year 1 in the program describing one or more of their rotation projects.

SUMMER COURSEWORK: Students will enroll for 3 hours of Doctoral Research (NDRB 7213) or Doctoral Dissertation (NDRB 7313) during summers following years 1 - 4 and, if

necessary, 5.

MEETING REQUIREMENTS. In order to promote general awareness of research activities and to share ideas among members of the DRS program, all students and faculty are expected to regularly attend DRS & NDRB sponsored functions. Student attendance is mandatory at the following events**:**

1. Graduate School Orientation, RCR training, LARC training – 1st year students only.
2. DRS Orientation Meetings – Friday before classes begin each semester.
3. Program faculty research summaries – 1st year students only – one-time event (multiple sessions as needed) at the beginning of the fall semester.
4. NDRB Fall and Spring symposia – One-time event at the end of each semester.
5. DRS Seminar Series (every Monday of Fall/Spring Semesters – DRS students are required to attend all DRS seminars. *Note - DRS PhD students may also attend other weekly seminars (e.g. Neuro, MMI/STCEID, BHC), but such optional attendance does not replace the requirement of attendance at DRS seminars.*
6. Weekly lunches with external (non-UT San Antonio) DRS seminar speakers.
7. NDRB Retreat – mid-May Department-wide, full day event.

NON-CREDIT REQUIREMENTS. The following is a list of requirements that must be completed by DRS PhD students although no formal course credit is received (note that these overlap with the DRS/NDRB functions noted above).

- Sign and submit Milestones Agreement. (Form 1)
- Attendance at weekly DRS Seminars.
- Attendance at weekly lunches with DRS Seminar speakers.
- NDRB Symposia - All DRS students must attend once each semester – presentations by 3rd and 4th-year students.
- Written Qualifying Requirement during year 1 (6 QEs passed with a B average).
- Preparation, approval and submission of Interim Program of Study. (Form 2)
- Completion of 3 laboratory rotations and submission of report from each. (Form 3)
- Selection of Dissertation PI/Lab by August of Year 1 (preferably by May). (Form 4)
- Completion of an Individual Development Plan in consultation with the student's PI – by Oct 1 of 1st year, September 1 of the 2nd -5th years (Form 16).
- Submission of Annual Progress Reports. (Forms 5 & 11)
- Approval of dissertation proposal by May of year 2. (Form 13)
- Establishment of Oral Qualifying Exam Committee. (Form 6)
- Approval of Special Members of Oral Qualifying Exam Committee. (Form 7)
- Completion of Oral Qualifying Exam Requirement by May 30th of year 2. (Form 8)
- Establishment of Dissertation Committee – Beginning Fall semester, year 3 (Form 9)
- Application for Candidacy. (Form 10)
- Biannual reviews with Dissertation Committee and completion of evaluation forms for each meeting during years 3 - 5 or until dissertation is completed. (Form 12)
- Completion of written dissertation.
- Presentation of a full-length seminar in the DRS Seminar Series.
- Preparation, approval and submission of Final Program of Study. (From 14)
- Oral Defense of dissertation. (Form 15).

TRANSFER OF CREDITS. Students are normally expected to complete all coursework at UT San Antonio. Exceptions require approval of the DRS-DSC and the Office of Graduate Studies. Students may petition the DRS-DSC to transfer into their program of study credit earned for coursework taken prior to entering the DRS PhD program if that coursework was not used to satisfy requirements for a prior degree.

Course of Study for the Developmental & Regenerative Sciences PhD Program

Year	Fall Semester	Spring Semester
1	NDRB 5133 Principles of Cell Biology (3hrs) NDRB 7041 Cell Bio QE* Colloquium (1hr) NDRB 5000-7000 Level Elective Course (3hrs) NDRB 7572 Research Rotation (2hrs) *Written Qualifying Exam	NDRB 5123 Principles of Molecular Biology (3hrs) NDRB 7041 Mol Bio QE* Colloquium (1hr) NDRB 5223 Principles of Developmental Biology (3hrs) NDRB 7572 Research Rotation (2hrs) *Written Qualifying Exam
Written Qualifying Requirement to be completed on or before May 30th of first year. Student selects a Dissertation PI/Lab no later than the end of the Summer, but preferably by May 1st.		
2	NDRB 7143 Principles of Scient Writing (3hrs) NDRB 5000-7000 Level Elective (3hrs) NDRB 7041 DRS Journals Colloquium (1hr) NDRB 7212 Doctoral Research (2hr)	NNDRB 5000-7000 Level Elective Course (3hrs) NDRB 7113 Principles of Scientific Teaching (3hrs) NDRB 7041 DRS Journals Colloquium (1hr) NDRB 7212 Doctoral Research (2hrs)
Submit written dissertation proposal as application for extramural funding by the Summer after year 2. Oral Qualifying Exam to be completed on or before May 30th of second year. Advancement to Candidacy.		
3	NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7311 Doctoral Dissertation (1hr) NDRB 5001 Ethical Conduct in Research (1hr) NDRB 7041 DRS Journals Colloquium (1hr)	NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7312 Doctoral Dissertation (2hrs) NDRB 7041 DRS Journals Colloquium (1hr)
4	NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7312 Doctoral Dissertation (2hrs) NDRB 7041 DRS Journals Colloquium (1hr)	NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7312 Doctoral Dissertation (2hrs) NDRB 7041 DRS Journals Colloquium (1hr)
5	NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7312 Doctoral Dissertation (2hrs) NDRB 7041 DRS Journals Colloquium (1hr) Full-Length Seminar	NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7313 Doctoral Dissertation (3hrs) NDRB 7312 Doctoral Dissertation (2hrs) NDRB 7041 DRS Journals Colloquium (1hr) Dissertation Defense
Summer Coursework NDRB 7213 Doctoral Research (3 hrs) during each summer following Years 1 and 2. NDRB 7313 Doctoral Dissertation (3 hrs) following Years 3 and 4 and, if necessary, Year 5.		

VII. FOREIGN LANGUAGE REQUIREMENT.

There is no foreign language requirement for the DRS PhD degree.

VIII. ATTENDANCE REQUIREMENT

Students must attend classes as required. For Research Rotations a minimum of 10 hours per week per rotation is required, for Doctoral Research, ≥19 hours/week effort in the laboratory is expected. All DRS PhD students are considered full-time students and are expected to devote their full effort (no outside employment) to their studies and research. Students are ordinarily permitted two weeks of personal time off (PTO) per year as long as it does not disrupt their participation in the curriculum. All PTO requires approval of the student's Dissertation Advisor/PI (if one has been identified), or the GAR if no PI is in place, and notification to the graduate program administrator. Additional PTO or leave time will require approval by both the Dissertation Advisor/PI and the GAR. If a student cannot attend classes or fulfill laboratory commitments and does not notify their Dissertation Advisor/PI, then their appointment may be suspended, and procedures will begin to ascertain whether or not the student should be allowed to continue in the DRS Program.

IX. TEACHING REQUIREMENT

Students are required to complete the Principles of Scientific Teaching course (NDRB 7113), normally in the Spring of Year 2 in the program. Doctoral students not supported by their Dissertation Advisor/PI may be required to serve as a graduate teaching assistant (GTA) for up to two courses/semester to receive their financial support package. Normally, the Dissertation Advisor/PI will be expected to provide funds for the financial support package.

X. SELECTING A DISSERTATION ADVISOR/LAB

First year DRS PhD students are required to attend a series of scientific orientations to learn about research opportunities in individual faculty laboratories and are urged to meet with individual faculty to discuss research interests. All new doctoral students must participate in three Research Rotations (NDRB 7572). Preferably by May, but at the latest by August of the first year, every student must have identified a faculty member who is willing to advise the student and to supervise and sponsor research for the dissertation. It is essential that the student initiate dissertation research as early during their tenure in the PhD program as possible, but no later than the beginning of Year 2.

A student must submit his/her choice of a Dissertation Advisor/PI with the signed consent of that faculty member and that selection must then be approved by the DRS GAR and the NDRB Department Chair (Form 4). All students are expected to have been approved to pursue dissertation research in the laboratory of a particular supervisor by the beginning of the Year 2 Fall semester. If extenuating circumstances have prevented a student from arranging a Dissertation Advisor/PI by that time, the student can petition the DRS-DSC for up to a maximum of one semester of additional rotation time, but <u>only</u> if additional DRS program faculty are willing to allow the student to rotate in their lab(s). A student who is

unable to identify a Dissertation Advisor/PI will not be allowed to continue in the DRS PhD program. The student may then petition the NDRB Chair for approval to transfer to a Master's degree program. See Master's Degree Option below on page 12.

XI. THE QUALIFYING EXAMINATION

The purpose of the Qualifying Examination (QE) is to determine if the PhD student has acquired the knowledge expected of a doctoral candidate in Developmental & Regenerative Sciences. The QE has two components; a written component which tests the student's breadth of knowledge in the fields of Developmental & Regenerative Sciences, and an oral defense of a written research proposal and related topics which tests the student's knowledge of the particular subfield addressed by their dissertation research proposal.

QE PART 1 – THE WRITTEN QUALIFYING EXAM – The written QE is designed to test the student's ability to apply information learned from core coursework (particularly courses 5123 & 5133) and associated QE Colloquia, and will specifically test: 1) a depth of knowledge on specific topics beyond that required on a standard course exam, 2) the ability to synthesize concepts, hypotheses, and experimental design to address complex questions by drawing upon multiple sources of information, and 3) the ability to demonstrate problem-solving skills. The Molecular Biology and Cell Biology core courses (NDRB 5123 & 5133) are each team-taught by a minimum of three instructors. In addition to taking these two core courses, DRS PhD students will enroll in a QE Colloquium in each semester during their 1st year in the program and will meet with each instructor from the NDRB 5123 and 5133 courses for 1 additional hour/week to examine selected topics in greater detail. Based on these interactions and relevant material from the appropriate core course, each instructor will administer a "qualifier exam" (QE) covering topics discussed during the additional 1 hr/week QE colloquium. These QEs will be in the form of a written exam given at a specified time (other than a regular class period) during a 2-hour period at the discretion of each individual instructor. Each QE will be given during or within one week following each instructor's part of each lecture course. These written QEs will be graded by the instructor and the grades reported to the GAR on behalf of the DRS-DSC within two weeks following administration of the exam, and the GAR or the DRS program administrator will inform each student of their grade on each QE. The QE scores do not contribute to the grade earned for the core course. However, at the end of the spring semester, the DRS Program Administrator will determine the average grade from the six separate QEs to derive each 1st-year DRS PhD student's written QE grade. An overall average grade of "B" or better for the written QEs will be required for students to satisfy the written qualifying exam requirement and remain in good standing in the DRS Doctoral Program. There will be no other written QEs and unless approved by the GAR, there will be no opportunity to retake any individual QE.

ADVANCEMENT TO YEAR 2 OF THE DRS PHD PROGRAM. Upon completion of the Cell Biology, Molecular Biology and Developmental Biology core courses (NDRB 5133, 5123 & 5223) with grades of B or better in each course, and having earned an average grade of B or better on the 6 QEs combined, and upon identifying a DRS program faculty member's lab in which to pursue his/her dissertation research, the GAR on behalf of the DRS-DSC will approve progression of a student into Year 2 of the program. In the event that a student has not met these requirements for progression into Year 2 of the program, the DRS-DSC will have the option to require a student to re-take one or more core courses or one or more written QEs. In cases where a student fails to achieve a grade of B or better in each core

course and fails to achieve an average grade of "B" or better on the 6 QEs, the student will be subject to dismissal from the DRS PhD program at the discretion of the DRS-DSC with approval of the NDRB Chair and the Associate Dean for Graduate Research. In the event that a 1st-year student has not identified a dissertation advisor/PI/lab after three laboratory rotations, they may arrange to take a fourth rotation if one or more program faculty are willing to allow the student to rotate in their labs with the potential for the student to then undertake his/her dissertation research in that lab. If, after exhausting the fourth laboratory rotation option, a student is unable to identify a dissertation advisor/PI/lab, s/he will be subject to dismissal from the DRS PhD Program and may petition to be admitted into an MS program.

QE PART 2 – THE ORAL QUALIFYING EXAM – The second component of the QE will be an oral exam based on a written dissertation proposal prepared by the student. The format of the dissertation proposal should follow that of a standard NIH R01 or NSF research grant application. The written research proposal should describe the student's proposed dissertation research (see The Dissertation Proposal, below). The Oral QE will be scheduled during the second year of study and must be completed no later than May 30th of Year 2. The student in consultation with his/her PI will select the Oral Qualifying Examination Committee (QEC). The QEC will include 5 members, a Chair (other than the dissertation advisor), the dissertation advisor, and three tenured/tenure track DRS graduate faculty. It is recommended that the QEC be composed of faculty who will subsequently become members of the student's Dissertation Committee. The chair of the QEC must be a faculty member other than the Dissertation Advisor. Up to two members of the QEC can be from different institutions if approved by the DRS-DSC. Final approval of the membership of the Oral QEC must be given by the GAR on behalf of the DRS-DSC (Form 6).

Members of the QEC will be presented with a completed form of the dissertation proposal at least two weeks prior to the scheduled oral exam. Each committee member will test the student on the proposal and the student will be required to defend it. A majority passing vote by the committee is needed for the student to pass the oral QE. The QEC may also suggest remediation steps to be taken by the doctoral student to correct specific deficiencies perceived during the oral portion of the exam. These will be put into written form and the student's PI/Dissertation Committee, and the GAR on behalf of the DRS-DSC, will oversee progress with a final report being sent to the QEC upon completion. If the student does not pass the oral QE, s/he may be allowed to retake the oral QE exam one time within the next 3 months, but no later than August 30th of the student's second year in the program. The student also may pass conditionally, in which case the student may be required to take additional coursework or satisfy other requirements stipulated by the QEC. Typically, students who have not passed both the written and oral components of the qualifying examination will not be allowed to progress to PhD candidacy or into the third year of the DRS Doctoral Program. See the section on "Advancement to Candidacy for the PhD Degree" below.

To achieve the most effective and uniform qualifying exams for doctoral students in the DRS program, the following is a description of the objectives of the Oral QE. Student attributes to be assessed during the Oral QE will include:

- Ability to formulate a hypothesis, design experiments to test the hypothesis, and interpret potential outcomes.
- Breadth of knowledge in the biomedical sciences, focusing on fundamental knowledge required to understand modern biomedical research, particularly within the context of the topic of the student's proposed dissertation research.

- Awareness of scientific literature relevant to the proposed dissertation project.
- Awareness of the rationale for, and testable predictions of, the objectives of the proposed research.
- The likelihood that the proposed research will yield interpretable outcomes relevant to the primary hypothesis(es) delineated in the dissertation proposal.
- Consideration of alternative approaches that might be used if the primary approach does not yield useful results.
- Consideration of alternative outcomes of the proposed research.
- Consideration of potential pitfalls associated with the proposed research.
- Consideration of the potential scientific and/or health impact of the proposed research.
- The overall emphasis of the Oral QE will focus on logic, experimental design, ability to revise or abandon initial hypotheses considering emerging data, and ability to interpret unexpected outcomes.

Oral QE Format **-** Qualifying Exam Committees and 2nd year DRS students will follow these procedures before and during the exam:

1. The student will provide a completed copy of the dissertation proposal to all members of the Oral QE Committee (QEC) at least two weeks prior to the exam. QEC members are strongly encouraged to carefully review the proposal in advance of the exam.
2. At the beginning of the exam, the student will be allotted a maximum of 10 minutes in which to present a very succinct synopsis of her/his dissertation proposal using up to a maximum of 5 slides (without multiple animations).
3. The student may have and refer to a hard copy of the dissertation proposal with them during the exam.
4. After the initial 10 minute presentation, the remainder of the exam will be conducted in a discussion format during which committee members will pose questions and the student will be allowed to use a whiteboard to assist with answering the questions as needed. No further use of the computer or presentation will be permitted.

Note: 2nd year DRS students are strongly encouraged to hold a preliminary meeting with their QEC (taking place well in advance of their exam) during which there are no restrictions on how the student can communicate their proposed experiments to the QEC.

XII. MASTER'S DEGREE OPTION

A doctoral student who has failed either component of the qualifying examination may petition the NDRB Chair and the relevant MS Program GAR to transfer to the MS Program in Biology or Biotechnology, to receive a Master's Degree. The student must complete all degree requirements for the MS degree, including the oral comprehensive examination and/or thesis defense (as applicable) as described in the UT San Antonio graduate catalog.

XIII. ADVANCEMENT TO CANDIDACY FOR THE PHD DEGREE

Upon completion of The Oral Qualifying Examination the student can apply to advance to candidacy for the PhD degree (Form 10). The application form (Application for Candidacy for the Doctoral Degree; Form 10) can be obtained from the Program Administrator in the

NDRB Department Office or from the Student Resources section of the PhD Program – DRS TEAM. The criteria for advancement to candidacy are:

1. Completion of all core course work, including core courses, the scientific writing course, the scientific teaching course, and research rotations.
2. Completion of three 3-hr elective courses. Note that in certain cases, a student can be advanced to candidacy before completing all three elective course requirements. Typically, the student should have completed at least two of the three required electives before being advanced to candidacy.
3. Completion of at least 4 hrs of Doctoral Research credit.
4. Identification of a DRS faculty member's lab in which to pursue dissertation research and from which support for that research and the GRA, tuition and health insurance support will be forthcoming.
5. Successful completion of both the written and oral components of the Qualifying Exam and concurrence by the QEC (signatures on Form 10).
5. Approval by the GAR on behalf of the DRS-DSC, Department Chair, and Provost/VP for Academic Affairs.

The GAR and/or Program Administrator, on behalf of the DRS-DSC, will notify the student of his/her advancement to candidacy. If an unfavorable recommendation is made, the student will be notified by the GAR on behalf of the DRS-DSC within two days, and the student may make a written appeal to the DRS-DSC within two weeks of the DRS-DSC's recommendation.

Any student who is admitted into the program to earn the PhD should normally be advanced to candidacy within two years after enrollment. Any student who has not been advanced to candidacy within two years may continue in the program only after individual review and recommendation by the DRS-DSC to the Department Chair, and the Office of the Provost and Vice President for Academic Affairs.

XIV. THE DISSERTATION

The Dissertation Committee. The Dissertation Committee has the responsibility for general supervision of the student's dissertation research and ultimately for certifying to the Office of the Provost and Vice President for Academic Affairs that an acceptable dissertation has been submitted and, in conjunction with the GAR, DRS-DSC and Department Chair, certifying that all degree requirements have been completed. The committee is selected by the student in consultation with his/her Dissertation Advisor/PI and with approval of the GAR on behalf of the DRS-DSC, the Department Chair, and the Office of the Provost and Vice President for Academic Affairs. The Dissertation Committee should be appointed as soon as possible after the Oral Qualifying Examination is passed. The Dissertation Committee consists of five faculty members: at least three must be tenured/tenure track graduate faculty from the NDRB Department and at least one must be a PhD faculty member from an academic institution <u>other</u> than UT San Antonio and/or who does not hold a faculty appointment (including Adjoint or Adjunct Faculty) with UT San Antonio. The fifth committee member can be either from the NDRB Department, another department at UT San Antonio or a second qualified outside member. The Dissertation Advisor/PI chairs the Dissertation Committee. Formal approval of the Dissertation Committee is completed by Appointment of Doctoral Dissertation Committee (Form 9).

Although the supervising professor provides day-to-day guidance to the student, all

members of the committee are available for consultation, and the student should feel free to ask for advice from any of the committee members. The Dissertation Committee also has general responsibility for monitoring the student's dissertation research progress whereas the DRS-DSC will continue to monitor progress through the Program of Study. The student is required to meet with the Dissertation Committee during each (fall and spring) semester (= 2 meetings/year). During these reviews, the student will provide an oral progress report to the Dissertation Committee. The Dissertation Committee will provide written feedback and suggestions in the form of a report (Forms 12a – 12c) to the student and the dissertation advisor/PI summarizing the student's progress. After reviewing the Dissertation Committee's comments with the dissertation advisor, the student will submit the reports to the Program Administrator who will archive them in the student's Program of Study file. If it becomes necessary to change the membership of the Dissertation Committee prior to completion of the dissertation, a petition must be submitted to the GAR for approval on behalf of the DRS-DSC and additional requisite administrative channels. The student should consult with the GAR and the Program Administrator before initiating any action. Changes in the committee should be completed well in advance of the final defense of the dissertation.

The Dissertation Proposal. After passing the written QE, and selecting a Dissertation Advisor/PI/lab, the student must prepare a dissertation proposal. The proposal is prepared during the student's enrollment in the Principles of Scientific Writing Course (NDRB 7143) during the fall semester of the student's second year in the program, and is then presented to the student's PI. The Dissertation Proposal forms the basis of the oral Qualifying Examination which is administered by the oral Qualifying Exam Committee (Forms 6-8) (see above). Ultimately, the Dissertation Proposal is submitted to the Dissertation Committee and the DRS-DSC for approval. The Dissertation Research Proposal should include a title page, abstract, and specific aims page. It should also include background, significance and innovation, preliminary results and experimental design and methods sections. The proposal should thoroughly describe hypotheses to be tested, relevant preliminary data, experimental design and methods including data acquisition and analyses methods, expected results and potential problems. A timeline should also be included in the section before the list of cited references. The student should follow the format for preparing an NIH or NSF grant proposal when preparing the Dissertation Proposal. The Dissertation Committee must sign the Dissertation Proposal Approval form (Form 13). This signed form, with an attached copy of the Dissertation Proposal, is submitted with additional signatures of the GAR, on behalf of the DRS-DSC, and the Department Chair to the College of Sciences and the Office of Graduate Studies.

Dissertation Defense (Final Oral Examination) – When the dissertation is in final form, (in compliance with instructions and formatting requirements provided by the Graduate School), it should be circulated to the Dissertation Committee. When all members of the committee agree, the final oral exam (defense of dissertation) should be scheduled. Note that the final draft of the dissertation is to be circulated to members of the Dissertation Committee at least two weeks prior to the defense date. The request for scheduling of the final oral exam/dissertation defense is to be submitted to the DRS-DSC at least two weeks prior to the exam. Note also that if the outside member of the dissertation committee is from outside of the San Antonio area, the student should coordinate the date of the dissertation defense such that the outside committee member can be invited to present a seminar in the DRS seminar series to cover travel and lodging expenses to bring that outside member to UT San Antonio to be present in person at the dissertation defense. If necessary, the outside member can participate in the defense virtually, but participation in-person is

preferred.

The defense of the doctoral dissertation consists of two parts. The first is a public oral summary of the dissertation research. The Program Administrator will post notices of the defense at least one week prior to the exam. Immediately following the oral presentation, the student meets privately with the Dissertation Committee to be examined on the dissertation and related topics. Once the dissertation is approved by the Dissertation Committee, the committee chairperson (Dissertation Advisor/PI) will notify the Program Administrator who will then notify the GAR, on behalf of the DRS-DSC, the Department Chair, the College of Sciences, and the Graduate School of successful completion of the exam (defense) and that all degree requirements have been met (Form 15). This must be done no later than three weeks prior to the end of the semester. The dissertation must comply with all formatting and submission deadlines established by the Graduate School.

The Graduate School provides guidelines for the format of the dissertation and all signature pages and forms for notification of successful completion of all degree requirements and submission of the dissertation to the library. See “Submission of the Dissertation" below.

Submission of the Dissertation – The following are the steps to be followed by doctoral students in submitting a doctoral dissertation. Students should visit The Graduate School’s Thesis/Dissertation webpage (http://graduateschool.utsa.edu/current-students/category/thesis-dissertation/) for current formatting requirements, including templates, formatting workshops, deadlines, preliminary draft process, and final submission requirements.

1. After passing the written QE, the student should begin working with his/her Dissertation Advisor/PI in preparation to defend the dissertation proposal during the oral QE to be taken during the spring semester of the student’s second year in the DRS program. The student is eligible at this time to formally begin his/her doctoral dissertation research. S/he should enroll in the appropriate doctoral research courses with the Dissertation Supervisor/PI as the instructor.

2. Upon passing the oral QE, the student, in consultation with her/his PI, should form the Dissertation Committee. The criteria for the membership of the committee are outlined above. The student should meet with her/his Dissertation Committee once per fall and spring semester beginning in the fall of the student’s third year in the program and continuing until the student has successfully defended her/his dissertation.

3. The student should enroll in a minimum of 6 semester credit hours of the appropriate Doctoral Research coursework and 35 semester credit hours of the appropriate Doctoral Dissertation coursework with the Dissertation Supervisor/PI as the instructor over the total time that the student works on the dissertation. Students should enroll in at least one Doctoral Research or Doctoral Dissertation course each semester that they are working on the research or writing of the dissertation itself. Students are <u>required</u> to be enrolled in a Doctoral Dissertation course during the semester in which the dissertation is defended and submitted for final approval.

4. The student should schedule a preliminary draft review session and submit a preliminary draft of the dissertation on regular paper to The Graduate School prior to the scheduled defense date for certification that the dissertation conforms to the

format prescribed in the Guide for the Preparation of Doctoral Dissertations at The University of Texas at San Antonio and the formatting template. The preliminary draft process is posted on The Graduate School's website.

5. The student should successfully defend the dissertation. S/he should allow at least a month before the end of the semester to deal with any changes or corrections to the dissertation requested by the Dissertation Committee, and then arrange with the DRS Program Administrator in the NDRB Department Office to process the necessary paperwork. The date and time of the dissertation defense must be announced at least one week prior to the scheduled defense of the dissertation.

6. The student must obtain the required signatures on the Certification of Completion of Dissertation Requirements for Doctor of Philosophy Degree (Form 15) prior to submitting the final electronic copy to the Graduate School (via ProQuest online upload). The student should then provide the signed "Certification of Completion of Dissertation Requirements" to the DRS PhD Program administrator to be placed in the student's program of study file.

7. The student must make any required format changes to the dissertation and complete The Graduate School's final requirements:

    a. **ProQuest Electronic Copy:** The student must submit one electronic copy of the dissertation to the ProQuest website – more information on the electronic submission is available on The Graduate School website.

    b. **Survey of Earned Doctorates:** This survey is required of all students earning a PhD and must be completed online. The link is available on The Graduate School's website.

    ProQuest electronic copy, and confirmation of the Survey of Earned doctorates must be submitted to The Graduate School **no later than 3:00 p.m. on The Graduate School's final submission deadline**. Please visit The Graduate School's website for current semester deadlines and requirements, as well as contact information for the Thesis/Dissertation Officer.

XV. FULL-LENGTH, FORMAL SEMINAR

Prior to the oral defense of the dissertation, each DRS PhD candidate is required to present a full-length, formal seminar describing his/her dissertation research in the formal DRS Seminar Series. The student should work with the coordinator of the DRS Seminar Series to schedule this seminar during the fall or spring semester prior to the dissertation defense.

XVI. PROGRESSION TOWARD THE DEGREE

All students are expected to make reasonable progress toward the degree in a timely fashion – see Course of Study for the Developmental & Regenerative Sciences PhD Program on page 7, the Recommended Sequence of Events for Completion of PhD Requirements on page 15-16, and the Program Milestones Agreement (Form 1). Each year the student and Dissertation Advisor must submit an annual written progress report by May

30th (Forms 5 & 11), and beginning in the fall semester of the third year in the program, the student must schedule semiannual Dissertation Committee meetings (once each semester) and gather completed evaluation forms from each committee member (Forms 12a-12b) to be archived in the student's Program of Study. Students must submit a completed Dissertation Committee Progress Report (Form 17) prior to each meeting of the dissertation committee. If the student has not completed the dissertation within four years of admission to candidacy (which normally = year 6 in the program), the DRS-DSC will recommend what actions, if any, are required and will then transmit its recommendations to the Department Chair, the College of Sciences Associate Dean for Graduate Education, and the Graduate School who will decide the actions that need to be taken, if any.

XVII. RECOMMENDED SEQUENCE OF EVENTS FOR COMPLETION OF PHD REQUIREMENTS:

The following sequence summarizes landmarks of progress that should be followed as closely as possible.

Year One:

1. Consult with DRS GAR and Program Administrator to organize fall semester course enrollment prior to the beginning of the fall semester.
2. Upon arrival at UT San Antonio, attend Graduate School, NDRB Department and DRS Program orientations and required training at beginning of fall semester.
3. Meet Department Chair, DRS GAR and members of the DRS-DSC.
4. Meet DRS faculty and hear about faculty research programs at beginning of semester.
5. Submit any graduate level classes to be considered by the DRS-DSC for potential transfer into the student's program of study.
6. Complete Year 1 core course requirements by end of Spring Semester with grades of B or better in each core course.
7. Complete at least one elective course with grade of B or better.
8. Enroll in QE Colloquia in fall and spring semesters and take associated 6 written "qualifier" exams by the end of the Spring Semester and accumulate an average grade of 3.0 or better.
9. Complete three 10-week research rotations and select a Dissertation Advisor/Lab preferably by May, but by August at the latest.
10. Begin early studies for dissertation research.
11. Present a short oral summary of 1st-year research rotation activities at the end of each rotation.
12. Submit annual progress report by May 30th (Form 5).

Year Two:

1. Complete 2nd-year course work, including Principles in Scientific Writing (NDRB 7143 course – fall semester) and Principles in Scientific Teaching course (NDRB 7113 – spring semester).
2. Continue to enroll in one "standard" colloquium per semester.
3. Prepare dissertation proposal during fall semester (NDRB 7143 course).
4. Complete remaining elective course(s) with grades of B or better (total of three 3hr electives required).
5. Schedule Preliminary QEC and Oral Qualifying Exam by February 1st
6. Take and pass Oral Qualifying Exam based on dissertation proposal and administered

by Oral Qualifying Examination Committee anytime prior to or on May 30th of Year 2.
7. Be recommended for Advancement to Candidacy by the DRS-DSC.
8. Form Dissertation Committee – 5 members, including at least one external member.
9. Submit annual progress report by May 30th (Form 11).
10. Submit dissertation proposal as application for extramural funding by end of Summer semester.

Year Three:
1. Complete any remaining required course work including electives, if needed.
2. Pursue dissertation research.
3. Schedule each semester's Dissertation Committee meeting at the ***beginning*** of each semester and hold one committee meeting BEFORE the end of each semester.
4. Prepare a Dissertation Committee Meeting Report (Form 17) prior to each Dissertation Committee meeting. Collect and file evaluations from committee members. (Form 12a)
5. Continue to enroll in one colloquium per semester.
6. Present in NDRB Department Fall Symposium.
2. Submit annual progress report by May 30th (Form 11).

Years Four & Five:
1. Continue to meet with Dissertation Committee once per semester as in year 3 (Forms 12b & 12c). Prepare a Dissertation Committee Meeting Report (Form 17) prior to each meeting.
2. Submit annual progress reports by May 30th. (Form 11)
3. Complete colloquia requirements.
4. Complete dissertation research.
5. Present in NDRB Department Spring Symposium (4th Year students).
6. Present full-length DRS seminar (5th Year students).
7. Confirm that Dissertation Committee agrees you are ready to complete and defend your dissertation.
8. Prepare written dissertation.
9. Complete dissertation and obtain Dissertation Committee approval that the dissertation is ready to be defended.
10. Schedule date for Dissertation Defense by the ***beginning*** of the defense term.
11. Submit early copy of dissertation to Graduate School to ensure proper formatting.
12. Notify the Program Administrator of the time, date, place and title of the Defense. S/he will then submit that information to the Graduate School.
13. Successfully defend the dissertation.
14. Submit copy of dissertation to the Graduate School (via electronic upload to ProQuest) for publication. Bound copies can be ordered through ProQuest upon submission of electronic copy.

XVIII. RESPONSIBILITIES OF THE STUDENT

1. Complete all required coursework with grades of B or better.
2. Complete three elective courses with grades of B or better.
3. Complete three research rotations.
4. Complete required Doctoral Research coursework.
5. Pass the written qualifying requirement based on colloquia associated with two core courses – Principles of Cell Biology (fall semester) and Principles of Molecular Biology (spring semester).
6. Select a dissertation project lab/PI.
7. Prepare the dissertation project proposal.

8. Form an Oral Qualifying Exam Committee.
9. Pass the oral qualifying requirement based on the dissertation proposal.
10. Advance to candidacy.
11. Form a Dissertation Committee.
12. Meet with the Dissertation Committee during each fall and spring semester prior to defense of the dissertation.
13. Complete required Doctoral Dissertation coursework.
14. Complete a total of 10 colloquia (1/semester for 5 years).
15. Complete dissertation research and compose the Dissertation.
16. Present a full-length seminar in the DRS Seminar Series.
17. Defend the Dissertation.

XIX. RESPONSIBILITIES OF THE WRITTEN QUALIFYING EXAMINATION INSTRUCTORS

1. The written qualifying examination is conducted in six parts during the fall and spring semesters of the student's first year in the DRS PhD program. In the fall, the three primary instructors from the Principles of Cell Biology course meet with the 1st-year PhD students for an extra hour each week (5 weeks per instructor) to go into a topic chosen by the instructor in more depth than is possible in the lectures associated with the regular course. This is done in the format of a colloquium (NDRB 7041 – QE Colloquium). Similarly, in the spring, the three primary instructors from the Principles of Molecular Biology course meet with the 1st-year PhD students for an extra hour each week (5 weeks per instructor) to go into topics chosen by the instructors in more depth than is possible in the lectures associated with the regular course.
2. At the end of each 5-week period each individual instructor prepares one or more questions to be answered by the 1st-year DRS PhD students.
3. The DRS PhD program administrator assigns each student a code name to provide anonymity.
5. Students are afforded a two-hour period to answer the QE question(s) and return their answers by email to the program administrator, who then forwards those answers – labeled only by the code names – to the instructor.
6. The instructor assigns letter grades to each student's answer(s) and returns those grades to the program administrator who then breaks the code and informs the instructor, the GAR, and each individual student of their grades on that instructor's QE.
7. 1st-year DRS PhD students are required to earn a B average (3.0) on the six written QEs to remain in good standing in the DRS PhD program.

XX. RESPONSIBILITIES OF THE SUPERVISING PROFESSOR/DISSERTATION ADVISOR

1. Work with the student to conceive a dissertation research project.
2. Provide the student with general guidance in preparation of his/her dissertation proposal.
3. In conjunction with the DRS-DSC and the Dissertation Committee (once formed), monitor the student's progress in courses and research throughout the student's remaining tenure in the program.

4. Attend the oral examination of the student as a voting member of the QE committee. Note that the Dissertation Supervisor cannot chair the Qualifying Exam Committee, should not assist the student in answering questions from other members of the QEC, and should limit his/her questions of the student to a minimum.
5. Participate in the evaluation of the student for Advancement to Candidacy by substantiating, or not substantiating, the student's potential for independent and productive research.
6. Assist the student with forming, and then chair the student's Dissertation Committee.
7. Ensure that the student meets with the Dissertation Committee twice per year.
8. Chair the meetings of the Dissertation Committee and Chair the Dissertation Defense.
9. Assist the student with career development considerations and planning.
10. Encourage the student to attend at least one relevant state-, national- and/or international conference per year to present her/his dissertation research, and work with the student to ensure a high-quality poster or oral presentation.
11. Assist the student in any way possible with identifying potential positions (e.g. postdocs) to pursue following graduation.

XXI. RESPONSIBILITIES OF THE ORAL QUALIFYING EXAMINATION COMMITTEE

1. The oral qualifying examination committee will consist of 5 members total. This will include 3 or 4 DRS graduate faculty members plus the dissertation advisor. It is recommended that the qualifying examination committee be composed primarily of faculty who will become part of the student's Dissertation Committee. If the person who is anticipated to be the external member of the Dissertation Committee is local and so able to be present for the oral QE, then s/he may be a member of the oral QE committee (following approval as a "special member" of the graduate faculty). If not then 4 other members of the DRS program faculty plus the dissertation advisor/PI should make up the 5-person oral QE committee. The chair of the qualifying examination committee must be a faculty member <u>other</u> than the Dissertation Advisor.
2. The committee will determine the initial feasibility of the Dissertation Proposal based on the student's initial draft. The Oral QE Committee chair will inform the student of the committee's decision within three days after receipt of the initial proposal draft by the committee members.
3. The committee will examine the student on the written proposal and related areas. The chair of the Oral QE Committee will act as moderator for the examination.
4. Upon completion of the examination, the committee will evaluate the performance of the student and decide whether or not the student has passed the examination. Passing the exam requires a favorable vote from a majority of the committee members. Advancement to candidacy also requires approval of the supervising professor.
5. The chair of the Oral Exam Committee will inform the student of the committee's decision immediately after the committee's deliberations.
6. The chair of the Oral Exam Committee will inform the DRS GAR of the committee's decision and will provide the Program Administrator with the signed

Approval/Disapproval statement to be archived in the student's Program of Study file.

XXII. RESPONSIBILITIES OF THE DISSERTATION COMMITTEE

1. The Dissertation Committee will consist of FIVE tenured, tenure-track and/or special members of the Program Faculty selected by the student and her/his PI and approved by the GAR on behalf of the DRS DSC and the Department Chair.
2. One member of the Dissertation Committee must be external to UT San Antonio and/or any Adjoint or Adjunct UT San Antonio faculty and must be approved as a Special Member of the DRS PhD Program faculty.
3. The Dissertation Committee will be formed as soon as possible after the student has successfully passed the oral qualifying exam, which normally occurs during the spring semester of the student's second year in the program and is normally coincident with the student advancing to candidacy.
4. The Dissertation Committee will meet, in person or virtually (preferably in person), with the student once per semester beginning in the fall semester of the student's third year in the program and continuing until the student defends her/his dissertation.
5. The student's PI will chair the Dissertation Committee and oversee all meetings of the committee.
6. Each meeting of the Dissertation Committee will start with the student out of the room while the PI gives her/his report of the student's progress to the committee, including any concerns or issues that may have arisen. This will be followed by the student presenting a summary of progress on the dissertation research project to the committee and opportunities for the committee to question the student on her/his progress and/or make recommendations for alterations to the student's plan or approach. This presentation should conclude with the student summarizing expected progress that will occur prior to the next meeting with the Dissertation Committee. Each meeting will then conclude with the PI out of the room to afford the student an opportunity to speak privately with the other members of the Dissertation Committee and vice versa.
7. At each meeting of the Dissertation Committee, each committee member will complete an evaluation form providing her/his assessment of the student's progress to date and any recommended alterations to the student's approach to the research. These assessments will be provided to the student to review with her/his PI and then will be forwarded to the Program Administrator to be archived in the student's program of study.
8. As needed, the student and/or PI may propose changes to the Dissertation Proposal during the course of the dissertation research project which must be approved by a majority of the Dissertation Committee in order to be implemented.
9. When the student and her/his PI feel the time is right, they will propose to the Dissertation Committee that the student is nearing completion of the dissertation research project and is ready to compose the writtedn dissertation in advance of defense of the dissertation. Note that completion of the dissertation project, defense of the dissertation and graduation from the DRS PhD Program should normally happen by the end of the student's fifth year in the program. If necessary, and with the agreement of the Dissertation Committee, the student may extend the time to complete and defend the dissertation to the student's sixth year in the program prior to graduation. No student should extend the time to complete and defend the dissertation and graduate from the DRS PhD

program beyond the student's sixth year in the program.

10. If the Dissertation Committee agrees that the dissertation project is nearing completion, the student will be encouraged to begin writing the dissertation and scheduling the defense.
11. Note that there is no specific requirement for publication of the results of the dissertation research prior to defense of the dissertation and/or graduation from the program. However, the program does require that the dissertation research be original and of "publication quality" – i.e. – "publishable." Assessment of the quality of the dissertation research in this regard is within the purview of the Dissertation Committee and represents one criterion on which the student's ability to successfully defend the dissertation will be based.

XXIII. GENERAL ACADEMIC REGULATIONS

Rules concerning registration, late registration, adding classes, dropping classes, and auditing classes can all be found in the Graduate catalog or in the schedule of classes. Academic standing, cancellation of enrollment, withdrawal procedures, reinstatement in the University and student classification are also addressed in the Graduate catalog.

XXIV. ANNUAL PROGRESS REPORT. To assess student progress toward the DRS PhD degree, an annual written progress report will be submitted to the DRS-DSC by the student and the PI (Forms 5 & 11). This report should be submitted by May 30th and will be immediately reviewed by the DRS GAR and then provided to the Program Administrator to be archived in the student's program of study file. If deficiencies or other matters of concern are identified in the report, discussions involving the student, the PI and the GAR will be scheduled. If further action is warranted, the entire DRS-DSC will be asked to review the pending action in advance.

XXV. NDRB DEPARTMENT DOCTORAL STUDENT GUIDELINES FOR GRIEVANCE REMEDIATION

1. **Review University Policies.** Upon identification of a grievance, a doctoral (PhD) student in the NDRB Department (i.e., a student in either the DRS or Neuro PhD programs) should review the relevant university policies and procedures (see list below). If applicable, the student should follow the reporting procedures as outlined on the following links.

   - Equal Opportunity and Title IX Campus Resources: https://www.utsa.edu/eos/faq/resources.html
   - Equal Opportunity and Title IX Office FAQ: https://www.utsa.edu/eos/faq/
   - Mandatory Reporter FAQ: https://www.utsa.edu/eos/faq/MandatoryReporterFAQs.html
   - Pregnancy and Parenting FAQ: https://www.utsa.edu/eos/faq/PregnancyandParentingFAQs.html
   - Witness FAQ: https://www.utsa.edu/eos/faq/WitnessFAQs.html
   - Whistleblower and Retaliation Policy: https://www.utsa.edu/compliance-and-risk-services/report-it/whistleblower-retaliation.html

2. **Interpersonal remediation.** If possible, the student is encouraged to speak with the person toward whom the grievance is directed to see if the situation can be resolved interpersonally. If the student is not comfortable speaking directly with the person toward whom the grievance is directed or if satisfactory resolution is not be achieved interpersonally, the student can report the matter to the department.

3. **Departmental reporting of a grievance**. The student should report grievances to the Graduate Advisor of Record (GAR) of the relevant PhD program. If the student prefers not to bring the matter to the attention of the GAR, the student should bring the matter to the attention of the Department Chair.

4. **Departmental remediation.** Upon being informed of a student's grievance, the relevant parties within the department (student, GAR and/or Department Chair) will discuss the appropriate course of action. The GAR and/or Department Chair will follow university procedures for Mandatory Reporters: https://www.utsa.edu/eos/MandatoryReporter.html.

   - If the grievance can be addressed at the level of the relevant program and/or Doctoral Studies Committee (DSC), a meeting of the DSC plus the Department Chair will be scheduled at which the student will be invited to present their grievance. The steps for remediation may be discussed during this meeting depending on the nature of the grievance.
   - If the grievance involves a faculty member, or another student enrolled in the program, a separate meeting with the DSC plus the Department Chair will be scheduled at which the target of the grievance will be allowed to present their perspective.
   - Following these meetings, the DSC plus Department Chair will discuss the actions needed to resolve the grievance.
   - Depending on the nature of the specific grievance, the following entities will be informed and asked for input as needed:

     - The College of Sciences Associate Dean for Graduate Education, and, by extension, the Dean of the College of Sciences
     - The UT San Antonio Graduate School
     - UT San Antonio Legal services
     - UT San Antonio Counseling services
     - The Office for Research and Innovation (VPR office)
     - Academic Affairs (Provost's office)

   - If the grievance cannot be resolved informally to the satisfaction of the student, the student should follow the Student Complaint Process to initiate a complaint following the steps outlined in the student catalog at https://catalog.utsa.edu/policies/administrativepoliciesandprocedures/studentgrievances/

XXVI. DRS PHD PROGRAM FORMS

[Note: PDF versions of forms are shown below as examples. Fillable versions of these forms are available in TEAMS or from the DRS PhD Program Administrator.]

CHECKLIST

Administrative Requirements for the

Developmental and Regenerative Sciences Doctoral Program

_____ 1 – Milestones Agreement

_____ 2 - Interim Program of Study* (please select the POS for your catalog)

_____ 3 – 1st Year Lab Rotation Report

_____ 4 – Approval of Doctoral Supervisor

_____ 5 – 1st Year Annual Progress Report

_____ 6 – Qualifying Exam Committee

_____ 7 – Completion of Qualifying Exam*

_____ 8 – Application for Outside Graduate Special Grad Faculty Member – needs approval by graduate council *

_____ 9 - Appointment of Doctoral Dissertation Committee*

_____ 10 - Application for Candidacy for the Doctoral Degree*

_____ 11 - Annual Report for 2nd-5th year students (one for each year)

_____ 12a - Dissertation Committee Reports (one for each meeting) – 3rd yr

_____ 12b - Dissertation Committee Reports (one for each meeting) – 4th yr

_____ 12c - Dissertation Committee Reports (one for each meeting) – 5th yr

_____ 13 - Dissertation Proposal Approval*

_____ 14 – Final Program of Study* (please select the POS for your catalog)

_____ 15 - Certification of Completion of Dissertation Requirements*

_____ 16 - Upload final dissertation draft to ProQuest by deadline

* Indicates Graduate School approval needed

Milestones Agreement Form
UTSA Doctoral Program in Developmental and Regenerative Sciences

Student:

Year in DRS PhD program:

Advisor:

This form is provided for the purpose of informing students about the academic milestones that they will be expected to reach in order to earn their Ph.D. degree as well as when they are expected to complete these milestones. Students are expected to reach each milestone within the specified time period in order to make satisfactory progress through the program. Students who are not making satisfactory progress may lose funding, be placed on academic probation, or be dismissed from the program.

Academic Advising

Upon entering the UTSA Doctoral program in Developmental and Regenerative Sciences, all students will be assigned an advisor. The advisor will be a member of the program department. During the first year in the program the student's advisor will be the Graduate Advisor of Record (GAR) for the Developmental and Regenerative Sciences Doctoral Program (= the Chair of the DRS Doctoral Studies Committee). Once the student has selected a PI in whose lab he/she will pursue their dissertation research (selection to be made by the end of the first year in the program), that individual will become the student's advisor, but the GAR and the DRS-DSC will still monitor progress of all program students as well.

Academic advising includes the following elements that are designed to ensure that students remain in good academic standing and make satisfactory progress through the program. Advisors are responsible for the following:

- Ensuring that semi-annual reviews between student and advisor and/or supervising committee occur. All program students will attend mandatory orientation sessions at the beginning of each semester. In addition, all program students will meet individually with the GAR to obtain approval of course enrollment forms for each semester and each summer session. Note that program students who have selected a dissertation advisor will obtain that advisor's approval of their course enrollment form before meeting with the GAR.
- A student's selection of a dissertation advisor must be approved by the DRS-DSC and the Department Chair.
- Upon advancement to candidacy, program students will have convened a Dissertation Committee, and will meet with that committee twice each year – once during the fall semester and once during the spring semester. Each member of the Dissertation Committee will complete a progress evaluation form following each meeting of the committee. The student will be asked to review the forms with his/her dissertation advisor and then

submit the forms to the program administrator so that they can be placed in the student's file.

- Each program student will be required to complete and submit an annual progress report to the program administrator prior to May 30th of each calendar year and that report will be placed in the student's file.
- Program students will follow the curriculum order outlined in the DRS PhD Program Policy and Procedures Manual unless approved by the GAR to do otherwise.
- Program students are normally expected to complete the DRS PhD program within five years. Requests to extend this period of matriculation must be approved by the student's dissertation advisor, the members of the Dissertation Committee, the DRS-DSC and the Department Chair.

Annual Milestones to be completed by CMB PhD Program students:

Year 1 –

- Attend weekly DRS seminar
- Complete three core courses – BIO 5113 (Principles of Biochemistry), BIO 5123 (Principles of Molecular Biology) and BIO 5133 (Principles of Cell Biology) and earn a grade of B or better in each of these courses.
- Complete three qualifying exam colloquia (BIO 7041) associated with the three Principles courses and take a total of nine qualifer exams and earn an average grade of 3.0 or better (note – this constitutes the written qualifying exam requirement for this program).
- Complete three research rotations of 10 weeks each in laboratories of three different program faculty.
- Complete the Research Ethics and Design course (BIO 7413) with a grade of B or better.
- Select a dissertation advisor in whose lab the student will pursue his/her dissertation research.
- Perform Doctoral Research (BIO 7213) during the summer.

Year 2 –

- Attend weekly DRS and/or STCEID seminar
- Complete at least two elective courses (= graduate level lecture courses in Biology or related area) and earn a grade of B or better in each of these courses.
- Complete the Principles of Scientific Writing course (BIO 7143) and in so doing, prepare a draft of the dissertation proposal.
- Complete the Teaching in the Life Sciences requirement (BIO 7113).
- Complete two colloquium courses (BIO 7041).
- Perform Doctoral Research for academic credit (BIO 7212).
- Present synopsis of dissertation project in the Annual DRS Spring Symposium.
- Convene an Oral Qualifying Exam Committee and pass the oral qualifying

exam no later than May 30th of the second year in the program.

- Advance to candidacy.
- Perform Doctoral Research for academic credit (BIO 7213) during the summer.

Year 3 –

- Attend weekly DRS seminar
- Complete remaining elective courses to a total of three courses taken, and earn a grade of B or better in each of these courses.
- Complete two colloquium courses (BIO 7041).
- Convene a Dissertation Committee and have this approved by the DRS-DSC and the Graduate School.
- Perform Doctoral Research for academic credit (BIO 7315-8).
- Meet once during each semester with the Dissertation Committee and have committee members complete and submit progress evaluation forms.
- Present synopsis of dissertation project progress in the Annual DRS Spring Symposium.
- Perform Doctoral Research for academic credit (BIO 7213) during the summer.

Year 4 –

- Attend weekly DRS seminar
- Complete two colloquium courses (BIO 7041).
- Perform Doctoral Dissertation for academic credit (BIO 7318).
- Meet once during each semester with the Dissertation Committee and have committee members complete and submit progress evaluation forms.
- Present synopsis of dissertation project progress in the Annual DRS Spring Symposium.
- Perform Doctoral Research for academic credit (BIO 7213) during the summer.

Year 5 –

- Attend weekly DRS seminar
- Complete two colloquium courses (BIO 7041).
- Perform Doctoral Dissertation for academic credit (BIO 7318).
- Meet once during each semester with the Dissertation Committee and have committee members complete and submit progress evaluation forms.
- Present a full-length public seminar in either the Developmental and Regenerative Sciences Seminar Series or the South Texas Center

for Emerging Infectious Diseases Seminar Series.

- Defend the doctoral dissertation to the satisfaction of the Dissertation Committee.

Degree Completion Checklist for Students

- Maintain active student status by registering for courses every fall and spring semester and summer session.
- Complete, have approved by the student's advisor and the GAR, and submit to the program administrator, the Annual Report showing adherence to the *Annual Milestones* detailed above no later than May 30th of each year.
- Complete all required coursework as detailed above.
- Schedule and successfully complete required written and oral qualifying exams as detailed above.
- Form your dissertation committee in consultation with your advisor and the GAR.
- Have your committee approved by the DRS DSC and the Graduate School
- Prepare and successfully defend your dissertation proposal as part of the oral qualifying exam requirement.
- Apply for Advancement to Candidacy upon completion of the required core course work and completion of the written and oral qualifying exams with passing grades.
- Enroll in required dissertation hours and complete your dissertation.
- Successfully defend your dissertation to the satisfaction of the Dissertation Committee.
- Submit required documentation to the Graduate School for completion and graduation

I have read this form and have had the opportunity to discuss the information contained in it with my advisor. I understand the academic milestones that I am expected to reach in order to successfully complete the UTSA Developmental and Regenerative Sciences Doctoral program, as well as the expected timeline for completing these milestones. I also understand that failure to meet these milestones according to the schedule shown may result in loss of stipend funding, placement on academic probation, or dismissal from the program.

_____

Student's Signature Date

_____

Advisor's Signature Date

_____

DSC Chair's Signature Date

THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Interim Program of Study for the Doctor of Philosophy

Student Name: Student ID:
Program of Study for Doctor of Philosophy MyUTSA ID:
Catalog: 2019 - 2021 Major: Developmental & Regenerative Sciences Concentration:
The following courses are required for the degree indicated below:

Core Courses (18 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
BIO 5123	Principles of Molecular Biology	3			
BIO 5133	Principles of Cell Biology	3			
BIO 5213	Principles of Chemical Biology	3			
BIO 7113	Supervised Teaching in Biology	3			
BIO 7143	Principles of Biological Scientific Writing	3			
BIO 7571	Experimental Techniques in Biology	1			
BIO 7572	Experimental Techniques in Biology	2			
				Total Credits:	**18**

Colloquia (10 credit hours minimum- a minimum of 1 credit hour each semester throughout tenure in the program):

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
				Total Credits:	**10**

Doctoral Research and Dissertation (42 credit hours required)

Discipline and Number	Course Title	Credit Hours		Grade	Use Towards Degree
BIO 7211	Doctoral Research	1			
BIO 7212	Doctoral Research	2			
BIO 7212	Doctoral Research	2			
BIO 7212	Doctoral Research	2			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
		Total Research Credits			
BIO 7311	Doctoral Dissertation	1			
BIO 7312	Doctoral Dissertation	2			
BIO 7312	Doctoral Dissertation	2			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
		Total Dissertation Credits			
				Total Credits:	**42**

Electives (9 credit hours required)

These can be selected from any 5000-7000 level courses offered in Biology or from any 5000-7000 level courses offered in other departments with the approval of the Cell and Molecular Doctoral Studies Committee

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
		3			
		3			
		3			
				Total Credits: 9	**9**

*Minimum of 85 hours of courses with B or above.
**Indicates course used towards MS degree (maximum of 30 hours, comparable to core and elective courses).

TOTAL DEGREE CREDITS: **79**

Revision date: 9/14/22

Upon completion of the above requirements, in addition to meeting the University-wide requirements for all Doctoral degrees, the above named student has satisfied all requirements for Doctor of _____Philosophy_____.

Supervising Professor's Signature _____ Date _____

Advisor of Record's Signature _____ Date _____

Signature _____ Date _____
Doctoral Program Committee Chairman

Signature_____ Date_____
Dean of College of Science

Signature _____ Date _____
Dean of Graduate School

NOTES:
Dissertation Committee: Chair: _____ Member: _____

Member: _____ Member: _____

Member: _____ Outside Member: _____

THE ORIGINAL COPY OF THIS FOR MUST BE FILED WITH THE REGISTRAR

---------- DO NOT WRITE BELOW THIS LINE ----------

Applied for degree	_____	Time Limit (8yr)	_____	Hours of A _____ x 4 _____	
Advanced to Candidacy	_____	Comprehensive Exam	_____	B _____ x 3 _____	
Admission Cleared	_____	Dissertation Filed	_____	C _____ x 2 _____	
				Total _____: GPA (3.0 min) _____	

Revision date: 9/14/22

THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Interim Program of Study for the Doctor of Philosophy

Student Name: Student ID:
Program of Study for Doctor of Philosophy MyUTSA ID:
Catalog: 2021 - 2023 Major: Developmental & Regenerative Sciences Concentration:
The following courses are required for the degree indicated below:

Core Courses (19 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
BIO 5123	Principles of Molecular Biology	3			
BIO 5133	Principles of Cell Biology	3			
BIO 5213	Principles of Chemical Biology	3			
BIO 7113	Supervised Teaching in Biology	3			
BIO 7143	Principles of Biological Scientific Writing	3			
BIO 7572	Experimental Techniques in Biology	2			
BIO 7572	Experimental Techniques in Biology	2			
				Total Credits:	**19**

Colloquia (10 credit hours minimum- a minimum of 1 credit hour each semester throughout tenure in the program):

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
				Total Credits:	**10**

Doctoral Research and Dissertation (41 credit hours required)

Discipline and Number	Course Title	Credit Hours		Grade	Use Towards Degree
BIO 7211	Doctoral Research	1			
BIO 7212	Doctoral Research	2			
BIO 7212	Doctoral Research	2			
BIO 7212	Doctoral Research	2			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
		Total Research Credits			
BIO 7311	Doctoral Dissertation	1			
BIO 7312	Doctoral Dissertation	2			
BIO 7312	Doctoral Dissertation	2			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
		Total Dissertation Credits			
				Total Credits:	**41**

Electives (9 credit hours required)

These can be selected from any 5000-7000 level courses offered in Biology or from any 5000-7000 level courses offered in other departments with the approval of the Cell and Molecular Doctoral Studies Committee

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
		3			
		3			
		3			
				Total Credits: 9	**9**

*Minimum of 79 hours of courses with B or above.
**Indicates course used towards MS degree (maximum of 30 hours, comparable to core and elective courses).

TOTAL DEGREE CREDITS: **79**

Revision date: 9/14/22

Upon completion of the above requirements, in addition to meeting the University-wide requirements for all Doctoral degrees, the above named student has satisfied all requirements for Doctor of _____Philosophy_____.

Supervising Professor's Signature _____ Date _____

Advisor of Record's Signature _____ Date _____

Signature _____ Date _____
Doctoral Program Committee Chairman

Signature_____ Date_____
Dean of College of Science

Signature _____ Date _____
Dean of Graduate School

NOTES:
Dissertation Committee: Chair: _____ Member: _____

Member: _____ Member: _____

Member: _____ Outside Member: _____

THE ORIGINAL COPY OF THIS FOR MUST BE FILED WITH THE REGISTRAR

---------- DO NOT WRITE BELOW THIS LINE ----------

Applied for degree	_____	Time Limit (8yr)	_____	Hours of A _____ x 4 _____	
Advanced to Candidacy	_____	Comprehensive Exam	_____	B _____ x 3 _____	
Admission Cleared	_____	Dissertation Filed	_____	C _____ x 2 _____	
				Total _____: GPA (3.0 min) _____	

Revision date: 9/14/22

THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Interim Program of Study for the Doctor of Philosophy

Student Name: Student ID:

Program of Study for Doctor of Philosophy MyUTSA ID:

Catalog: 2023 - 2025 Major: Developmental & Regenerative Sciences

The following courses are required for the degree indicated below:

Core Courses (20 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 5001	Ethical Conduct in Research	1			
NDRB 5123	Principles of Molecular Biology	3			
NDRB 5133	Principles of Cell Biology	3			
NDRB 5223	Principles of Developmental Biology	3			
NDRB 7113	Prin. of Biological Scientific Teaching	3			
NDRB 7143	Principles of Biological Scientific Writing	3			
NDRB 7572	Experimental Techniques in Biology	2			
NDRB 7572	Experimental Techniques in Biology	2			
				Total Credits:	**20**

Colloquia (10 credit hours required - a minimum of 1 credit hour each semester throughout tenure in the program):

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 7041	Principles of Cell Biology QE	1			
NDRB 7041	Principles of Molecular Biology QE	1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
				Total Credits:	**10**

Doctoral Research and Dissertation (43 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 7211	Doctoral Research	1			
NDRB 7212	Doctoral Research	2			
NDRB 7212	Doctoral Research	2			
NDRB 7213	Doctoral Research	2			
NDRB 7213	Doctoral Research	3			
NDRB 7214	Doctoral Research	4			
NDRB 7215	Doctoral Research	5			
NDRB 7216	Doctoral Research	6			
		Total Research Credits			
NDRB 7311	Doctoral Dissertation	1			
NDRB 7312	Doctoral Dissertation	2			
NDRB 7312	Doctoral Dissertation	2			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7314	Doctoral Dissertation	3			
NDRB 7315	Doctoral Dissertation	3			
NDRB 7316	Doctoral Dissertation	3			
		Total Dissertation Credits			
				Total Credits:	**43**

Electives (6 credit hours required)

These can be selected from any 5000-7000 level courses offered in Biology or from any 5000-7000 level courses offered in other departments with the approval of the Cell and Molecular Doctoral Studies Committee

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
		3			
		3			
				Total Credits:	**6**

*Minimum of 79 hours of courses with B or above.

**Indicates course used towards MS degree (maximum of 30 hours, comparable to core and elective courses).

TOTAL DEGREE CREDITS: **79**

Revision date: 6/13/23

Upon completion of the above requirements, in addition to meeting the University-wide requirements for all Doctoral degrees, the above named student has satisfied all requirements for Doctor of _____Philosophy_____.

Supervising Professor's Signature _____ Date _____

Advisor of Record's Signature _____ Date _____

Signature _____ Date _____
Doctoral Program Committee Chairman

Signature_____ Date_____
Dean of College of Science

Signature _____ Date _____
Dean of Graduate School

NOTES:
Dissertation Committee: Chair: _____ Member: _____

Member: _____ Member: _____

Member: _____Outside Member: _____

THE ORIGINAL COPY OF THIS FOR MUST BE FILED WITH THE REGISTRAR

---------- DO NOT WRITE BELOW THIS LINE ----------

Applied for degree	_____	Time Limit (8yr)	_____	Hours of A _____	4 _____
Advanced to Candidacy	_____	Comprehensive Exam	_____	B _____	x 3 _____
Admission Cleared	_____	Dissertation Filed	_____	C _____	x 2 _____
				Total _____	: GPA (3.0 min) _____

THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Interim Program of Study for the Doctor of Philosophy

Student Name: Student ID:

Program of Study for Doctor of Philosophy MyUTSA ID:

Catalog: 2025 - 2027 Major: Developmental & Regenerative Sciences

The following courses are required for the degree indicated below:

Core Courses (20 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 5001	Ethical Conduct in Research	1			
NDRB 5123	Principles of Molecular Biology	3			
NDRB 5133	Principles of Cell Biology	3			
NDRB 5223	Principles of Developmental Biology	3			
NDRB 7113	Prin. of Biological Scientific Teaching	3			
NDRB 7143	Principles of Biological Scientific Writing	3			
NDRB 7572	Experimental Techniques in Biology	2			
NDRB 7572	Experimental Techniques in Biology	2			
				Total Credits:	**20**

Colloquia (10 credit hours required - a minimum of 1 credit hour each semester throughout tenure in the program):

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 7041	Principles of Cell Biology QE	1			
NDRB 7041	Principles of Molecular Biology QE	1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
				Total Credits:	**10**

Doctoral Research and Dissertation (43 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 7211	Doctoral Research	1			
NDRB 7212	Doctoral Research	2			
NDRB 7212	Doctoral Research	2			
NDRB 7213	Doctoral Research	2			
NDRB 7213	Doctoral Research	3			
NDRB 7214	Doctoral Research	4			
NDRB 7215	Doctoral Research	5			
NDRB 7216	Doctoral Research	6			
		Total Research Credits			
NDRB 7311	Doctoral Dissertation	1			
NDRB 7312	Doctoral Dissertation	2			
NDRB 7312	Doctoral Dissertation	2			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7314	Doctoral Dissertation	3			
NDRB 7315	Doctoral Dissertation	3			
NDRB 7316	Doctoral Dissertation	3			
		Total Dissertation Credits			
				Total Credits:	**43**

Electives (6 credit hours required)

These can be selected from any 5000-7000 level courses offered in Biology or from any 5000-7000 level courses offered in other departments with the approval of the Cell and Molecular Doctoral Studies Committee

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
		3			
		3			
				Total Credits:	**6**

*Minimum of 79 hours of courses with B or above.

**Indicates course used towards MS degree (maximum of 30 hours, comparable to core and elective courses).

TOTAL DEGREE CREDITS: **79**

Revision date: 6/13/23

Upon completion of the above requirements, in addition to meeting the University-wide requirements for all Doctoral degrees, the above named student has satisfied all requirements for Doctor of _____Philosophy_____.

Supervising Professor's Signature _____ Date _____

Advisor of Record's Signature _____ Date _____

Signature _____ Date _____
Doctoral Program Committee Chairman

Signature_____ Date_____
Dean of College of Science

Signature _____ Date _____
Dean of Graduate School

NOTES:
Dissertation Committee: Chair: _____ Member: _____

Member: _____ Member: _____

Member: _____Outside Member: _____

THE ORIGINAL COPY OF THIS FOR MUST BE FILED WITH THE REGISTRAR

---------- DO NOT WRITE BELOW THIS LINE ----------

Applied for degree	_____	Time Limit (8yr)	_____	Hours of A _____	4 _____
Advanced to Candidacy	_____	Comprehensive Exam	_____	B _____	x 3 _____
Admission Cleared	_____	Dissertation Filed	_____	C _____	x 2 _____
				Total _____	: GPA (3.0 min) _____

LAB ROTATION REPORT

_____
Student Name

(To be completed and submitted by first-year DRS Doctoral Students immediately following each laboratory rotation)

Part A: To be completed by the student:

For each laboratory rotation (8 weeks or full semester) provide the following information on page 3:

1. List the name of the supervising professor and the dates you rotated in that lab.
2. List the objectives of the rotation project.
3. Provide a summary of the experimental procedures, results and conclusions.

B: To be completed by each rotation supervisor:

Provide a brief evaluation of the student's performance during the rotation and list any areas that need improvement. This evaluation is to be shared with the student.

Student _____

Rotation Supervisor _____

DRS-DSC Chairman _____

Part A: To be completed by the student:

For each laboratory rotation (8 weeks or full semester) provide the following information below:

- List the name of the supervising professor and the dates you rotated in that lab.
    - Supervising Professor: _____
    - Dates of rotation: _____
- List the objectives of the rotation project.

- Provide a summary of the experimental procedures, results and conclusions.

Memorandum

Date: _____

To: **DRS Doctoral Studies Committee**

From: _____
Student

_____
Proposed Supervisor

RE: ***Request to Approve Doctoral Supervisor***

I wish to inform the DRS - Doctoral Studies Committee that I have chosen

Dr. _____

to be my supervising Professor with his/her consent.

PI Funding Source: _____

Signature _____
Ph.D. Student

Signature _____
Supervising Professor

Approved by:

Signature _____
DRS-DSC Chair/GAR

Signature _____
Department of Neuroscience, Developmental and Regenerative Biology Chair

Signature _____
Colleges of Sciences Associate Dean for Graduate Studies

Form # 4 - Approval of Doctoral Supervisor

DRS Graduate Student Annual Progress Report

FIRST-Year Students

9/1/___ - 8/30/___

(Due August 1st)

Part I: To be completed by Ph.D. student:

Name _____

Courses completed this year:

Meetings attended this year:

Abstracts published this year:

Manuscripts published this year:

Append copies of the completed Rotation Reports for each rotation.

Memorandum

Date: _____

To: Select One Doctoral Studies Committee

_____
Supervising Professor

From: _____
Ph.D. Student

RE: ***Proposed members of Qualifying Committee***

_____
Member

_____
Member

_____
Member

_____
Member

☐ Approved

☐ Denied

Approved by:_____
DSC Chair

UTSA The Graduate School
The University of Texas at San Antonio

COMPLETION OF QUALIFYING EXAM

Completion of the Qualifying Exam for the Doctor of

_____

STUDENT INFORMATION

_____	_____	_____
Name	*Degree Program*	*myUTSA ID*

UTSA ACADEMIC RECORD:

Semester of entry into program (semester/year): _____

Total number of semester hours completed: _____ Cumulative GPA: _____

All required courses completed: ☐ Yes ☐ No

Passed Qualifying Exam: Written: _____ Oral: _____
Date *Date*

SIGNATURES OF QUALIFYING EXAM COMMITTEE MEMBERS

Exam Committee Chair, Signature	*Print Name*	*Date*
Exam Committee, Signature	*Print Name*	*Date*
Exam Committee, Signature	*Print Name*	*Date*
Exam Committee, Signature	*Print Name*	*Date*

SUPERVISING PROFESSOR

Supervising Professor, Signature	*Print Name*	*Date*

DEPARTMENT

Department Ph.D. Advisor, Signature	*Print Name*	*Date*
Chair, Doctoral Program Committee, Signature	*Print Name*	*Date*
Department Chair, Signature	*Print Name*	*Date*

COLLEGE

Associate Dean of the College, Signature	*Print Name*	*Date*

THE GRADUATE SCHOOL

Vice Provost and Dean of The Graduate School, Signature	*Date*

UTSA The Graduate School
The University of Texas at San Antonio

APPLICATION FOR GRADUATE FACULTY SPECIAL MEMBERSHIP

*THIS APPLICATION MUST BE FILLED OUT IN ITS ENTIRETY—PARTIAL APPLICATIONS WILL BE RETURNED TO DEPARTMENTS

I. APPLICANT

_____ _____
Full Name UTSA Department

_____
Requesting College

Status:
- ☐ Initial Appointment as a Special Member to the Graduate Faculty
- ☐ Reappointment as a Special Member to the Graduate Faculty Date of initial appointment: _____
- ☐

Teaching:
- ☐ Not Applicable
- ☐ Application to teach at the Master's level
- ☐ Application to teach at the Doctoral level and Master's level

Service:
- ☐ Not Applicable
- ☐ Application to serve on Master's committee(s)
- ☐ Application to serve on Doctoral and Master's committee(s)

Areas of Expertise: _____
_____
_____
_____

II. JUSTIFICATION

Explanation of the department need for this Special Membership in the UTSA Graduate Faculty:

_____
_____
_____
_____

III.CURRICULUM VITA

Please attach a copy of a current Curriculum Vita.

_____ _____
Current nonA UTSA Position/Title (if applicable) Current nonA UTSA Affiliation/Employer (if applicable)

(continued)

APPLICATION FOR GRADUATE FACULTY SPECIAL MEMBERSHIP

a) Highest Degree Earned:_____

b) When and Where Obtained:_____

c) Discipline or Area of Specialization:_____

d) Does the applicant hold a terminal degree in the field of this application? ☐ Yes ☐ No Explanation of the applicant's qualification for this special membership if the applicant does not currently possess a terminal degree in the field of this application:

_____

_____

_____

_____

e) Is there a potential conflict of interest regarding the applicant (e.g., a UTSA Ph.D. serving on a former classmate's committee or a postdoc paid with grant money who serves on a committee with another member who controls his or her funding and employment)? ☐ Yes ☐ No

Explanation of how the department will minimize or avoid the potential conflict of interest:

_____

_____

_____

_____

IV.SIGNATURES & RECOMMENDATIONS

_____ Number of Department Graduate Program Committee members

_____ Vote (for/against)

_____ Date of Vote

APPROVALS

_____	_____	_____	☐ Approve ☐ Disapprove
Graduate Program Chair, Signature	Print Name	*Date*	
_____	_____	_____	☐ Approve ☐ Disapprove
Department Chair, Signature	Print Name	*Date*	
_____	_____	_____	☐ Approve ☐ Disapprove
Associate Dean, Signature	Print Name	*Date*	

UTSA The Graduate School
The University of Texas at San Antonio

APPOINTMENT OF DOCTORAL DISSERTATION COMMITTEE

Please Choose One: ☐ New appointment of committee ☐ Change of committee member(s) **STUDENT INFORMATION**

STUDENT INFORMATION

Name _____ *my UTSA ID* _____

Department _____ *College* _____ *Date* _____

PROPOSED DISSERTATION COMMITTEE

			Graduate Faculty	If Applicable Membership Approved
Chair, Signature	*Print Name*	*Department*	☐ Yes ☐ No	☐ Yes ☐ No
Member, Signature	*Print Name*	*Department*	☐ Yes ☐ No	☐ Yes ☐ No
Member, Signature	*Print Name*	*Department*	☐ Yes ☐ No	☐ Yes ☐ No
Member, Signature	*Print Name*	*Department*	☐ Yes ☐ No	☐ Yes ☐ No
Outside Member, Signature	*Print Name*	*Department*	☐ Yes ☐ No	☐ Yes ☐ No
Supervising Professor, Signature	*Print Name*	*Department*	☐ Yes ☐ No	☐ Yes ☐ No

DOCTORAL PROGRAM COMMITTEE RECOMMENDATIONS

☐ We recommend that the Dissertation Committee be approved ☐ We do not recommend that the Dissertation Committee be approved

Department Ph.D. Advisor, Signature _____ *Print Name* _____ *Date* _____

Chair, Doctoral Program Committee, Signature _____ *Print Name* _____ *Date* _____

Department Chair, Signature _____ *Print Name* _____ *Date* _____

Associate Dean of the College, Signature _____ *Print Name* _____ *Date* _____

THE GRADUATE SCHOOL

Based on the College's recommendation, I hereby ☐ Approve ☐ Deny the request.

Vice Provost and Dean of The Graduate School, Signature _____ *Date* _____

UTSA The Graduate School
The University of Texas at San Antonio

APPLICATION FOR CANDIDACY FOR THE DOCTORAL DEGREE

STUDENT INFORMATION

Name _____ *myUTSA ID* _____

Anticipated Graduation Date _____ *Degree Sought* _____ *Program of Study* _____

Title of Dissertation (Subject to Change) _____

Signature _____ *Date* _____

☐ Level of English proficiency is satisfactory
☐ Scholarship to date is satisfactory
☐ Program of Study is satisfactory
☐ Qualifying exam administered

Supervising Professor for Dissertation, Signature	*Print Name*	*Date*
Dissertation Committee Member, Signature	*Print Name*	*Date*
Dissertation Committee Member, Signature	*Print Name*	*Date*
Dissertation Committee Member, Signature	*Print Name*	*Date*
Dissertation Committee Member, Signature	*Print Name*	*Date*
Outside Examiner, Signature	*Print Name*	*Date*
Supervising Professor, Signature	*Print Name*	*Date*

DOCTORAL PROGRAM COMMITTEE RECOMMENDATIONS

Based upon this student's performance to date and the attached Program of Study:

☐ We recommend that the student be advanced to candidacy ☐ We do not recommend advancement to candidacy at this time

Chair, Doctoral Program Committee, Signature	*Print Name*	*Date*
Department Chair, Signature	*Print Name*	*Date*
Associate D ean of the College, Signature	*Print Name*	*Date*

THE GRADUATE SCHOOL

Based on the College's recommendation, I hereby ☐ Approve ☐ Deny Candidacy.

Vice Provost and Dean of The Graduate School, Signature _____ *Date* _____

Annual Progress Report
Second-Fifth Year Students
9/1/___ - 8/30/___
(Due August 1st)

Part I: To be completed by Ph.D. student:

Name _____

Credit hours of Dissertation Research (7211-7216) completed this year: _____

Credit hours of Doctoral Dissertation (7311-7316) completed this year: _____

Other courses completed this year:

Courses taught this year:

Meetings attended this year:

Abstracts published this year:

Manuscripts published this year:

Part II

A: To be completed by 2nd-5th year students:

Attach a brief review of research progress over the past year (maximum two pages)

B: To be completed by dissertation supervisor:

Provide a brief evaluation of the student's performance over the past year and list any areas that need improvement. This evaluation is to be shared with the student.

Student _____

Dissertation Supervisor _____

DRS-DSC Chairman _____

Developmental and Regenerative Sciences Ph.D. Program
Evaluation by the Committee Members- Third Year Student

Student name:

Month/Year Started Program:

Date of Meeting:

Has written qualifying exam requirement been fulfilled?

Has oral qualifying exam requirement been fulfilled?

The student should complete the information above and distribute forms to faculty at his/her scheduled committee meeting.

Committee Member Name:

Overall Evaluation of research progress (*Please circle one*):

U ☐ Unsatisfactory
P ☐ Progress demonstrated, but not up to expectation for a student at this point in the program
S ☐ Satisfactory for this point in the program
E ☐ Excellent

Committee member: *Please comment on issues that particularly need improvement…*

Was the presentation thorough and understandable?

Has the student developed an appropriate command of the literature?

Have at least some experiments been initiated and/or finished?

Do individual experiments appear to be well planned with appropriate controls?

Does the student understand the limits of his/her experiments?

Is completion of the dissertation project feasible in the remaining period of time?

Are the student's responses to the questions clear and to the point?

Is the student applying personal initiative to the project?

Additional comments:

After each committee member has completed the evaluation, the student should collect the evaluations, review them with his/her supervising professor and then make two copies. One copy should be kept by the student and one copy should be given to the graduate secretary for inclusion in the student's file.

Form 12a Committee Member Signature_____

Developmental and Regenerative Sciences Ph.D.Program
Evaluation by the Committee Members - Fourth Year Student

Student Name:

Month/Year Started Program:

Date of Meeting:

Have both written & oral qualifying exam requirements been fulfilled? -_____

Written progress: **Presented a paper or poster at national meeting?** -_____

Contributed to writing a paper or review? -_____

Authored his/her own paper? -_____

The student should complete the information above and distribute forms to faculty at his/her scheduled committee meeting.

Committee Member Name: _____

Overall Evaluation of research progress (*Please circle one):*

- Unsatisfactory
- Progress demonstrated, but not up to expectation for a student at this point in the program.
- Satisfactory for this point in the program
- Excellent

Committee member: ***Please comment on issues that particularly need improvement…***

Was the presentation thorough and understandable?

Is the work sufficiently thorough, timely, and valid to form the basis for publications?

Has the student begun to develop a plan for completing the dissertation within 5 years?

Has the student thoroughly considered the meaning of his/her results?

Is the student's depth of knowledge and ability to deal with problems characteristic of an expert in his/her chosen field?

Additional comments:

After each committee member has completed the evaluation, the student should collect the evaluations, review them with his/her supervising professor and then make two copies. One copy should be kept by the student and one copy should be given to the graduate secretary for inclusion in the student's file.

_____

Committee Member Signature

Form 12b

Developmental and Regenerative Sciences Ph.D. Program

Evaluation by the Committee Members - Fifth (or beyond) Year Student

Student Name:

Month/Year Started Program:

Date of Meeting:

Have both written & oral qualifying exam requirements been fulfilled? -_____

Written progress: **Presented a paper or poster at national meeting?** -

Contributed to writing a paper or review? -

Authored his/her own paper? -

Target date for graduation: _____

The student should complete the information above and distribute forms to faculty at his/her scheduled committee meeting.

Committee Member Name: _____

Overall Evaluation of research progress (*Please circle one):*

- Unsatisfactory
- Progress demonstrated, but not up to expectation for a student at this point in the program.
- Satisfactory for this point in the program
- Excellent

Committee member: Please comment on issues that particularly need improvement…

1) Was the presentation thorough and understandable? Select one

2) Is the work sufficiently thorough, timely, and valid to form the basis for publication? Select one

3) Has the student formulated a plan for completing the dissertation within the current year? Select one

4) Has the student achieved expertise in depth of knowledge and ability to deal with problems characteristic of his/her chosen field? Select one

5) Is the student likely to graduate by the target date listed above? Select one

6) Additional comments:

After each committee member has completed the evaluation, the student should collect the evaluations, review them with his/her supervising professor and then make two copies. One copy should be kept by the student and one copy should be given to the graduate secretary for inclusion in the student's file.

_____

Committee Member Signature

UTSA The Graduate School
The University of Texas at San Antonio

DISSERTATION PROPOSAL APPROVAL FORM

STUDENT INFORMATION

_____ _____
Name *myUTSA ID*

_____ _____
Department *College*

_____
Title of Dissertation Proposal

DISSERTATION COMMITTEE MEMBERS

Chair, Signature	*Print Name*	*Department*
Member, Signature	*Print Name*	*Department*
Member, Signature	*Print Name*	*Department*
Member, Signature	*Print Name*	*Department*
Outside Member, Signature	*Print Name*	*Department*

DOCTORAL PROGRAM COMMITTEE ACTION

Doctoral Program Committee Review Date: _____

Doctoral Program Committee Chair, Signature	*Print Name*
Department Chair, Signature	*Print Name*
Associate Dean of the College, Signature	*Print Name*

THE GRADUATE SCHOOL

Based on the College's recommendation, I hereby ☐ Approve ☐ Disapprove Dissertation Proposal.

_____ _____
Vice Provost and Dean of The Graduate School, Signature *Date*

Attachments:

1] Dissertation Proposal

THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Final Program of Study for the Doctor of Philosophy

Student Name: Student ID:
Program of Study for Doctor of Philosophy MyUTSA ID:
Catalog: 2019 - 2021 Major: Developmental & Regenerative Sciences Concentration:
The following courses are required for the degree indicated below:

Core Courses (18 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
BIO 5123	Principles of Molecular Biology	3			
BIO 5133	Principles of Cell Biology	3			
BIO 5213	Principles of Chemical Biology	3			
BIO 7113	Supervised Teaching in Biology	3			
BIO 7143	Principles of Biological Scientific Writing	3			
BIO 7571	Experimental Techniques in Biology	1			
BIO 7572	Experimental Techniques in Biology	2			
				Total Credits:	**18**

Colloquia (10 credit hours minimum- a minimum of 1 credit hour each semester throughout tenure in the program):

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
				Total Credits:	**10**

Doctoral Research and Dissertation (42 credit hours required)

Discipline and Number	Course Title	Credit Hours		Grade	Use Towards Degree
BIO 7211	Doctoral Research	1			
BIO 7212	Doctoral Research	2			
BIO 7212	Doctoral Research	2			
BIO 7212	Doctoral Research	2			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
		Total Research Credits			
BIO 7311	Doctoral Dissertation	1			
BIO 7312	Doctoral Dissertation	2			
BIO 7312	Doctoral Dissertation	2			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
		Total Dissertation Credits			
				Total Credits:	**42**

Electives (9 credit hours required)

These can be selected from any 5000-7000 level courses offered in Biology or from any 5000-7000 level courses offered in other departments with the approval of the Cell and Molecular Doctoral Studies Committee

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
		3			
		3			
		3			
				Total Credits: 9	**9**

*Minimum of 85 hours of courses with B or above.
**Indicates course used towards MS degree (maximum of 30 hours, comparable to core and elective courses).

TOTAL DEGREE CREDITS: **79**

Revision date: 9/14/22

Upon completion of the above requirements, in addition to meeting the University-wide requirements for all Doctoral degrees, the above named student has satisfied all requirements for Doctor of _____Philosophy_____.

Supervising Professor's Signature _____ Date _____

Advisor of Record's Signature _____ Date _____

Signature _____ Date _____
Doctoral Program Committee Chairman

Signature_____ Date_____
Dean of College of Science

Signature _____ Date _____
Dean of Graduate School

NOTES:
Dissertation Committee: Chair: _____ Member: _____

Member: _____ Member: _____

Member: _____ Outside Member: _____

THE ORIGINAL COPY OF THIS FOR MUST BE FILED WITH THE REGISTRAR

---------- DO NOT WRITE BELOW THIS LINE ----------

Applied for degree	_____	Time Limit (8yr)	_____	Hours of A _____ x 4 _____	
Advanced to Candidacy	_____	Comprehensive Exam	_____	B _____ x 3 _____	
Admission Cleared	_____	Dissertation Filed	_____	C _____ x 2 _____	
				Total _____: GPA (3.0 min) _____	

Revision date: 9/14/22

THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Final Program of Study for the Doctor of Philosophy

Student Name: Student ID:
Program of Study for Doctor of Philosophy MyUTSA ID:
Catalog: 2021 - 2023 Major: Developmental & Regenerative Sciences Concentration:
The following courses are required for the degree indicated below:

Core Courses (19 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
BIO 5123	Principles of Molecular Biology	3			
BIO 5133	Principles of Cell Biology	3			
BIO 5213	Principles of Chemical Biology	3			
BIO 7113	Supervised Teaching in Biology	3			
BIO 7143	Principles of Biological Scientific Writing	3			
BIO 7572	Experimental Techniques in Biology	2			
BIO 7572	Experimental Techniques in Biology	2			
				Total Credits:	**19**

Colloquia (10 credit hours minimum- a minimum of 1 credit hour each semester throughout tenure in the program):

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
BIO 7041		1			
				Total Credits:	**10**

Doctoral Research and Dissertation (41 credit hours required)

Discipline and Number	Course Title	Credit Hours		Grade	Use Towards Degree
BIO 7211	Doctoral Research	1			
BIO 7212	Doctoral Research	2			
BIO 7212	Doctoral Research	2			
BIO 7212	Doctoral Research	2			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
BIO 7213	Doctoral Research	3			
		Total Research Credits			
BIO 7311	Doctoral Dissertation	1			
BIO 7312	Doctoral Dissertation	2			
BIO 7312	Doctoral Dissertation	2			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
BIO 7313	Doctoral Dissertation	3			
		Total Dissertation Credits			
				Total Credits:	**41**

Electives (9 credit hours required)

These can be selected from any 5000-7000 level courses offered in Biology or from any 5000-7000 level courses offered in other departments with the approval of the Cell and Molecular Doctoral Studies Committee

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
		3			
		3			
		3			
				Total Credits: 9	**9**

*Minimum of 79 hours of courses with B or above.
**Indicates course used towards MS degree (maximum of 30 hours, comparable to core and elective courses).

TOTAL DEGREE CREDITS: **79**

Revision date: 9/14/22

Upon completion of the above requirements, in addition to meeting the University-wide requirements for all Doctoral degrees, the above named student has satisfied all requirements for Doctor of _____Philosophy_____.

Supervising Professor's Signature _____ Date _____

Advisor of Record's Signature _____ Date _____

Signature _____ Date _____
Doctoral Program Committee Chairman

Signature_____ Date_____
Dean of College of Science

Signature _____ Date _____
Dean of Graduate School

NOTES:
Dissertation Committee: Chair: _____ Member: _____

Member: _____ Member: _____

Member: _____ Outside Member: _____

THE ORIGINAL COPY OF THIS FOR MUST BE FILED WITH THE REGISTRAR

---------- DO NOT WRITE BELOW THIS LINE ----------

Applied for degree	_____	Time Limit (8yr)	_____	Hours of A _____ x 4 _____	
Advanced to Candidacy	_____	Comprehensive Exam	_____	B _____ x 3 _____	
Admission Cleared	_____	Dissertation Filed	_____	C _____ x 2 _____	
				Total _____: GPA (3.0 min) _____	

Revision date: 9/14/22

THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Final Program of Study for the Doctor of Philosophy

Student Name: Student ID:

Program of Study for Doctor of Philosophy MyUTSA ID:

Catalog: 2023 - 2025 Major: Developmental & Regenerative Sciences

The following courses are required for the degree indicated below:

Core Courses (20 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 5001	Ethical Conduct in Research	1			
NDRB 5123	Principles of Molecular Biology	3			
NDRB 5133	Principles of Cell Biology	3			
NDRB 5223	Principles of Developmental Biology	3			
NDRB 7113	Prin. of Biological Scientific Teaching	3			
NDRB 7143	Principles of Biological Scientific Writing	3			
NDRB 7572	Experimental Techniques in Biology	2			
NDRB 7572	Experimental Techniques in Biology	2			
				Total Credits:	**20**

Colloquia (10 credit hours required - a minimum of 1 credit hour each semester throughout tenure in the program):

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 7041	Principles of Cell Biology QE	1			
NDRB 7041	Principles of Molecular Biology QE	1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
				Total Credits:	**10**

Doctoral Research and Dissertation (43 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 7211	Doctoral Research	1			
NDRB 7212	Doctoral Research	2			
NDRB 7212	Doctoral Research	2			
NDRB 7213	Doctoral Research	2			
NDRB 7213	Doctoral Research	3			
NDRB 7214	Doctoral Research	4			
NDRB 7215	Doctoral Research	5			
NDRB 7216	Doctoral Research	6			
		Total Research Credits			
NDRB 7311	Doctoral Dissertation	1			
NDRB 7312	Doctoral Dissertation	2			
NDRB 7312	Doctoral Dissertation	2			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7314	Doctoral Dissertation	3			
NDRB 7315	Doctoral Dissertation	3			
NDRB 7316	Doctoral Dissertation	3			
		Total Dissertation Credits			
				Total Credits:	**43**

Electives (6 credit hours required)

These can be selected from any 5000-7000 level courses offered in Biology or from any 5000-7000 level courses offered in other departments with the approval of the Cell and Molecular Doctoral Studies Committee

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
		3			
		3			
				Total Credits:	**6**

*Minimum of 79 hours of courses with B or above.

**Indicates course used towards MS degree (maximum of 30 hours, comparable to core and elective courses).

TOTAL DEGREE CREDITS: **79**

Revision date: 6/13/23

Upon completion of the above requirements, in addition to meeting the University-wide requirements for all Doctoral degrees, the above named student has satisfied all requirements for Doctor of _____Philosophy_____.

Supervising Professor's Signature _____ Date _____

Advisor of Record's Signature _____ Date _____

Signature _____ Date _____
Doctoral Program Committee Chairman

Signature_____ Date_____
Dean of College of Science

Signature _____ Date _____
Dean of Graduate School

NOTES:
Dissertation Committee: Chair: _____ Member: _____

Member: _____ Member: _____

Member: _____Outside Member: _____

THE ORIGINAL COPY OF THIS FOR MUST BE FILED WITH THE REGISTRAR

---------- DO NOT WRITE BELOW THIS LINE ----------

Applied for degree	_____	Time Limit (8yr)	_____	Hours of A _____	4 _____
Advanced to Candidacy	_____	Comprehensive Exam	_____	B _____	x 3 _____
Admission Cleared	_____	Dissertation Filed	_____	C _____	x 2 _____
				Total _____	: GPA (3.0 min) _____

THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Final Program of Study for the Doctor of Philosophy

Student Name: Student ID:

Program of Study for Doctor of Philosophy MyUTSA ID:

Catalog: 2025 - 2027 Major: Developmental & Regenerative Sciences

The following courses are required for the degree indicated below:

Core Courses (20 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 5001	Ethical Conduct in Research	1			
NDRB 5123	Principles of Molecular Biology	3			
NDRB 5133	Principles of Cell Biology	3			
NDRB 5223	Principles of Developmental Biology	3			
NDRB 7113	Prin. of Biological Scientific Teaching	3			
NDRB 7143	Principles of Biological Scientific Writing	3			
NDRB 7572	Experimental Techniques in Biology	2			
NDRB 7572	Experimental Techniques in Biology	2			
				Total Credits:	**20**

Colloquia (10 credit hours required - a minimum of 1 credit hour each semester throughout tenure in the program):

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 7041	Principles of Cell Biology QE	1			
NDRB 7041	Principles of Molecular Biology QE	1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
NDRB 7041		1			
				Total Credits:	**10**

Doctoral Research and Dissertation (43 credit hours required)

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
NDRB 7211	Doctoral Research	1			
NDRB 7212	Doctoral Research	2			
NDRB 7212	Doctoral Research	2			
NDRB 7213	Doctoral Research	2			
NDRB 7213	Doctoral Research	3			
NDRB 7214	Doctoral Research	4			
NDRB 7215	Doctoral Research	5			
NDRB 7216	Doctoral Research	6			
		Total Research Credits			
NDRB 7311	Doctoral Dissertation	1			
NDRB 7312	Doctoral Dissertation	2			
NDRB 7312	Doctoral Dissertation	2			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7313	Doctoral Dissertation	3			
NDRB 7314	Doctoral Dissertation	3			
NDRB 7315	Doctoral Dissertation	3			
NDRB 7316	Doctoral Dissertation	3			
		Total Dissertation Credits			
				Total Credits:	**43**

Electives (6 credit hours required)

These can be selected from any 5000-7000 level courses offered in Biology or from any 5000-7000 level courses offered in other departments with the approval of the Cell and Molecular Doctoral Studies Committee

Discipline and Number	Course Title	Credit Hours	Semester Taken	Grade	Use Towards Degree
		3			
		3			
				Total Credits:	**6**

*Minimum of 79 hours of courses with B or above.

**Indicates course used towards MS degree (maximum of 30 hours, comparable to core and elective courses).

TOTAL DEGREE CREDITS: **79**

Revision date: 6/13/23

Upon completion of the above requirements, in addition to meeting the University-wide requirements for all Doctoral degrees, the above named student has satisfied all requirements for Doctor of _____Philosophy_____.

Supervising Professor's Signature _____ Date _____

Advisor of Record's Signature _____ Date _____

Signature _____ Date _____
Doctoral Program Committee Chairman

Signature_____ Date_____
Dean of College of Science

Signature _____ Date _____
Dean of Graduate School

NOTES:
Dissertation Committee: Chair: _____ Member: _____

Member: _____ Member: _____

Member: _____Outside Member: _____

THE ORIGINAL COPY OF THIS FOR MUST BE FILED WITH THE REGISTRAR

---------- DO NOT WRITE BELOW THIS LINE ----------

Applied for degree	_____	Time Limit (8yr)	_____	Hours of A _____	4 _____
Advanced to Candidacy	_____	Comprehensive Exam	_____	B _____	x 3 _____
Admission Cleared	_____	Dissertation Filed	_____	C _____	x 2 _____
				Total _____	: GPA (3.0 min) _____

UTSA The Graduate School
The University of Texas at San Antonio

CERTIFICATION OF COMPLETION OF DISSERTATION REQUIREMENTS FOR A DOCTORAL DEGREE

To Registrar: This is to certify that the student named below has completed all requirements for the dissertation associated with the degree indicated, and that the dissertation has been filed with this office.

STUDENT INFORMATION

_____ _____

Name *myUTSA ID*

_____

Dissertation Title (as it is to be listed on the student's official records)

Semester hours of credit to be awarded for dissertation: _____

Grade to be awarded for dissertation credit: _____

Date dissertation approved by committee: _____

Degree to which dissertation applies (Ph.D., Ed.D, area and concentration): _____

DISSERTATION COMMITTEE MEMBERS

Chair, Signature	*Print Name*	*Department*
Member, Signature	*Print Name*	*Department*
Member, Signature	*Print Name*	*Department*
Member, Signature	*Print Name*	*Department*
Outside Member, Signature	*Print Name*	*Department*

DEPARTMENT

_____ _____ _____

Department Chair, Signature *Print Name* *Date*

COLLEGE

_____ _____ _____

Associate Dean of the College, Signature *Print Name* *Date*

THE GRADUATE SCHOOL

Based on the College's recommendation, I hereby ☐ Approve ☐ Deny the request.

_____ _____

Vice Provost and Dean of The Graduate School, Signature *Date*

OFFICE OF THE REGISTRAR

A] Credit and grade entered on student's record? _____ B] Dissertation title entered on student's record? _____

C] Graduation check updated? _____ D] Student notified? _____ E] Notes _____

Form 16 - Individual Development Plan - Instructions

This form serves as a guide to fashion an annual Individual Development Plan (IDP) for you as a DRS PhD student, to assess your professional goals, strengths, weaknesses, values, and to make plans for your future career. The DRS PhD program expects you to complete this form at the beginning of your second academic year (after entering your doctoral studies lab), in collaboration with your PI, and to update it annually thereafter. This IDP is not meant to track student progress towards specific degree requirements, but instead, to assist you in developing your career plan and to position you to successfully achieve those goals.

There are numerous self-assessment focused IDPs available on the internet to supplement this document:

- University of Michigan: http://faculty.medicine.umich.edu/sites/default/files/downloads/individual_development_plan_0.pdf
- American Association for the Advancement of Science (AAAS): http://myidp.sciencecareers.org/
- Stanford University: https://biosciences.stanford.edu/current/idp/forms.html

An Individual Development Plan helps with self-assessment, planning, and communication:

- An IDP can help you communicate your professional development and career planning needs and intentions to others including your advisor, which can lead to helpful advice and resources.
- You can use the IDP to make sure you and your advisor's expectations are clearly outlined and in agreement so that there are no big surprises, particularly at the end of your training.
- The current job market is challenging and research has shown that individuals who perform structured career planning achieve greater career success and satisfaction.
- Some of you, especially those early in your studies, may not yet have a firm understanding of where you hope to take your career. The IDP can also help you think about your strengths and weaknesses as you evolve towards career planning.
- The IDP is meant as a living document, to be modified as you move through the program and solidify your goals and plan.
- Take advantage of this opportunity to reflect on your success and challenges from the previous year and anticipate any successes and challenges in the coming year(s).
- Use the questions below as a starting place for thinking; do not feel you need to respond to all, if some are less relevant for you, and feel free to also consider other aspects not included.

We hope that you find this opportunity for reflection helpful and welcome feedback on the process.

Form 16 - Individual Development Plan for DRS PhD Students

Name: **Date:**

Year of Matriculation: **Current Year in the DRS PhD program:**

PI:

Short-term scientific/research goals and objectives

For 1st year students:

1. Do you know which area of your field you want to concentrate in?

2. Do you have a specific public health problem that is of primary interest to you?

3. Do you have experience with the methods and approaches used in your planned area of work?

4. What are the main goals you would like to accomplish this year?

For 2nd year students and beyond, and please respond to these by in part referring back to your previous year's goals, plans, and challenges:

5. Do you have a clear/defined plan for your research/dissertation work? Outline it here.

6. How confident are you in your ability to complete it by the end of Year 4 or 5?

7. Describe any unusual or unanticipated challenges you faced in the past year in trying to reach the goals you set out previously.

8. What actions have you taken to meet those challenges?

9. Do you anticipate any challenges in the next year and what can be done to help reduce barriers in the coming year?

10. How can your advisor help you?

Long-term goals

11. What are your long-term goals? (e.g., what activities do you want to be doing on a daily basis 5-10 years after graduation? What career responsibilities do you want to have?).

    a. What professional or other factors inform these goals?

    b. For each goal, identify 1-2 shorter-term objectives that may help you achieve that goal.

12. What guidance would help you with your development and exploration of career options?

13. Are there factors that you are concerned may negatively affect your progress? What help can your advisor or other faculty/staff provide?

14. List some of your involvements in the following activities in the past year

Category	**Activities**
Academic coursework/training	
Your own research	
Research led by others (e.g., RA jobs)	
Teaching/Mentoring	
Professional development	
Conferences	
Service/outreach	
Wellness	

14a. Describe and explain your level of satisfaction with your research progress in the last year.

14b. Describe and explain your satisfaction with other aspects of your career development in the last year.

15. List the approximate percentage of time spent on each activity in the past year, and what you expect that to look like in the upcoming year. Note that these percentages are expected to change substantially throughout your academic career.

Category	% time in past year	% time in next year
Academic coursework/training		
Your own research		
Research led by others (e.g., RA jobs)		
Teaching/Mentoring		
Professional development		
Conferences		
Service/outreach		
Wellness		

16. In the following table mark the 5 or so areas in which you feel you made considerable progress in the past year, as well as 5 or so that you would like to focus on in the next year. Discuss with your advisor(s) ideas for how to identify activities in the focus areas.

Area	Progress in past year	Focus area for next year
Research skills and scientific thinking		
Critical reading of scientific literature		
Study design		
Data analysis		
Interpretation of results		
Translation of research to practice		
Other (specify):		
Writing		
For a scientific publication		
For a research proposal		
For a lay audience, the media, or practitioners		
Grammar/structure		
Oral communications		
To a specialized scientific audience		
To a lay audience, the media, or practitioners		
In a classroom		
One on one		
English fluency		
Poster presentation		
Elevator Pitch (3min)		

Leadership/Personnel management		
Delegating, providing instruction		
Providing constructive feedback		
Leading and motivating others		
Advocating for change		
Professionalism/interpersonal		
Identifying and seeking advice		
Upholding commitments/deadlines		
Maintaining positive relationships		
Approaching difficult conversations		
Networking		
Establishing a professional identity		
Project management		
Prioritizing work		
Planning projects		
Budgeting projects		
Breaking down complex tasks		
Time management		
Managing data, finances, and other resources		
Bringing a project to completion		
Teaching		
Course planning		
Lecture delivery		
Other (specify)		

17. What are specific actions you will take in the next year to reach some of your goals in those focus areas?

The remaining sections have a series of questions you may find helpful to reflect on and discuss with your advisor as you see fit.

18. Mentoring

18a. Who are the advisors/mentors you interact with now?

18b. Are you getting sufficient mentoring from them?

18c. Name two things your mentor could do better

18d. Name two things you as a mentee could do better

18e. Do you initiate meetings?

18f. Would it be helpful to meet more or less?

18g. Are there other faculty it would be helpful to make connections with?

18h. In reference to your career goals, what resources can your advisor help provide or help you find?

19. Other considerations and factors

19a. What sorts of environments or relationships do you find most helpful for your own success?

19b. Your success as a student and in the longer-term is linked to your wellness. What are you doing to maintain your wellness? Do you want to talk to someone about wellness?

19c. Are there any new collaborations or connections you would like to make in the next year?

19d. What further research activity, other training, or professional development is needed before you can start a career search?

5. TIMELINE

What is the current timeline for completing your dissertation?

XXVII. DRS FACULTY RESEARCH INTERESTS

CORE FACULTY

Alfonso Apicella, PhD, Associate Professor
alfonso.apicella@utsa.edu

Research in Dr. Apicella's lab is centered on the neural basis of perception and how discriminating between auditory signals of different affective values is critical for survival and ensures the success of social interactions. Dr. Apicella's lab seeks to understand exactly how cortical microcircuits process sensory information to drive behavior. To assess how populations of neurons concur to encode information, generate perceptions, and execute behavioral decisions requires working at both the cellular and system levels. Toward this goal, by turning neurons "ON" and "OFF" using optogenetic and pharmacogenetic approaches, the lab can monitor and then manipulate specific subsets of neurons in awake-behaving mice. This approach will allow the lab to quantitatively determine how specific subsets of neurons con-tribute to sensory processing and behavior. By complementing *in vivo* work with synaptic connectivity and network dynamics analysis *in vitro*, they will achieve a more complete understanding of how neural circuits in our brain support sensation, action, and cognition.

Website: https://www.utsa.edu/sciences/labs/AlfonsoApicella/

Lacy Barton, PhD, Assistant Professor
lacy.barton@utsa.edu

Research in Dr. Barton's lab is centered on fertility and health of the next generation, which depend on proper development and protection of the germ line. The Barton Lab's research mission is to understand factors that support reproductive development, with a special focus on embryonic germ cells. The lab investigates pre-gonadal germ cell development and how it is coordinated by surrounding tissues using *Drosophila,* cell culture, and mouse model systems. To gain mechanistic insights, the Barton Lab uses a variety of experimental approaches including classic and cutting-edge genetic manipulations, whole animal fixed and live imaging, transcriptomics, as well as *ex vivo* migration and survival assays. The Barton Lab strives to conduct this research in an inclusive and welcoming environment that prioritizes career development.

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/LacyBarton.html

Aritra Bhattacherjee, PhD, Assistant Professor
aritra.bhattacherjee@utsa.edu

We study transcriptional and epigenetic bases of susceptibility to psychiatric and addictive disorders. The lab is broadly interested in understanding the molecular underpinnings of maladaptive changes in behavior at single neuron resolution. In the animal world, every behavior is regulated by organized circuits of many different types of neurons. Long-term changes in behavior require transcriptional and epigenetic adaptations in key neuronal populations of the regulatory circuits. But these molecular

adaptations have been difficult to track owing to the profound cellular heterogeneity amongst neurons, even within the same brain regions. We use single cell omics to determine the identity and molecular changes in key neuronal subtypes associated with specific behavioral abnormalities- use transgenic mouse lines to precisely map the circuits of those neurons and manipulate (and record) the activity of the circuit to mitigate the behavioral dysfunction. These multi-pronged, cutting-edge approaches have finally enabled us to investigate long-standing questions of high priority: Why are some individuals more susceptible to certain psychiatric disorders or drug addiction than others? Does adverse experience or exposure, as early as in mother's womb, shape such susceptibilities? Are there biomarkers that can pre-inform emergence of mental health crises? Can we selectively target specific neurons to treat a mental disorder or drug relapse without impacting other brain functions?

Website: https://sciences.utsa.edu/faculty/profiles/bhattacherjee-aritra.html

Eric Brey, PhD, Professor
eric.brey@utsa.edu

Research in Dr. Brey's lab is centered on the fields of tissue engineering, regenerative medicine and biomaterials. Specifically, we are investigating new biomaterial approaches for engineering vascularized tissues. We are also investigating novel imaging methods for analysis and monitoring of engineered tissues. Our research has received support from the National Science Foundation, the National Institutes of Health, the Department of Defense, the Veterans Administration and industry collaborators. In addition to research, I have a significant interest in engineering education, specifically in the area of undergraduate research and its influence on education and career trajectories.

Website: https://ceid.utsa.edu/biomedical/team/eric-brey/

Anthony Burgos-Robles, PhD, Assistant Professor
anthony.burgos-robles@utsa.edu

Research in Dr. Burgos's lab is centered on the development of mouse models to investigate the neural correlates of psychiatric diseases associated to fear, stress, and emotional trauma. Particular interest is given to identify novel neurophysiological mechanisms in limbic regions of the brain, including the hippocampus, amygdala, nucleus accumbens, and medial prefrontal cortex. Methodologies include in vivo neuronal recordings, viral-mediated transduction, optogenetic and chemogenetic approaches for neuronal manipulations, immunohisto-chemistry, and fluorescence imaging. Current main projects focus on the assessment of: 1) Dynamic processes for the differentiation of threat and safety in the environment; 2) Regulation of behavioral flexibility and avoidance during imminent threat; 3) Mechanisms promoting and controlling social phobia; 4) The impact of psychological stressors to promote mental disease states. New lines of research will also explore individual differences in stress impact and behavior.

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/AnthonyBurgosRobles.html

Erika Tatiana Camacho, PhD, Professor
erika.camacho@utsa.edu

Research in Dr. Camacho's laboratory focuses on mathematically modeling and investigating both the healthy and diseased retinas at the cellular and molecular levels. Her work and interest centers on 1) the metabolic needs of cones in the absence of rods, before, during and after degeneration and retinal remodeling, 2) aerobic glycolysis and oxidative stress pathways in photoreceptors and the retinal pigment epithelium, 3) metabolic pathways implicated in photoreceptor degeneration, and 4) immune response in retinal degenerative diseases. In her earliest publication in this area, her work predicted the existence of a necessary mechanism experimentally discovered a year later – the rod-derived cone viability factor (RdCVF) and proposed equations describing the dynamics of the rod and cone outer segments and the RPE cells.

Website: https://sciences.utsa.edu/labs/erika-camacho/

Astrid Cardona, PhD, Professor
astrid.cardona@utsa.edu

Research in Dr. Cardona's lab is centered on understanding the mechanisms of tissue damage in Multiple Sclerosis and Diabetic retinopathy. 1) Clarifying the protective and detrimental roles of the innate immune system, 2) Determining the origin of tissues injury and factors that account for disease progression and 3) Testing neuroprotective therapies via modulation of innate immune cell function.

Website: https://www.utsa.edu/sciences/molecular-microbiology-immunology/faculty/AstridCardona.html

Melanie Carless, PhD, Associate Professor
melanie.carless@utsa.edu

Research in Dr. Carless's lab is centered on identifying genetic and epigenetic factors associated with complex diseases, and in understanding how these might contribute to disease risk and be leveraged as potential novel therapies. She is particularly interested in how epigenetic mechanisms such as DNA methylation, DNA hydroxymethylation, and microRNAs contribute to gene regulation, and consequently risk for metabolic disorders (e.g., diabetes and obesity) and neurological and psychiatric diseases (e.g., Alzheimer's disease, schizophrenia, bipolar disorder). To accomplish this, her laboratory employs a range of approaches, including cohort-based studies, post-mortem tissue analysis, animal models and cell-based systems, as well as cutting-edge technologies, including stem cell and organoid applications, next-generation sequencing and epigenetic editing using the CRISPR/dCas9 system.

Website: https://www.carlesslab.org/

Damayanti Chakraborty, PhD, Assistant Professor
damayanti.chakraborty@utsa.edu

Chakraborty lab is interested in epigenetics of cellular plasticity and heterogeneity in the context of development and diseases. We are particularly interested in the transient organ called the placenta, which connects the mother to the fetus. It arises from a pool of stem cells which undergoes spatio-temporal differentiation to a variety of lineages which perform specialized functions to sustain pregnancy and development of the baby. Interestingly, cells of the placenta do not contribute to cellular lineages of the embryo. However, the developmental cues originating from the placenta shape the fetal epigenome and have consequences to adult-onset diseases. The bigger picture is to understand what those cues are and how do they contribute to disease conditions pertaining to developmental defects in various organ systems including the nervous system which leads to conditions like Autism Spectrum Disorders, Intellectual disabilities, postnatally and in adult life.

Website: https://sciences.utsa.edu/faculty/profiles/chakraborty-damayanti.html

Thomas Forsthuber, MD, PhD, Professor
thomas.forsthuber@utsa.edu

Research in Dr. Forsthuber's lab is centered on the manner in which the erroneous activation of the immune system can lead to autoimmune diseases such as multiple sclerosis (MS). Dr. Forsthuber's lab pursues several lines of investigation to understand how the immune system, in particular T cells, contribute to autoimmune diseases and how to modulate T cell immunity for therapeutic purposes in humans. Specifically, he studies immune mechanisms in the central nervous system in experimental autoimmune encephalomyelitis (EAE), the animal model for MS. Moreover, Dr. Forsthuber studies human autoimmune heart disease in a model called experimental autoimmune myocarditis. His research is aimed toward direct applicability to human diseases, for example by developing novel drugs for autoimmune diseases and biomarkers to monitor the efficacy of treatments for autoimmune diseases.

Website: https://www.utsa.edu/sciences/molecular-microbiology-immunology/faculty/ThomasForsthuber.html

T. Chris Gamblin, PhD, Professor
truman.gamblin@utsa.edu

Research in Dr. Gamblin's lab is centered on the mechanisms that lead to the aggregation of the microtubule-associated protein tau. Tau is a protein that is important in neuronal function, but can misfold and aggregate into pathological structures that accumulate in Alzheimer's disease and related disorders. Our approach is to combine small biological molecules with variants of tau protein to induce the aggregation of a wide array of filamentous structures in vitro. Filament structures are characterized using biochemical techniques including cryoEM. We use these approaches to better understand the effects of modifications of tau on its aggregation; to identify potential therapeutics to slow, stop, or reverse tau aggregation; and to identify other biological factors that may influence tau aggregation in disease.

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/ChrisGamblin.html

Maria A. Gonzalez Porras, PhD, Professor
maria.gonzalezporras@utsa.edu

My biomedical engineering and physiology research expertise focuses on integrating the areas of physiology, stem cell biology and bioengineering to develop cell targeted therapeutic systems for adipose tissue cells. My research interests lie in using multidisciplinary strategies to gain a better understanding of the cellular and microenvironmental conditions fundamental to the pathophysiology and therapy of adipose tissue dysfunctions in cancer and obesity.

Website: https://gpfatlab.com/

Teja Guda, PhD, Associate Professor
teja.guda@utsa.edu

Research in Dr. Guda's lab is centered on matrix mechanics to drive biomaterials translation for tissue engineering and regenerative medicine applications. Current interests are focused on developing regenerative strategies for bone and skeletal muscle tissue engineering. We are specifically interested in the 3D architectures of porous materials, the use of biophysical stimulation using bioreactors and the use of micro computed tomography as a modeling tool. Specific applications being developed in the lab include hydroxyapatite ceramics for bone, vascularization in hydrogels for bone and skeletal muscle, composite structures for laryngeal reconstruction, bioreactors developed for ligament and dental restorative research and organoid evaluation for salivary gland and pediatric cancer drug discovery.

Website: https://ceid.utsa.edu/biomedical/team/teja-guda-ph-d/

Brian P. Hermann, PhD, Professor
brian.hermann@utsa.edu

Research in Dr. Hermann's laboratory is centered on mammalian male germline development and maintenance. The lab has a particular focus on the regulation of specification and fate of spermatogonial stem cells (SSCs), the stem cells responsible for sperm production in the mammalian testis which are essential for male fertility. Ongoing studies in the lab are focused on 1) how the pool of SSCs forms during testicular development; 2) understanding how SSC fate decisions are regulated (self-renewal vs. differentiation); 3) use of SSCs to treat male infertility, 4) development of novel male contraceptives, and 5) leveraging the male germline for transgenesis in nonhuman primates. The lab's work has potential implications for basic stem cell biology, reproduction, as well as translational significance for treatment and prevention of male infertility.

Website: https://www.utsa.edu/sciences/labs/BrianHermann/

Jenny Hsieh, PhD. Professor
jenny.hsieh@utsa.edu

Research in Dr. Hsieh's laboratory is centered on understanding the mechanisms underlying neural development and adult neurogenesis. Working primarily in mouse models and *in vitro* systems such as patient-derived induced pluripotent stem cells, the Hsieh lab studies the function of genes involved in epilepsy disorders. We study mesial temporal lobe epilepsy, the most common intractable epilepsy in adults, the genetic epilepsies, a group of rare neurodevelop-mental disorders characterized by early onset seizures. We also collaborate with labs to study the role of genes that contribute to hyperexcitability in early- and late-onset degenerative diseases like Alzheimer's disease. The goal of the Hsieh lab is to find ways to target abnormal functions of genes in developmental and degenerative conditions.

Website: https://hsiehlab.org

ChiungYu Hung, PhD, Associate Professor
chiungyu.hung@utsa.edu

Research in Dr. Hung's lab is centered on host-pathogen interactions, specifically host immunity to fungal infections with *Coccidioides* species. These fungi are known to live in the soil in the southwestern United States and parts of Mexico and Central and South America. An estimated 150,000 people in the United States become infected with *Coccidioides* annually. VF is typically transmitted by inhalation of airborne spores of *Coccidioides* spp. The most common clinical presentation of coccidioidomycosis is pulmonary disease while dissemination of infection to skin, bone, and central nerve system can occur. Patients who present with severe acute pneumonia, chronic pulmonary VF, and disseminated coccidioidomycosis require antifungal therapy, which is potentially life-long with currently available drugs. There is an urgent and unmet need to develop better chemotherapies and a vaccine against *Coccidioides* infection.

Website: https://www.utsa.edu/sciences/molecular-microbiology-immunology/faculty/ChiungYuHung.html

Hyoung-gon Lee, PhD, Associate Professor
hyoung-gon.lee@utsa.edu

Research in Dr. Lee's lab is centered on the pathogenesis of Alzheimer's disease and peripheral neuropathy. Specific interests include the 1) pathological role and molecular mechanism of cell cycle re-entry in Alzheimer's disease and peripheral neuropathy, 2) molecular mechanism of dysregulation of neuronal insulin signaling and its pathological role in Alzheimer's disease, 3) development of novel therapeutic approaches for Alzheimer's disease and peripheral neuropathy. His lab uses various advanced molecular and biochemical experimental tools such as immunohistochemistry, immunoblot, qRT-PCR, RNAseq, and live cell imaging. Experimental systems include transgenic mouse models, somatic transgenesis using AAV vectors, cell culture, and post-mortem human tissues.

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/HyounggonLee.html

Annie Lin, PhD, Associate Professor
annie.lin@utsa.edu

Research in Dr. Lin's lab is centered on cell fate regulation in human health and diseases with focus on the intersection of stem cells and cancer biology. The ongoing projects seek to understand what extent stem and progenitor cells become cancer-initiating cells. Thus, the lab's work has potential implications for basic stem cell and cancer biology as well as translational significance for treatment and prevention of diseases.

Website: https://www.utsa.edu/sciences/integrative-biology/faculty/AnnieLin.html

Lindsey Macpherson, PhD, Assistant Professor
lindsey.macpherson@utsa.edu

Research in Dr. Macpherson's lab is centered on investigating the connectivity and plasticity of peripheral sensory circuits, especially for taste and oral/facial somatosensation. The lab primarily uses mouse models to genetically manipulate, label, trace, and monitor the activity of taste receptor cells and peripheral sensory neurons in vivo. Specific techniques include in vivo calcium imaging, intravital 2-photon microscopy, GFP Reconstitution Across Synaptic Partners (GRASP), CRISPR knock-in/knock-out, immuno/in-situ fluorescence, RNA-seq, and behavioral analysis. Research questions include: 1) Coding: How is chemosensory/somatosensory information encoded by peripheral sensory neurons? 2) Connectivity: What are the synaptic partners of specific taste receptor cell types? 3) Dynamics: How do gustatory fibers and taste synapses change during taste cell turnover? 4) Plasticity: How do drugs, age, disease, or diet affect peripheral sensory neuron connectivity and function?

Website: https://www.macphersonlab.org

John McCarrey, PhD, Professor
john.mccarrey@utsa.edu

Research in Dr. McCarrey's lab is centered on the development, differentiation, and epigenetic regulation of mammalian germ cells and stem cells, and on the role of the epigenome as a mediator of environmental effects. Experimental systems include mice, nonhuman primates and humans. Methodologies include bulk and single-cell transcriptomic and epigenomic profiling, cell sorting, cell culture, transgenesis, immunocytochemistry and immunohisto-chemistry. Specific interests include 1) regulation of gene expression and epigenetic programming in germ cells and stem cells, 2) specification of spermatogonial stem cell fate, 3) maintenance of enhanced genetic integrity in germline and pluripotent cells, and 4) the potential for adverse lifestyles (e.g. poor diet, lack of exercise) or environmental exposures (e.g. disruptive chemicals) to induce disease-causing epimutations in a male's sperm that are transmitted to his offspring.

Website: https://www.utsa.edu/sciences/labs/johnmccarrey/

Stanton McHardy, PhD, Associate Professor
stanton.mchardy@utsa.edu

Research in Dr. McHardy's lab is centered on medicinal chemistry research in the design, synthesis and development of small molecule compounds across multiple therapeutic disease areas. Currently funded programs are focused on the development of novel small molecules for breast, ovarian, and brain cancers, metabolic diseases, Schistosomiasis, biofilm inhibition, and dengue virus. The lab also focuses on the development of new synthetic methodologies for the synthesis of drug-like compounds and natural products.

Website: https://www.utsa.edu/sciences/chemistry/faculty/StantonMcHardy.html

Christopher Navara, PhD, Professor of Research
christopher.navara@utsa.edu

Research in Dr. Navara's lab is centered on the cellular biology of pluripotent stem cells. The repeated clinical failures of therapies for Alzheimer's and Parkinson's disease indicate the need for additional preclinical models of these complex conditions. Parkinson's disease is a progressive degenerative disease resulting in the loss of nerve cells in the brain. Samples from human patients are difficult to obtain and animal models may not faithfully mimic the disease. Using human pluripotent stem cells, Dr. Navara's research group makes human nerve cells from Parkinson's patients, tests their biology to better understand the disease, and tests new potential therapies that may slow or stop its progression.

Website: https://www.utsa.edu/bhc/core/stem-cell-core/

George Perry, PhD, Professor
george.perry@utsa.edu

Research in Dr. Perry's lab is centered on Alzheimer's disease (AD) which is the sixth leading cause of death and affects one in every 10 individuals aged 65 or older in the United States. In AD, we demonstrated free radicals increase that can cripple and kill cells within the brain causing dementia. Dr. Perry's studies show how cells in the brain respond to the presence of these free radicals. Looking at how the cells react is like looking through a window into the disease. Dr. Perry is currently working to determine the mechanism underlying the increased amount of free radicals and what leads to the cellular damage they cause. Understanding how the brain's cells respond to free radicals is critical to interrupting the progress of the disease and lead to new treatments

Website: https://www.utsa.edu/sciences/labs/GeorgePerry/

Christopher Rathbone, PhD, Assistant Professor
chris.rathbone@utsa.edu

Research in Dr. Rathbone's lab is centered on developments in tissue engineering and regenerative medicine that have the potential to dramatically improve outcomes for a wide variety of diseases and injuries. In particular, stem cell-based therapies have been successful in this realm, however, the development of a sufficient vascular supply limits their full potential. Broadly speaking, I am interested in improving the regeneration of tissue by utilizing tissue-engineering based strategies whereby vascular structures and stem cells are used in conjunction with scaffolds and growth factors. Previous experience working in government and industry research provided a valuable perspective on the need to make scientific advancements a clinical reality.

Website: https://ceid.utsa.edu/biomedical/team/christopher-r-rathbone-ph-d/

Fidel Santamaria, PhD, Professor
fidel.santamaria@utsa.edu

Research in Dr. Santamaria's lab is centered on the hundreds of neuron types in the brain which each have unique shape and complexity. Specialization of shape suggests that neuronal geometry is critical to the function of each cell circuit. Dr. Santamaria combines theory, computation and experiments to study how structure affects integration of electrical and biochemical intracellular signals. His work spans studies from nanoscopic volumes within a single dendritic spines to entire neurons.

Website: https://www.utsa.edu/santamarialab/

Francesco Savelli, PhD, Assistant Professor
francesco.savelli@utsa.edu

Research in Dr. Savelli's lab is centered on how neurons of the hippocampal formation process information. One high-level function concerns the use of perceptual information of external landmarks (e.g., from the visual system) and the internal sense of motion (e.g., from the vestibular or motor systems) to dynamically create your sense of location relative to a mental map of the surrounding environment. Neurons of the hippocampal formation such as place cells, grid cells, and boundary cells appear to participate in this function. Experimental and computational work in the laboratory is motivated by several broad questions: 1) What role exactly these cells have in the computations that are necessary for creating the map and for updating your sense of location; 2) How subcortical regions participate in this process; and 3) How all this relates to other types of cognitive abstractions that the hippocampal formation creates beyond maps (e.g., of time, or of autobiographical memories).

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/FrancescoSavelli.html

Janakiram Seshu, PhD, Professor
j.seshu@utsa.edu

Research in Dr. Seshu's lab is centered on Lyme Disease which is the most prevalent arthropod-borne infectious disease in the US. *Borrelia burgdorferi*, the causative agent of Lyme disease, and is transmitted to humans (and to other mammals) by the bite of infected *Ixodes scapularis* ticks. Our specific research interests include the following: 1) regulation of gene expression in *B. burgdorferi*, 2) host-pathogen interactions of B. burgdorferi leading to Lyme disease, 3) metabolic control of virulence potential of B. burgdorferi in mammals/ticks, and 4) effects of specific inhibitors of borrelial metabolism in ticks/mammals. Dr. Seshu's lab also studies Q fever which is caused by *Coxiella burnetii* - an intracellular pathogen. Our specific research interests include the following: 1) modification of *C. burnetii* antigens to enhance protective T cell response, generation of deletion mutants for study intracellular trafficking kinetics, and 3) effects of *C. burnetii* on biogenesis/functions of sub-cellular compartments.

Website: https://www.utsa.edu/stceid/labs/JanakiramSeshu/

Marina Augusto Silveira, PhD, Assistant Professor
marina.silveira@utsa.edu

Neuromodulators shape the organization, function, and computations of neuronal circuits. The overall goal of the Silveira Laboratory is to understand how neuromodulation impacts sound processing in the brain. In the central auditory pathway, most auditory pathways converge in the inferior colliculus (IC), which is localized in the auditory midbrain. The IC is extremely important for hearing, as damage to the IC leads to major impairments in speech comprehension and sound localization. Interestingly, the IC receives several neuromodulatory inputs, however how neuromodulators shape auditory processing in the IC and how neuromodulatory inputs to the IC change after hearing loss is largely unknown. In our lab we use in vitro and in vivo electrophysiology, optogenetics and anatomy to understand how neuromodulation impacts auditory computations in the auditory midbrain and how midbrain circuits change after hearing loss.

Website: https://www.silveiralab.org/

Gongchen Sun, PhD, Assistant Professor
gongchen.sun@utsa.edu

The Sun lab designs microdevices to study electrokinetics and transport phenomena in non-equilibrium microsystems. Our approaches include microfluidics, additive manufacturing, electrochemical techniques, and engineering living systems (organisms and cells). We further apply our technologies to address critical challenges in bio/chemical sensing, regenerative medicine, molecular biology, and water treatment.

Website: https://x.com/i/flow/login?redirect_after_login=%2Fgongchen_sun

Alexey Soshnev, PhD, Assistant Professor
alexey.soshnev@utsa.edu

Research in Dr. Soshnev's lab is centered on the manner in which information in eukaryotic DNA is interpreted, modified, and propagated as chromatin - a complex of nucleic acids and proteins. Our laboratory aims to understand how regulatory inputs are integrated to drive specific gene expressions programs during development, and how mutations in chromatin factors lead to human disease. Focusing on linker histones - proteins often mutated in several cancers and developmental disorders, - we work to decipher the causative relationships between chromatin compaction state, gene activity, and many intermediate regulatory events in the nucleus.

Website: https://www.chromatin.bio

Jeffrey Vedanayagam, PhD, Assistant Professor
jeffrey.vedanayagam@utsa.edu

Research in Dr. Vedanayagam's laboratory is centered on studying the genetic renegades in the genome called selfish genetic elements and their impacts on germline development, reproduction, and fertility. In particular, our lab is interested in understanding 1) how selfish meiotic drive genes, which thwart Mendelian segregation during meiosis, compromise germline genome integrity; 2) how host suppression strategies evolve to control the activities of meiotic drive genes and restore faithful transmission of genetic information; 3) what are the consequences of genetic conflicts to the evolution of genes involved in germline processes. We primarily use Drosophila to study the molecular workings of intragenomic conflicts and also utilize computational/bioinformatics approaches to study how selfish genetic elements shape the evolution of fly and mammalian genomes. Our lab is committed to inclusivity and fosters a diverse and welcoming environment that promotes equal opportunities for learning and growth..

Website: https://www.anti-sense.org/

Matthew Wanat, PhD, Associate Professor
matthew.wanat@utsa.edu

Research in Dr. Wanat's lab is centered on studies of the pursuit of rewards and avoiding aversive outcomes. We are particularly interested in studying how stress and drugs of abuse influence motivation, learning, and decision-making processes. The lab employs a number experimental techniques, including fast-scan cyclic voltammetry, chemogenetics, fiber photometry, and optogenetics. Ongoing research projects are examining the behavioral consequences of astrocyte-neuron interactions in the midbrain, the long-term consequences of stress on reward-guided behavior, and the neural circuits involved with changing reward preference. Our ultimate goal is to identify and reverse neural adaptations underlying aberrant processes in models of psychiatric disorders.

Website: https://www.wanatlab.org

Yufeng Wang, PhD, Professor
yufeng.wang@utsa.edu

Research in Dr. Wang's lab is centered on the comparative genomics, molecular evolution, and systems biology of gene families. The lab uses genomic and related data, coupled with other biochemical and microbiological information, to identify new therapeutic targets and to further study the underlying evolutionary mechanisms in diseases such as malaria. Their research has a particular emphasis on the functional divergence of duplicated genes, which are believed to provide the raw material for functional novelty. The lab is also interested in the association between sequence evolution and gene network regulation.

Website: https://www.utsa.edu/sciences/molecular-microbiology-immunology/faculty/YufengWang.html

Marissa Wechsler, PhD, Professor
marissa.wechsler@utsa.edu

The Wechsler lab focuses on the use of engineered polymeric systems for biomarker detection, drug delivery, and the design of complex biological microenvironments with applications in nanotechnology, biosensing, and tissue engineering. We custom synthesize environmentally responsive (temperature and pH sensitive) hydrogels for protein sensing and delivery and stem cell-based technologies. Diseases our research aims to target includes (but is not limited to) autoimmune diseases, vascular diseases, and osteoporosis.

Website: https://ceid.utsa.edu/mwechsler/

ADJOINT FACULTY

Daniel N. Darlington, PhD, Adjoint Professor
daniel.n.darlington.civ@health.mil

Research in Dr. Darlington's lab is centered on pathologies associated with trauma and hemorrhage including coagulopathy, acute lung and kidney injury and inflammatory responses. Our mission is to develop and test resuscitation fluid, drugs and cell based therapies as to attenuate or prevent the development of these pathologies. Methodologies include various animal models of trauma to test these therapies, liquid chromatography tandem mass spectroscopy for measuring changes in energy metabolism in blood cells and tissues, thromboelastometry for measuring all aspects of clot formation, platelet aggregation, multiplex ELISA, and enzymatic assays. Specific interests include changes in platelet aggregation and retraction, adenine energy metabolism, Krebs cycle, electron transport metabolome, inflammatory cytokines, endothelial barrier function, and everything involving pathologies associated with trauma and hemorrhage.

Chester J (Jack) Hutcheson, PhD, Adjoint Associate Professor
chester.j.hutcheson2.civ@health.mil

Surgical and Technological Advancements for Traumatic Injuries in Combat

Michael Adam Meledeo, PhD, Adjoint Professor
michael.a.meledeo.civ@health.mil

Research in Dr. Meledeo's lab is centered on optimizing transfusion medicine through a variety of insertion points. His team has developed numerous in vitro models to explore, define, and target mechanisms underlying the condition known as acute traumatic coagulopathy, a syndrome associated with significant increases in mortality after trauma and hemorrhage. The lab has also worked to develop and optimize alternative storage modalities and transfusion support methods to change blood banking dogma in ways that increase the supply of blood products and maximize the viability of those products to severely injured patients while reducing the logistical burden of delivering blood at the point of injury where it can make the most impact. Simultaneously, ongoing efforts in the lab are driving toward partially or wholly synthetic blood alternatives to bolster supply and bridge the gap between injury and definitive care when patients are most vulnerable.

Kristin Reddoch-Cardenas, PhD, Adjoint Associate Professor
kristin.m.cardenas2.civ@health.mil

Research in Dr. Reddoch-Cardenas's lab is centered on the development and optimization of blood products for battlefield and civilian use. Platelets can be stored refrigerated (1°-6°C) for up to 72 h (up to 14 days with a variance) for treatment of actively bleeding patients, while whole blood can be stored for up to 35 days. Prolonged storage of platelets causes deleterious structural, biochemical, and functional changes (i.e. 'the platelet storage lesion') that can lead to product wastage. Dr. Reddoch-Cardenas's work investigates the effects of novel additives—such as targets of mitochondrial preservation, ROS scavengers, and inhibitors of platelet activation/apoptosis—on platelet hemostatic function in platelet and whole blood storage. Another project is focused on the development of an engineered dried whole blood product for battlefield use. The Reddoch-Cardenas lab works primarily with human blood samples and small animal (rat) models.

Corinna Ross, PhD, Adjoint Professor
cross@txbiomed.org

My research integrates molecular, physiological and behavioral assessment techniques to explore mechanisms that influence healthspan and longevity in non-human primates with an emphasis on translational biomedical modeling. Marmosets have the shortest average lifespan and fastest reproduction of any anthropoid primate, making them ideal for studies of long-term health outcomes. To develop and design phenotyping tools we have modified rodent, other nonhuman primates, or clinical geriatric assessments, including daily activity, ambulation, strength, feeding patterning, and cognitive function. These techniques have been used to characterize a number of disease etiologies

important to developmental programming, geriatric research and current American disease trends including obesity and metabolic syndrome, functional health decline, and frailty.

Website: https://texasbiomedical.theopenscholar.com/ross-lab/

Alan J. Weaver, Jr., PhD, Adjoint Assistant Professor
alan.j.weaver3.ctr@health.mil

Research in Dr. Weaver's is centered on many aspects of trauma and the development of treatments for prolonged field care of the wounded warrior. Prior work has included the development of a burn wound infection model in order to understand host-pathogen interactions and test novel treatments, while also investigating alterations in the microbiome of burn wounds. More recently his efforts have focused on the host response under trauma, particularly as it relates to endotheliopathy and vascular leakage. Currently his team is working to identify key biomarkers of endotheliopathy within multiple trauma models (e.g., burns, hemorrhage, compartment syndrome) with the goal of developing an endotheliopathy specific animal model for use in future therapeutic testing. Dr. Weaver's work has expanded to include rodent, porcine, and canine models, taking part in multiple endeavors regarding trauma research. Despite recent efforts, he still maintains an active interest in host-pathogen interactions related to traumatic injury.

Xiaowu Wu, MD, MMS, Adjoint Associate Professor
xiaowu.wu.civ@health.mil

Research in Dr. Wu’s lab is centered on investigating therapeutics for combat trauma and hemorrhagic shock, which are currently supported by multiple intramural research funds. Dr. Wu and his team have developed numerous battlefield and clinically relevant in vivo animal models, including polytrauma, hemorrhagic shock, burn, traumatic brain injury, and radiation, to characterize associated pathophysiologic changes and define therapeutic targets. His lab includes two independent procedure rooms at the vivarium to conduct animal experiments and a designated area that obtains the equipment to perform histology, immunohistochemistry, molecular biology, hematologic analysis, and cell culture, including Maestro Edge and Bioflux for in vitro models of endothelium physiology. The ongoing efforts are driven mainly to develop and test pharmaceutical interventions, various blood products, or synthetic blood used at or near the point of injury to improve the survival of lethal hemorrhagic shock that bridges the gap between injury and accessing definite care; mitigate the morbidity of trauma and hemorrhagic shock, including enotheliopathy, in order to reduce vascular permeability and improve the efficacy of fluid or blood resuscitation; and treat acute traumatic coagulopathy as a part of hemostatic resuscitation therapy. Dr. Wu currently serves as a research scientist at the blood and shock resuscitation department of USAISR and as an adjunct associate professor at the Surgery Department of the University of Texas Health Science Center at San Antonio.

Lusha Xiang, MD, Adjoint Associate Professor
lusha.xiang.civ@health.mil

Research in Dr. Xiang's lab is centered on the development of prehospital treatments that protect organ function (renal specifically) and extend survival following traumatic injury and hemorrhagic shock. His interests and expertise align around renal, cardiovascular, pulmonary, and exercise physiology, with focuses on hemorrhage and anti-shock therapies, acute kidney injury, and acute lung injury.

AFFILIATE FACULTY

Gary Gaufo, PhD, Associate Professor
gary.gaufo@utsa.edu

Research in Dr. Gaufo's laboratory is centered on understanding the onset of gene activation and the first cell fate decision in mammals. This remarkable period marks the independence of the early embryo from maternal factors to a reliance on its own genome. Coincident with this molecular event, the embryo transitions from a totipotent state – the capacity to generate the embryo proper and extraembryonic tissues, such as the placenta – to a more restricted pluripotent state generally restricted to the embryo proper. Using in vitro models – induced pluripotent and embryonic stem cells – experiments are focused on discovering the epigenetic mechanisms that control the transition between totipotent and pluripotent states. The overarching goal of the laboratory is to understand the evolution of the genomic ecosystem that ultimately contributed to this uniquely mammalian phenomenon.

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/GaryGaufo.html

Howard Grimes, PhD, Professor
howard.grimes@cymanii.org

Dr. Grimes is the Associate Vice President and Associate Vice Provost for Institutional Initiatives. His portfolio includes projects related to achieving Carnegie R1 status and National Research University Fund (NRUF) eligibility; expansion of the Research Core Facilities Program and strengthening its infrastructure; facilitating the Transdisciplinary Research Council to foster multi- and inter-disciplinary research and academic activities; and assisting with strategic faculty recruitment.

Website: https://www.utsa.edu/today/2019/02/story/InstitutionalInitiatives-Grimes.html

David Jaffe, PhD., Professor
david.jaffe@utsa.edu

Research in Dr. Jaffe's lab is centered on neurons which transmit and process information in the brain. Their function is determined to a large extent by how they convert a spectrum of spatial and temporal patterns of stimulation into electro-chemical responses. Dr. Jaffe's lab uses a combination of computer modeling and

experimentation to explore how neurons, and networks of neurons, filter and process information in normal and diseased states, such as epilepsy, Alzheimer's disease, and pain processing and behavior.

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/DavidJaffe.html

Richard LeBaron, PhD, Professor
richard.lebaron@utsa.edu

Research in Dr. LeBaron's lab is centered on cell adhesion interactions with molecules of the extracellular matrix (ECM). Cell adhesion is a central function that underlies tissue development, homeostasis and tissue regeneration. Understanding cell adhesion-class ECM molecules and their cell-surface receptors will promote the development of novel therapeutics, and the identification of treatment targets for injured and diseased tissues. Dr. LeBaron's group is focused on an ECM protein called BIGH3 ('TGFBI') and its roles in human diabetic retinopathy, nephropathy, and as a tumor suppressor and promotor protein. His group applies methodologies of molecular biology, cell biology and biochemistry to 'in vitro' models comprising early passage human and animal cells and continuous cell lines. Dr. LeBaron's research also emphasizes the training, development, and mentoring of undergraduate and graduate students.

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/RichardLeBaron.html

Robert Renthal, PhD, Professor
robert.renthal@utsa.edu

Research in Dr. Renthal's lab is centered on chemical communication by arthropods, with a particular interest in ants, flies, and ticks. Methodologies include mass spectrometry (proteomics and lipidomics), fluorescence spectroscopy, fluorescence microscopy, and bioinformatics. Ongoing projects include: studies of lipid-binding proteins in tick resistance to Lyme disease spirochetes; how odorants bind to and dissociate from insect odorant receptors; the role of lipid-binding proteins in odorant transport to insect olfactory neurons; photochemical tags for biochemical analysis of insect sensillar pore tubules; and antennal touch receptors in ants.

Website: https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/faculty/RobertRenthal.html

Charles Wilson, PhD, Professor
charles.wilson@utsa.edu

Research in Dr. Wilson's lab is centered on how the brain's electrical signals control our muscles and movements. Parkinson's disease results from loss of midbrain dopamine neurons, but its symptoms result from pathological electrical signals created and communicated among the cells that remain. Dr. Wilson uses mathematical models and

cell-specific electrophysiology to understand the computations embedded in the electrical signals of the basal ganglia, and their dysfunction in Parkinson's Disease. Dr. Wilson's lab is refining and informing Deep Brain Stimulation therapies for Parkinson's patients.

Website: https://marlin.life.utsa.edu