Texas A&M University

Faculty of Genetics

2020-2021

First Year Graduate Student Handbook

http://genetics.tamu.edu

Graduate Program Committee

Faculty of Genetics

Texas A&M University

Please submit any suggestions or corrections to the Genetics Office

Room 109A Biochemistry/Biophysics Building, (979) 458-2284

HOWDY!

We are pleased you have chosen the Genetics Program of Texas A&M University to pursue your graduate studies. This Ph.D. Handbook provides a description of the doctoral program, what is expected from you and when, and all sorts of handy information about registration and forms, etc. It is important to note, however, that the TAMU Graduate Catalog for the 2020-2021 academic year is the official document stating the rules and regulations under which your pursuit of a graduate degree is to be conducted. We strongly suggest that you read the academic expectation section, as well as the Genetics section under Interdisciplinary Degree Programs (Doctoral), which lists the steps toward obtaining a PhD and deadlines.

Again, we speak for the whole Faculty of Genetics in extending our warmest welcome to you, our new students and colleagues. Have a good year!

David Threadgill, Ph.D.
Chair, Faculty of Genetics

Sarah Bondos, Ph.D.
Chair, Advising Committee

Joseph Dubie
President, Genetics Graduate Student Association

Texas A&M University is a public institution and flagship of the Texas A&M University System that is dedicated to the development and dissemination of knowledge in diverse academic and professional fields. The University is committed to assist students in their search for knowledge to help them understand themselves, their cultural and physical environment, and to develop in them the wisdom and skills needed to assume responsibility in a democratic society. The University assumes as its historic trust the maintenance and enhancement of an intellectual environment that encourages the development and expansion of the human mind and spirit. While continuing to fulfill its mission as a Land-Grant/Sea-Grant/Space-Grant institution, the University is evolving and expanding its role to meet the changing needs of state, national, and international communities as a member of the Association of American Universities, an international organization of pre-eminent research-intensive universities.

Established in 1876 as the first public college in the state, Texas A&M University today has become a world leader in teaching, research, and public service. Located in College Station in the heart of Texas, it is centrally situated among three of the country's 10 largest cities -- Dallas, Houston, and San Antonio. For the Fall 2018 semester, enrollment was 69,367, making Texas A&M the largest university campus in Texas and the second largest in the United States. Students at Texas A&M represent every state and 123 countries.

Research: Texas A&M's research budget for fiscal year 2017 was more than $905.4 million, ranking Texas A&M in the top 20 of the National Science Foundation's Higher Education Research and Development Survey and first in the Southwest.

Facilities: The University's 5,200-acre campus, which includes a 434-acre research park, is one of the largest in the nation and is valued at more than $1 billion. In addition to the College Station campus, and the Bryan Health Science Center Campus, the university has branch campuses in Houston, TX Galveston, TX and Doha, Qatar, and operates the Soltis Research and Education Center near the town of San Isidro, Costa Rica, the Santa Chiara Study Center in Castiglion Fiorentino, Italy, and the Texas A&M University Center in Mexico City.

Cores: Texas A&M supports a wide range of core facilities housing cutting-edge equipment and technological capabilities to support genetic, genomic, molecular biology and bioinformatics research and training. Core facilities supporting research in genetics includes:

1. Computational Biology

Texas A&M Institute for Genome Sciences and Society Bioinformatics Core: Provides the campus community training, support, and access to commercial software including Ingenuity Pathway Analysis (Qiagen), CLC Genomics, JMP Genomics (SAS), Biorender for scientific images, and FreezerPro (Ruro) for sample management. Additionally, open-source software is provided on a dedicated high-performance computing cluster (HPC). The compute cluster contains 296 compute nodes (592 with HT enabled) with forty-core high performance/high memory "fat" node plus sixteen blades with sixteen cores each. The fat node (edits) has a total of 1 TB of memory and the standard compute nodes have 64 GB each for a total of 2 TB compute memory. The cluster has 70 TB usable high-performance/high-availability network attached storage (NAS). Software on the compute cluster supports genomic applications that can be accessed by command-line or Galaxy GUI. The TIGSS compute cluster is tailored for bioinformatics and computational biology applications, sequence assembly, alignment and analysis. The cluster hosts a broad range of tools such as BWA, ABySS, SOAPdenovo, Velvet, TopHat, Cufflinks, Trinity, Bowtie, MUMmer, HMMER, MIRA, NCBI BLAST, and ClustalW. TIGSS also has access to the Ada in the Texas A&M Super Computing Facility. Ada is an 850 node, 17,500 core super computer with 4 PB disk storage. TIGGS also maintains a Dell Isilon Gen 6 H500 PB data storage system for campus users. A full-time system administrator provides support for the TIGSS compute cluster. The bioinformatics help desk provides support for training, project assistance, and programming services. These services are tracked through a Project Management and Issue Tracking software (ProMIs) that provides progress tracking, issue reporting and tracking, the TIGSS source code repository, and documentation.

Website: https://genomics.tamu.edu/

Email: tigss@tamu.edu

AgriLife Genomics and Bioinformatics Services: Provides bioinformatics services including consultation and experimental design, and bioinformatics analysis and processing.

Website: https://www.txgen.tamu.edu/

Email: charlie@ag.tamu.edu

Laboratory for Molecular Simulation: Offers training in molecular modeling and computational chemistry. Advanced modeling software is available to perform quantum calculations on small molecular or solid systems and molecular mechanics/dynamics modeling for large systems such as proteins, DNA, nanomolecules, polymers, solids, and liquids. The LMS also provides training in Linux and support for faculty and students that wish to incorporate molecular modeling in the course material.

Website: https://lms.chem.tamu.edu/

Email: lms@tamu.edu

Protein Folding Server: Provides access to computational techniques to map a protein's potential landscape, and to generate transitional motions of a protein to the known native state from unstructured conformations or between use-specified conformations. Protein conformations can be submitted by PDB ids or structures can be uploaded in PDB format.

Website: https://parasol.tamu.edu/groups/amatogroup/foldingserver/

Email: parasol-admin@cse.tamu.edu

High Performance Research Computing (HPRC): Provides access to high performance computing (HPC) resources, user training and advanced user support. HPRC has three HPC clusters with an aggregate of 27,868-core and 11 petabytes of high-performance disk space along with advanced research software, including an extensive array of genomic programs, RStudio server and a Galaxy gateway.

Website: https://hprc.tamu.edu/

Email: help@hprc.tamu.edu

2. Molecular Biology and Genomics

Texas A&M Institute for Genome Sciences and Society Molecular Genomics Core: Maintains shared equipment to support genomics-based research. Training and experimental support for library preparation and sequence generation including a Biomark HD (Fluidigm) for microfluidic-based high-throughput qPCR, genotyping and digital PCR, C1 Single-Cell System (Fluidigm) for microfluidic-based single cell capture and genome, transcriptome or proteome analysis, 10X Genomics system for de novo genome and single cell profiling, GentleMACS Octo Dissociator for generating single cell suspensions, iScan (Illumina) for genotyping, CNV, methylation and expression profiling, Cytation 5 Cell Imaging Multi-Mode Reader (BioTek) for microplates that combines automated digital microscopy and conventional microplate detection with both high sensitivity filter-based detection and a flexible quadruple monochromator based system with a fluorescence cellular imaging module and up to 60x magnification, two epMotion 5075 (Eppendorf) liquid handling robots that can be used for any molecular application that can be automated including NGS library generation, PCR setup, and nucleic acid extraction, CHEF-DR II (Bio-Rad) pulsed-field gel electrophoresis system that can resolve DNA fragments from 5kb to 6Mb, Maxwell 16 (Promega) for automated processing of samples for DNA or RNA isolation from a variety of tissues and sources including formalin-fixed paraffin embedded tissues, Qubit Fluorometer (Life Technologies), Tape Station 2200 (Agilent) for automated RNA, DNA and protein QC using 1-96 samples, CSX96 real-time PCR (Bio-Rad) six-channel pPCR system, TissueLyser II (Qiagen) for simultaneously disruption of multiple biological samples through high-speed shaking, Bio-Rad QX200 AutoDG Droplet Digital PCR, and Illumina NextSeq 500 (Illumina) sequencing system for quick turnaround NGS data collection, a MiSeq (Illumina) sequencing system for microbiome and small genome sequencing, an iSeq 100 for library Q/C, an GridION (Oxford) for long-range sequencing, a Saphyr (Bionano) system for optical DNA mapping and structural variant analysis, and 5 NextSeq 2000 instruments through the Texas Genomics Core Alliance (texasgenomics.org), of which TIGSS is a founding member Additional equipment available for use is an Illumina iScan, BioTek Cytation 3 Cell Imaging Microplate Reader, Bio-Rad Bio-Plex 200 for Luminex xMAP technologies, Eppendorf epMotion 5075 robot, Bio-Rad CHEF-DR II pulsed-field gel electrophoresis system, Promega Maxwell 16 for automated nucleic acids isolation, Bio-Rad CSX96 real-time PCR

unit, Agilent Tape Station 2200 for nucleic acid and protein QC, Qiagen TissueLyser II, and a Miltenyi GentleMACS for tissue dissociation.

Website: https://genomics.tamu.edu/

Email: tigss@tamu.edu

AgriLife Genomics and Bioinformatics Services: Provides next generation sequencing and library preparation. Equipment includes Illumina HiSeq2000, HiSequ2500v4, and MiSeq.

Website: https://www.txgen.tamu.edu/

Email: charlie@ag.tamu.edu

Laboratory for Genome Technology: Offers Sanger sequencing services on an ABI 3130x1 and DNA fragment analysis on an ABI377 and two LICOR instruments.

Website: https://ipgb.tamu.edu/services/laboratory-for-genome-technology/

Email: e-no@tamu.edu

Molecular Cytogenetics Laboratory: Performs a wide range of cytogenetic, molecular, and DNA-based testing. Services include chromosome analysis by karyotyping and FISH.

Website: https://vetmed.tamu.edu/molecular-cytogenetics/

Email: traudsepp@cvm.tamu.edu

Bioseparation Lab: Provides an environment for bioprocess engineering with an emphasis in recombinant protein recovery from plant and microalgae systems. Can assist with developing novel and effective strategies for extraction and purifications of recombinant and native biomolecules from plants.

Website: https://bioseparations.tamu.edu/

Email: znikolov@tamu.edu

3. Cell and Chemical Biology

Flow Cytometry Core: The Flow Cytometry Shared Resource Facility at Texas A&M mission is to provide the highest quality flow cytometry data, data analysis and cell sorting services for the faculty and staff of the Texas A&M University system and surrounding universities

and companies. We currently provide training for flow cytometer (analyzer) use and data analysis using the FlowJo software. We also provide staff-assisted flow cytometery (analyzer) data acquisition, cell sorting, and data analysis. The core provides experimental design and consultation services. We also welcome collaborations on a case by case basis. Supports immunophenotyping, DNA and cell cycle content analysis, apoptosis, cell proliferation, phagocytosis, single cell sorting for transgenic and CRISPR edited cell line development, single cell sorting for downstream RNA seq and single-cell RNA seq applications, etc. Equipment includes Beckman Coulter MoFlo® AstriosTM High-Speed Cell Sorter,a Becton Dickinson Accuri C6TMAnalyzer, and a Becton Dickinson FACSCaliburTM Analyzer.

Website: https://vtpb.tamu.edu/flow-cytometry/

Email: gwright@cvm.tamu.edu

CVM Histology Laboratory: The Research Histology Unit is a full-service histology laboratory that provides routine tissue embedding, slide preparation, digital pathology (pathologist's analyses via consultation or collaboration and whole slide imaging) and staining. If you have unique tissue handling needs for your research, please consult with us. We can accommodate most researchers' needs.

Services:

- *Embedding*: paraffin or OCT medium (frozen tissue).
- *Slide preparation*: microtome (paraffin) or cryostat (frozen tissue)
- *Histological stains*: Routine hematoxylin and eosin (H&E); an extensive list of special stains, and immunohistochemistry/IFC (see link to IHC page) are available.
- *Whole slide imaging:* Our Pannoramic SCAN II can automatically digitize up to 150 slides in one run. It can digitize your fluorescent samples in 6 different fluorescent channels. The Pannoramic SCAN II supports the best Carl Zeiss objectives, achieving up to **43x or 86x** resolution (scanned at 20x or 40x magnification, respectively).
- *Pathology consultation and/or collaboration*: Yava Jones-Hall DVM, PhD is a board certified veterinary pathologist and is available for consultation or

collaboration. Dr. Jones-Hall uses the VisioPharm platform for analyses. Contact her at yavajh@tamu.edu to discuss your project needs.

Website: https://vetmed.tamu.edu/cvm-histology-lab/research-histology-unit/

Email: historesearchlab@cvm.tamu.edu

Laboratory for Biological Mass Spectrometry: Provides expertise in mass spectrometry methodology, instrumentation, and informatics including Electron Ionization (EI), Chemical Ionization (CI), Atmospheric Pressure Chemical Ionization (APCI), Electrospray Ionization (ESI), Matrix Assisted Laser Desorption Ionization (MALDI) and MS/MS analysis of peaks in ESI, APCI, and MALDI spectra. The services cover proteomics as well as molecular-level research in various "omics" related researches, i.e., petroleomics, metabolomics, lipidomics, and glycomics. This includes analyses of compounds from small organic molecules to macromolecules including proteins, oligonucleotides, polymers, and dendrimers. Instruments include Applied Biosystems Voyager-DE STR, Applied Biosystems PE SCIEX QSTAR, Thermo Scientific DSQ II GCMS, Thermo Scientific LCQ-DECA, Applied Biosystems 4700 Proteomics Analyzer, Applied Biosystems 4800 TOF Analyzer, Applied Biosystems MDS SCiex 4000 QTRAP, Bruker Daltonics solariX Qq-FTMS, and Waters Synapt G2 HDMS.

Website: http://mass-spec.tamu.edu/

Biomolecular NMR Laboratory: Provides access to spectrometers suited for solution-state NMR studies on biological macromolecules like proteins and nucleic acids. Instruments include a Bruker AVANCE III 800 MHz equipped with 5 mm TCI cryoprobe, two Bruker AVANCE III HD spectrometers (600 MHz and a 500 MHz) and a Varian 600 MHz.

Website*:* https://biobionmr.tamu.edu/

Email: xianzhong@tamu.edu

NMR Facility: The NMR facility is part of the Center for Chemical Characterization (CCCA) in the Chemical and Analysis Department. The CCCA has facilities for x-ray crystallography mass spectrometry, and elemental analysis. The NMR facility provides equipment maintenance support, user training, and spectroscopic service. Instruments include Advance 500 (500 MHz Cryoprobe system with high sensitivity for small 1H, 1H{13C}

and 1H{15N] samples), NMRS 500RM (500 MHz system with 4 channels and H/F/P/C quad probe for 1H{31P}{19F}), Inova 500 (500 MHz H/F/P/C system), NMRS 500, Advance III 400 (400 MHz broadband spectrometer with sample change), Advance 400 (400 MHz Solid State NMR with 2.5, 4, and 7 mm CP/MAS probes), Inova 400 (400 MHz system with 31P – 15N broadband probe), Inova 300 (300 MHz instrument with H/F/P/C quad probe) and NMRS 300 (300 MHz H/C system).

Website: https://nmr.chem.tamu.edu/index.php

Email: gregory.wylie@chem.tamu.edu

X-Ray Diffraction Laboratory: X-Ray Diffraction Laboratory: This facility is dedicated to the analysis of solid-state materials using X-ray diffraction. Examples of services provided include the determination of crystal structures using both single-crystal and powder diffraction, the analysis of crystallinity in polymeric and inorganic materials including nanomaterials, the elucidation of molecular structure as it applies to organometallic and coordination chemistry, organic chemistry and pharmaceutical chemistry. The facility is equipped with a state-of-the-art array of instruments consisting of two Burker single-crystal IuMS source/Photon III diffractometers, one Bruker Duo IuMS source Photon I diffractometer, one Bruker APEXII diffractometer, and four Bruker powder diffractometers. The facility also provides access to a broad range of data analysis software that can be used for structure solution as well as for the determination of stress and percent crystallinity from powder and solid-state samples, to name a few applications.

Website: https://xray.chem.tamu.edu/

Email: reibenspies@chem.tamu.edu; gabbai@chem.tamu.edu

Protein Chemistry Lab: Provides support for advanced protein chemistry and proteomics research through state-of-the-art instrumentation, systems, software, technical expertise, and training. Instruments include automated Edman protein sequence analysis, amino acid analysis, protein gel electrophoresis and electroblotting, DALTSix for large-scale 2D gels, Typhoon trio fluorescent imager, Ettan robotic systems for high-throughput picking,

digesting and spotting, high pressure liquid chromatography, MALDI-TOF MS, and electrospray MS.

Website: https://pcl.tamu.edu/

Email: ljdangott@tamu.edu

4. Microscopy

Image Analysis Lab: Provides state of the art microscopy technologies for research and teaching in the life sciences. Emphasis is placed on integration of advances in biophotonics to provide some of the most sensitive approaches for molecular analysis of cellular and tissue function. A variety of support services are available including fluorescence and transmitted light imaging, 3D and 4D live-cell imaging from um to mm scale, FRAP, FLIP, photo activation/conversion, FRET, FLIM, transmission electron microscopy, and image processing, analysis and quantification. Equipment includes Zeiss Cell Discoverer 7, Zeiss Axio Imager IM.2, Zeiss ELYRA S.1 Superresolution Microscope, Zeiss LSM 780 NLO Multiphoton Microscope with airyscan detector, Zeiss TIRF3, Zeiss 510 META Confocal Microscope, Zeiss Stallion Digital Imaging Workstation, Zeiss Digital Imaging Workstation, FEI Transmission Electron Microscope, Veritas Microdissection System, and BioTek Synergy 4 Microplate Reader. Several software packages are available for qualitative and quantitative Image analysis.

Website: https://vetmed.tamu.edu/ial/

Email: Dr. Rola Mouneimne: rmouneimne@cvm.tamu.edu for optical microscopy.

Dr. Joseph Szule: jszule@cvm.tamu.edu for transmission electron microscopy.

Microscopy and Imaging Center: Provides current and emerging technologies for teaching and research involving microscopy and imaging in Life and Physical Sciences on the Texas A&M campus and beyond, training and support services for microscopy, sample preparation, in situ elemental/molecular analyses, as well as digital image analysis and processing. Our instruments include the following: optical microscopes-a Leica SP8 confocal with STED and FLIM capability, an Olympus FV 1000 confocal, a Leica DM 6B

upright microscope, and a Zeiss Z.1 Lightsheet microscope; scanning electron microscopes-a FEI Quanta 600 FE-SEM with Zyvex S100 nanomanipulator, and a Tescan Vega 3 SEM; transmission electron microscopes-a FEI Tecnai G2 F20 ST FE-TEM for materials, a FEI Tecnai G2 F20 T FE-TEM for cryo, a JEOL 1200 EX, and a JEOL JEM-2010; supporting equipment-Pelco easiGlow Glow Discharge apparatus, Cressington 308 Evaporative Coater, Cressington 208HR Sputter Coater, Cressington 108 Sputter Coater, Diener Zepto Plasma Cleaner, Pelco Biowave, Fischione 1010 Ion Mill, a Reichert Ultracut Microtome, a Microm Rotary Microtome, Leica EM ICE High Pressure Freezer, Leica EM AFS2 Freeze Substitution Apparatus, Leica UC7 cryo-ultramicrotome, and Leica EM GP2 automatic plunge freezer.

Website: https://microscopy.tamu.edu/

Email: kmaitland@tamu.edu; almcintosh@tamu.edu

5. Organismal Facilities

Texas A&M Institute for Genome Sciences and Society Pre-Clinical Phenotyping Core:

Provides access, training and service for a variety of phenotyping modalities using mouse and other rodent models. Current capabilities exist for behavior, physiology and molecular phenotyping. Behavior systems include TRU SCAN activity monitoring system, Morris water maze, shuttle cages with shock floor, Habitest system three choice serial reaction time testing, 5 animal rotarod, three-chamber monitoring system, small animal stereotaxic system, anesthesia suite, T-maze, elevated maze, radial maze, and Mouse Specifics DigiGait system for automated gait analysis. Physiology systems include Hatteras CCS2000 for chilled urine collection from 45 mice concurrently, Hatteras MC4000 tail cuff blood pressure system for 8 mice concurrently, TSE Phenomaster with automated food/water intake, activity monitoring, calorimetry/O2/CO2 measurement for 32 mice concurrently, two Mouse Specifics ECGenie non-invasive electrocardiogram systems, Stortz rodent endoscope, EchoMRI-100H for body composition analysis, and VisualSonics VIVO 3100 high-frequency ultrasound for cardiovascular and tissue analysis in vivo. Additional capabilities on campus include treadmill, running wheels, DEXA for bone density analysis, and a variety of imaging modalities including PET/CT and Xenogen IVIS

200 bioluminescent imagers. Molecular capabilities include a BioPlex 200 suspension array system for small volume adipokine and cytokine measurements, Jess (ProteinSimple) capillary system for automated chemiluminescence and fluorescence digital western blots, Abaxis VetScan VS2 for small volume clinical chemistries, Abaxis VetScan HM5 for small volume complete blood counts, and histopathology support with a Leica automated tissue processor, embedding station, and automated rotary microtome along with associated equipment. The core also provides access to a TubeWriter 360 for automated, high-speed tube and vial labeling.

Website: https://genomics.tamu.edu/

Email: tigss@tamu.edu

Texas A&M Institute for Genome Sciences and Society Collaborative Cross

Genetic Resource: mice from the Collaborative Cross genetic reference population are maintained for investigators at Texas A&M and collaborators. The resource currently maintains approximately 45 distinct lines of CC mice along with breeding various CC-RIX (recombinant inbred crosses).

Website: https://genomics.tamu.edu/

Email: tigss@tamu.edu

Texas Institute for Genomic Medicine: Resource for any researcher looking to obtain genetically modified mice or mouse embryonic stem (ES) cells. Services include pronuclear injection, blastocyst injection, CRISPR/Cas9-based genome modifications, sperm cryopreservation, embryo cryopreservation, rederivation via IVF, embryo transfer, colony maintenance, cohorts of stock mice, gene targeting and access to ES-cell based gene trap libraries.

Website: https://www.tigm.org/. Email: bmorpurgo@tigm.org; agolovko@tigm.org

Plant Growth Facilities: Provides twenty0two growth chambers and 12,000 sq ft of greenhouse space for transgenic and non-transgenic plants. A greenhouse annex has an additional 25,232 sq ft of greenhouse space and a 16,473 sq ft headhouse. A variety of lighting controls are available to simulate different growth conditions.

Website: https://ipgb.tamu.edu/services/plant-growth-facility/

Email: twvann@tamu.edu

6. Instrumentation:

Chemistry Electronic Shop: This facility will coordinate the electronics design, construction, and repairs of major instrumentation. Fuses, wire, switches, and small electronic parts are available. Experience with HP printer repairs.

Website: https://www.chem.tamu.edu/directory/electronics-shop.php

Email: tpehl@chem.tamu.edu

Physics Electronic Shop and Parts Store: Provides services for the engineering, design, construction, calibration, testing, and repair of a wide range of scientific & technical electronic equipment. In addition, the Electronics Shop provides a "self-service store" of over 7000 parts commonly used in scientific equipment.

Website: https://physics.tamu.edu/services/electronics-shop-staff/

Email: spayne@physics.tamu.edu

Chemistry Glass Shop: Fabrication and repair of instructional/research glassware. Stock sizes of glass tubing, rod, ground glass joints, stopcocks, glass-metal seals, etc., are available.

Website: https://www.chem.tamu.edu/directory/glass-shop.php

Email: merka@chem.tamu.edu

Chemistry Machine Shop: The Chemistry Department Machine Shop is here to provide any and all types of machining, fabrication, and repairs primarily for the TAMU Chemistry Department, however we also do work for many other Departments in the System when time allows.

We provide CNC (Computer numerical control) machining with our HAAS Super Mini Mill 2 and our SL-10 Lathe. Our software for these machines consists of Matercam. We also use Solidworks for our drawings and design. We also have numerous Manual Mills

and Manual Lathes, horizontal, vertical and table saws, Plasma cutter. We can machine Stainless, Steels, Aluminums and many types of Plastics. We can also do all types of welding, GTAW (tig), GMAW (mig) and GSAW (stick) on all types of material, Steel, Stainless, Titanium and Aluminum.

Our staff can work from sketches to CAD designs. We also provide our clients with estimates and consultations on work and design when requested.

Website: https://www.chem.tamu.edu/services/#MachineShop

Email: wseward@chem.tamu.edu

Physics Machine Shop: Provides fabrication of prototype scientific instruments, as well as on-site inspection, estimates, consulting, machining, welding, and repairs. The Machine Shop personnel will work from a spectrum of rough sketches to CAD designs to create machined products.

Website: https://physics.tamu.edu/services/machine-shop/

Email: garrickgarza@physics.tamu.edu

BRYAN/COLLEGE STATION

Bryan/College Station is located in Brazos County in east-central Texas, about 140 miles from the Gulf of Mexico. It lies in an area known as the Post Oak Belt, and there is a prevalence of post oak, blackjack oak, elm and hickory trees. The terrain is characterized by gently rolling hills. Bryan/College Station are "sister cities" located in Brazos County with a combined population of 273,101 in 2019.

The climate is classified as humid sub-tropical with hot summers. The average annual temperature is 68 degrees with average humidity at 71%. Winters are mild, with short spells of cold weather, lasting two to three days. Occasionally, the temperature can drop as much as 30 degrees in one hour; these are caused by polar Canadian air currents and are termed "Blue Northers." Snow is rare. Spring weather is variable with many thunderstorms. Summer is essentially invariable, with an average maximum temperature of 94 degrees and high humidity (it gets hot and stays hot!).

Housing: Housing in Bryan/College Station is plentiful, but it is important to start looking early for accommodations that are satisfactory and affordable. There are several services that can help you find a place to live. Do not forget that it will get hot, and air conditioning is a must!!!

The Off Campus Student Housing Office (http://studentlife.tamu.edu) is on main campus. You can call them at (979) 845-1741 during the hours of 8am - 5pm, Monday through Friday. In addition to publishing The Off Campus Survival Manual, this department has a number of useful services such as Adult and Graduate Student Services, Women's Programs, and the Housing Vacancy Listing through AggieSearch (https://aggiesearch.tamu.edu) which is a listing of houses, apartments, duplexes, rooms in houses, mobile homes and condominiums. This office also has roommate referral services and tenant/landlord rights and responsibilities information. In addition, the Off Campus Student Housing Office conducts surveys of apartment prices around town and has useful maps and other information for you.

Transportation: The Bryan/College Station area is serviced by Easterwood Airport (CLL) on the TAMU campus. Daily flights are available on American Airlines from Dallas-Fort Worth International Airport (DFW) and United Airlines from George Bush Intercontinental Airport (IAH) in Houston. A variety of shuttle services are also available to and from Houston and Austin. Like most moderate sized cities in the US, public transportation is available in Bryan/College Station. However, a car, or access to a car, is still very helpful. Uber and commercial taxi services are available throughout the area. Area transportation provides can be found at the Bryan/College Station Convention and Visitor Bureau site (http://www.visitaggieland.com).

Texas A&M provides an extensive on- and off-campus bus systems that is free for all students. Maps, with real-time tracking of buses, and information on campus parking are available at the Transportation Services website (http://transport.tamu.edu). The TAMUMobile app available for smart phones provides real-time bus tracking, route maps, virtual campus tours, event calendar and a variety of other useful information.

The Brazos Transit District (The District) provides hourly fixed bus routes throughout Bryan/College Station that is also free for all students. Unlike the TAMU bus system focused on the TAMU campus, The District provides transportation to shopping and other destinations. Maps and timetables are available at The District website (http://www.btd.org).

EMERGENCIES: In case of emergency, call 911 for an ambulance, the police, or a fire department. If you are calling from a campus telephone, you will need to dial 9-911, unless you are dialing from a TAMHSC building, in which case it is 8-911.

HEALTH CARE: Medical and psychological health services are available on campus at Beutel Student Health Center. The non-emergency number is (979) 845-1525. You can schedule an appointment online or at (979) 458-8250.

KEY ADMINISTRATIVE FACULTY AND STAFF

David Threadgill, Ph.D., Chair, FOG…….. 979-436-0850
dwthreadgill@tamu.edu, Office: Reynolds Medical Building, Room 428

Ximena Paez, Ph.D. Outreach Chair & Program Coordinator……. 979-458-2284
paez@tamu.edu, Office: BIO/BIO, Room 109A

Tamara Ospina-Vega. Program Specialist…….979-458-2284
tov@tamu.edu, Office: BIO/BIO, Room 109A

If Dr. Threadgill is out of town and a signature is needed, the following faculty have signature authority:

Sarah Bondos, Ph.D., Advising Chair……..979-436-0807
bondos@tamu.edu, Office: 4417 MREB2

Zachary Adelman, Ph.D., Recruiting Chair……..979-458-3107
zachadel@tamu.edu, Office: Heep Center 329A

THE GENETICS GRADUATE STUDENT ASSOCIATION (GGSA)

Purpose of the Organization

The Genetics Graduate Student Association (GGSA) is an advocacy and social group for graduate students with research interest in Genetics. A member of the GGSA must be enrolled with graduate classification at Texas A&M University, classified as a Genetics major and in good standing with the University. The organization meets each month to socialize, to address any academic issues they may have within the program, and issues within the University. The GGSA has representatives on the Recruiting, Graduate Curriculum, and Graduate Advising Committees of the Faculty of Genetics so that they can report their issues within the program, which are then passed on to the Executive Committee of the Genetics Faculty. University issues are passed on to the Graduate Student Council (GSC). The GGSA also has organized events throughout the year such as Fall Picnic, Tailgate Party, volleyball, games, etc. A list of students serving as officers and on committees in the GGSA can be found at:

https://g2sa.tamu.edu/meet-the-officers/

THE GRADUATE PROGRAM IN GENETICS

The Doctor of Philosophy (PhD) graduate program in Genetics provides students with specialized training through course work, research, and teaching. The program has established requirements in these areas that must be satisfied by all students. The program requirements exist so that graduate students will receive a thorough understanding of their area of specialization as well as intensive experience in their particular field of research.

Additional requirements for graduate degrees are established by the Office of Graduate and Professional Studies (OGAPS). In most cases, the Genetics requirements are more explicit than the OGAPS requirements.

It is your responsibility as a graduate student to ensure that you have met all program, graduate, and university requirements for your degree. The purpose of this handbook is to describe both the programs and the University requirements so that you have a single, accessible reference that applies to all students in your year. Any changes to handbook rules in future handbooks will not apply to you unless you are specifically informed by the Genetics Office that the change affects all students. **Please keep this book handy and refer to it as you progress through pursuit of your degree.** Additional information can be obtained from the Graduate advising office for Genetics, located in Bio/Bio, Room 109A; e-mail: genesec@tamu.edu; Tel: (979) 458-2284.

To ensure that all students are making adequate progress towards their degree, the Faculty of Genetics has established a schedule for meeting specific requirements. This schedule allows students to make reasonable progress toward a degree while assuring that all major requirements are met in a timely fashion. Additionally, it enables the Faculty of Genetics executive committee to perceive and correct problems experienced by students.

Timeline of Milestones: The following time schedule should be met for all Genetics PhD graduate students (semester refers to a regular 17-week semester and does not include summer terms). A more detailed deadline list can be found in Appendix I, Expectations of Genetics Graduate Students.

Choice of Major Professor	End of First Semester
Degree Plan Filed with OGAPS	Before Third Semester
Proposal/Preliminary Examination.	By End of Fifth Semester/
Final Defense	By End of Fifth Year

It is expected that all students will adhere to this schedule. Students who do not meet deadlines will be contacted by the Chair of the Faculty of Genetics or the Genetics Office to develop a plan that will ensure that adequate progress is being made. In most cases, a letter from the student's major professor to the Chair of the Faculty of Genetics, explaining why the schedule was not met, and providing a solution will be sufficient for continuation. **If a plan is not developed or if students experience recurring problems in meeting the schedule, registration may be blocked.** In these cases, the Chair of the Faculty of Genetics or the chair of the Student Advisory Committee will meet with the student's major professor will meet.

Graduate studies are demanding. You are no longer an undergraduate. Graduate studies are no less demanding, in the effort on time commitment, than a professional degree. If anything, they are far more challenging since most of your day will not be scheduled for you like in a professional curriculum. Rather, you MUST be self-motivated in order to succeed. You are being paid almost $50,000 per year in salary and tuition to earn your degree, most of this coming from your Major Professor's research grants that have specific deliverables for which they are responsible. If you approach graduate school as an 8-5 job or with the flexibility of an undergraduate, you likely will not finish your degree. Your days should be used for classes and lab work. Any work required for your courses should be done in the evening or weekends and not substituted for lab time. At a minimum, while taking 9 CR of research hours, you are in essence being paid for 47 hours per week (20 hours through your stipend and 27 hours for your research-related education [9 CR research hours x 3 hours for each CR]). Even when not taking research hours, your time in the lab is critical to your success.

Rotations: Although some students may enter grad school already knowing which lab they want to join, all students must complete the three laboratory rotations during their first semester. Rotations acquaint new students with the research programs in their area of interest providing training in methods used in modern genetics, as well as useful contacts in other labs. Rotations are also important to ensure students obtain a feel for the work environments of labs they may consider joining; a lab that sounds interesting on paper may not use a mentoring style that fits your personality. All 3 rotations should be treated seriously as a potential research home. Upon arrival, students receive written information about the research program in each professor's laboratory, and have the opportunity to interact with faculty during short faculty presentations scheduled during orientation. Following the new student orientation, students submit names of three laboratories (to the Genetics Administrator and/or the Chair of the Student Advising Committee) in which they would like to perform the first rotation. Requests for the second and third rotations will be due approximately one week before these are scheduled to begin. Rotating students may enroll for up to 2 hours of credit in Genetics 685. Students have the option to begin rotations during the summer before the fall semester, if desired. The professor, in whose lab the student is rotating, will assign A-F grades along with a written evaluation of the student's work in that lab. Students should review their evaluation with their rotation chair before beginning the next rotation. This information helps the students improve their performance. You will find a schedule of rotation due dates and forms for your rotation lab choices included in Appendix V of this handbook.

Choice of Major Professor: Students will identify a Major Professor by the end of their first full semester, which will allow you to begin research in earnest toward the PhD degree in the second semester. After discussing opportunities with their rotation professors, all students will provide the Genetics Administrator and/or the Chair of the Student Advising Committee a rank order of their choice for major professor using the forms provided in Appendix VI. The Student Advising Committee will match students with a Major Professor based upon both the student and professor’s preferences. If an additional rotation is needed to find an appropriate lab, students can perform this rotation in the spring semester. Occasionally, working equally under the direction of two faculty members can enhance a student's graduate program. To accept a Genetics Student,

the Major Professor must sign the Expectations for Graduate Training and Support form in Appendix II.

Thesis Committee: A Thesis Committee supervises a student's coursework and research, examines a student's progress, and approves all documents required for the PhD degree. The Thesis Committee, chaired by the Major Professor, is the primary source of direction and support for a student's research and academic program. The Thesis Committee should be constituted soon after the choice of Major Professor to provide the student with maximum input on course choices. The Thesis Committee must have at least three members in addition to the Major Professor. At least one member must come from a department outside your "home" department. Your Major Professor MUST be a FULL member of the Faculty of Genetics. This Thesis Committee will approve the degree plan, read and critique the proposal and thesis/dissertation, and administer the preliminary exam and oral defense. Committee selection must therefore be completed before the degree plan is filed. Students should familiarize themselves with the members of their Thesis Committee as soon as possible. You should select committee members that are experts in your research area, so that they can give you useful advice, and potentially write knowledgeable letters of recommendation when you graduate.

Committee meetings: All graduate students are required to have at least one committee meeting each year. A "Thesis Committee Annual Report" form must be submitted to the Genetics Graduate Program Office no later than May of each year. You will find this form in the beginning of the "Appendix VI" section of this handbook. **Failure to do so will result in a registration block for the fall semester.**

Annual Progress Report: All graduate students are required to fill out an electronic annual progress report that describes information on publications, meetings, and presentations in which you have participated.

Degree Plan: The Degree Plan establishes course work and research hours to be completed by a student during graduate study. The courses, which constitute the degree plan, are decided upon by the student in consultation with the Major Professor and Thesis Committee. The minimum total number of hours required on a Ph.D. degree plan is 64 for students entering with a M.S. degree awarded in the U.S. (or its equivalent as determined by the Office of International Admissions). Students entering without a M.S. degree or with an M.S. degree that is not the equivalent of a M.S. in Genetics awarded in the U.S. should have 96 hours on their degree plan. Course requirements are listed in Appendix III of this handbook.

Limitations on the use of undergraduate, seminar, and transfer courses are detailed in the Graduate catalog. The degree plan is filed through an on-line submission process using Howdy, signed electronically by all members of the Thesis Committee, and submitted to the Chair of the Faculty of Genetics for Department Head signature. Student must file a degree plan by the end of their third full semester. **Students failing to meet these deadlines will be blocked from registration.**

Proposal: The proposal describes the research that a student intends to undertake. The Proposal provides a student with the opportunity to plan his/her graduate research project and to become familiar with the literature in that area. Proposals serve to launch a student into a research project, and are thus only effective if completed early in the graduate career. For this reason, proposals should be completed and submitted prior to the end of the fifth full semester. In the proposal, the student describes the rationale for the research project, the objectives of the research to be performed, and outlines the techniques to be used. Proposals must include a standard cover sheet available from the OGAPS website. The proposal is evaluated by the student's Thesis Committee, signed by all members, and submitted to the Genetics office with the cover sheet which will then be sent to the Chair of the Faculty of Genetics for Department Head signature. Proposals that include research with vertebrate animals (including antibody generation in rabbits or mice) must enclose a copy of an approved Animal Use Protocol cover page. The proposal is not a contract to perform the described research, and significant research progress need not be completed at the time of proposal submission. It is instead a mechanism to assist students in clarifying research goals early in their graduate program, to encourage students to

become familiar with the primary literature in their field, to provide students with experience in technical writing, and facilitate research interactions between students and members of their Thesis Committee.

Preliminary Examination: The preliminary examination includes a written proposal, a written exam, and an oral examination in which a Ph.D. student's mastery of his or her field of specialization is tested by the student's Thesis Committee. Students should schedule their preliminary examinations before the end of their fifth full semester of graduate study. You must have current cumulative and degree plan GPR's of AT LEAST 3.00 to be eligible for the exam.

The exam is given no earlier than a date when you are within approximately six credit hours of completion of the formal course work (i.e., all course work on the degree plan except the GENE 681, 684, 690, 691, and 692 courses) or no later than the semester following the completion of the formal course work on the degree plan. The preliminary examination checklist can be found on the OGAPS website.

The written proposal must be given to the student's Thesis Committee no later than 2 weeks prior to the oral exam. The student is responsible for scheduling written exams with each member of their Thesis Committee. Individual members of the Thesis Committee may elect to waive their written exam.

Once all portions of the examination are completed, the Major Professor will report the results of the examination in writing using the proper form within ten working days of the scheduled examination date to OGAPS. Note that this form requires the signatures of all Thesis Committee members. Upon receiving the form OGAPS will verify that all eligibility requirements were met and, if so, record the results of the preliminary exam. If post-review of the exam by OGAPS reveals that eligibility requirements were not met, then the student and the Major Professor will be notified of necessary actions (such as repeating the exam) required to rectify any deficiencies. Upon acceptance of a passing preliminary exam by OGAPS, you will be considered a ***candidate*** for the PhD degree (advanced to candidacy). **After passing the**

required preliminary examination, the student must complete all remaining requirements for the degree within four calendar years. Otherwise, you must repeat the examination.

If the student fails the preliminary examination, there is no obligation for a re-examination. At their discretion, the Thesis Committee (with no more than one member dissenting) may allow one re-examination when adequate time has passed to allow you to address inadequacies emerging from the first examination (normally six months).

Eligibility Requirements that Cannot be Waived:

1. You must be registered for the semester during which you plan to take either the preliminary or the final examination (or in which any portion of the exam may fall).
2. You must have an approved degree plan on file with OGAPS.
3. You must have cumulative GPR of 3.00 or above.
4. You must have a degree plan GPR of 3.00 or above.
5. You must have satisfied English language proficiency requirements (non-native English speakers).
6. You must have given your Thesis Committee a copy of your written proposal **no later** than 2 weeks prior to the oral exam.
7. All committee members must have scheduled or waived the written portion and agreed to attend the oral portion of the exam or have found a substitute. Only one substitute is allowed and it cannot be the Student's Major Professor.

Dissertation:

1. Graduate studies culminate in the dissertation, which describes a student's research and outlines the unique contribution a student has made to expand the frontiers of knowledge.
2. The dissertation describes the research undertaken by a student during graduate study.
3. The content of the dissertation is established by the student in consultation with the Thesis committee.
4. The dissertation should be submitted to the student's Thesis Committee at least two weeks prior to the Final Defense.

5. The dissertation is approved by the student's Thesis Committee and the Thesis Committee may request changes/edits before approving the dissertation.
6. The format of the dissertation is very precisely controlled by OGAPS.
7. Students must refer to the Thesis Manual and follow it exactly, or risk having their manuscript rejected by the Thesis Clerk.
8. The Thesis Manual is available at the OGAPS website.
9. After the committee has approved the dissertation, the student submits the dissertation to the OGAPS office, which will check for format errors and may require several rounds of edits.
10. It is important that you NOT WAIT until the last minute to submit your dissertation to OGAPS.

Publications: In publications authored by a graduate student in the Genetics Interdisciplinary Program, the student's affiliation should be listed as the "Interdisciplinary Graduate Program in Genetics." If desired, the student's home department can be listed as an additional affiliation.

Final Defense: The final defense provides the student's Thesis Committee with the opportunity to evaluate a student's understanding of his or her research. The final defense consists of a formal public seminar of results presented by the student announced two weeks in advance. The presentation is followed by an oral examination of the candidate by the Thesis Committee. Final changes to the Dissertation are discussed at this time. The final defense must be held within four years of advancement to candidacy. <u>For all students, the defense should be scheduled at least four weeks prior to the OGAPS deadline for submission of dissertations to the Thesis Clerk.</u> This will allow adequate time for revisions and two weeks for the Chair of the Faculty of Genetics signature.

REQUIREMENTS FOR THE PHD DEGREE

Peer-Reviewed Publication Requirement: Students are required to have at least one first-author peer-reviewed publication accepted before scheduling the Final Defense. The Doctor of Philosophy degree is awarded based upon the generation of new knowledge, which in the field of genetics is demonstrated by publication in peer-reviewed literature. If a paper is under revision, an exception to schedule the Final Defense can be requested from the Chair of the Faculty of Genetics.

MINIMUM CREDIT HOURS

All students must remain in continuous enrollment throughout their graduate careers. This means that you must enroll for at least one credit hour during every regular semester (Fall and Spring) while you are working towards your degree. Continuous enrollment is required regardless of a student's source of support. All students using university facilities are required to enroll for a minimum of one credit hour.

Spring and Fall: All graduate students receiving Assistantships are required to register for a minimum of 9 hours during the Fall and Spring semesters throughout your graduate career.

Summer: All graduate students receiving Assistantships are required to enroll for a minimum of 6 semester credit hours during the summer. The requirement is 3 semester credit hours during any one Summer session in which you are enrolled or 6 semester credit hours during the two Summer sessions in which you are employed.

If you are unsure about which GENE 691 (research) section in which you should register (for any semester), please contact the Genetics office at 979-458-2284. Students who anticipate graduating early may need to register for more hours per semester to have enough credits to graduate. For the summer session, the maximum number of GENE 691 hours in each 5-week term is 6, and in each ten-week term is 10. So, in order to register for twelve hours, you may register for two 6 hours, 5-week terms.

Full-time status: Graduate students receiving Assistantships are considered full-time students if registered for a minimum of 9 semester credit hours during a fall or spring semester, 6 semester credit hours during a 10-week semester, or 3 semester credit hours during a 5-week term. The Genetics program is exempt from the 100-credit hour cap.

Minimum GPR: OGAPS calculates two GPRs: a Graduate GPR comprising all courses taken and a Degree Plan GPR comprising just courses on your degree plan. It is expected that both a student's Graduate GPR and Degree Plan GPR will remain at or above 3.00 during his or her graduate career. When the GPR drops below 3.00, a student will be given a one semester probationary period to bring it back to 3.00. If this is not achieved, the student must meet with the Major Professor to determine whether the student should remain in the Genetics Graduate Program. If the student has not chosen a Major Professor at this point, the Chair of the Faculty of Genetics will consider scholastic probation (see below) based on evaluations from "rotation" professors and grades at that point. A student will not be allowed to take the Preliminary Exam, advance to candidacy or give the Final Defense if either GPR is below 3.00.

Scholastic Probation: After a student has become scholastically deficient, he/she may obtain a conditional permission for a student to continue in the degree program. For Genetics graduate students, this permission is granted by the Chair of the Faculty of Genetics. The student's record while on probation determines whether he or she shall be cleared to register as a regular student, be granted a continuation on probation, or be suspended, dismissed or terminated from the University for Scholastic Deficiency. The graduate student may be informed in writing of the terms of probation and may be required by the Major Professor or in consultation with the Chair of the Graduate Advisory Committee or the Chair of the Faculty of Genetics to register for a prescribed schedule of courses. Hour and GPR requirements shall be made consistent with the student's progress toward graduation. The specified hours and grade points are considered to be a minimum only. In addition to, or in lieu of, course work, a graduate student may be required to demonstrate progress toward completion of the degree by completing specified examinations and/or specified milestones in research or other independent study leading to completion of the dissertation. A graduate student will remain on probation until the terms of the probation are

accomplished AND the Graduate Advisory Committee and Chair of the Faculty of Genetics recommends that the probation be lifted. A graduate student blocked or suspended for deficient scholarship may appeal such a decision through the Graduate Appeals Panel, following the procedures defined on the OGAPS website.

Teaching Requirement: All students are required to participate as a Teaching Assistant (TA) for two semesters, typically during the second and third semesters. All students regardless of source of funding must complete this requirement, as it is an important aspect of professional training. Previous teaching experience at the University level can be used to fulfill this requirement, at the discretion of the Chair of the Faculty of Genetics. Students with this type of experience should submit a written description of the course(s) they taught, what duties were required, and the name and telephone number of the faculty member in charge of the course.

All incoming graduate students must complete TA training. Texas A&M University provides a mandatory TA training called Teaching Assistant Institute (TAI). All new graduate students will be registered and must attend in December, 2020. Additionally, Genetics TA's must register for one credit of GENE 697 (Teaching Genetics Labs) every semester they TA.

Department Assignment: Students admitted to the Genetics Graduate Program and who have been hired as a research assistant, or offered a Regents fellowship through the Faculty of Genetics, will be considered a Genetics major through the Department of Biochemistry and Biophysics. After completing your rotations and choosing a Major Professor, will need to complete the Petition form on the OGAPS website to change your department to that of your major Professor but keeping GENETICS as your major. Your Major Professor, the Chair of the Faculty of Genetics, and the Department Head of Biochemistry and Biophysics need to sign this document. You will submit a copy to the Genetics office and then submit the original and any required copies to OGAPS.

Deadlines: Proposals and dissertations with Thesis Committee signatures must be submitted to your Faculty Advisor or Chair of the Faculty of Genetics for approval at least two weeks prior to the OGAPS submission deadline. It is important not to wait until the last possible minute to

take care of this – consider that faculty members may be out-of-town of unavailable, and these are extremely important documents that are required for your career to progress.

FINANCIAL SUPPORT

Formally, there are three forms of support for graduate students in our program: Graduate Assistant Teaching (GAT), Graduate Assistant Non-Teaching (GANT), Graduate Assistant Research (GAR) and Fellowships. GAT and GANT support is provided by from state-appropriated teaching funds. GAR support is provided by individual faculty and is funded by research grants. Fellowship support may be provided by the University, Federal or other sources and is awarded on a competitive basis.

In order to receive support, students must register for a minimum of 9 credit hours for the fall and spring semesters. For summer support, registration in a minimum of 3 credit hours per five-week summer session, or 6 credit hours for the 10-week session is required.

APPENDIX I

Expectations of Genetics Graduate Students

At all times, before and after passing the preliminary exam, a student must remain in good standing to continue in the graduate program. Graduate students are expected to:

1. Make reasonable progress in their research. Graduate students are expected to actively work on their research project unless they notify their advisor and officially take vacation, medical, or family leave.

- When students are not actively engaged in running experiments or analyzing data, they should be reading the literature or drafting or editing papers, abstracts, reviews or proposals.
- Sometimes projects don't work as expected, resulting in unpublishable data. Students are expected to work with their advisor and Thesis Committee to assess the risk of their projects. Risk can be actively managed many ways, including by planning experiments to determine as rapidly as possible whether or not a new project is viable, by setting performance deadlines (if we haven't solved the problem by this date, we need to change approaches), or by developing alternate, less risky "Plan B" projects in parallel with the risky project.

Timeline for research deadlines:

Year	Semester	Task
1	Fall	Rotations + selection of major professor
	Spring	Join research lab (4th rotation may be required)
		Select a Thesis Committee by end of the spring semester (May 31st)
	Summer	Thesis Committee must meet by end of the summer semester (May 31st)
		Student should present a draft degree plan to their committee.
		The degree plan must be submitted AND approved by the committee by the end of summer.
2	Summer	Prelim must be scheduled by end of July
		Preliminary Exam must occur by end of the summer semester
3	Fall	Preliminary Exam must be completed by the end of fall semester[1]
	Spring	Thesis Committee must meet by end of the summer semester
4 +	Spring	Thesis Committee must meet by end of the summer semester
5	Spring	Thesis Defense[2]

[1] If necessary, a student may submit a request for additional time to complete their preliminary exam in writing to the Genetics Postdoctoral Administrator and the Chair of the 1st Year Student Thesis Committee. This request must be approved by 3/4 majority vote of the 1st Year Student Thesis Committee.

[2] OGAPS Rule: The defense must occur within 4 years after the preliminary exam (end of fall semester of 7th year) or the preliminary exam must be repeated.

It is expected that all students will adhere to this schedule. Students who do not meet deadlines will be contacted by the Chair of the Faculty of Genetics to ensure that adequate progress is being made. In most cases, a letter from the student's major professor to the Chair of the Faculty of Genetics, explaining why the schedule was not met, will be sufficient for continuation. **If students experience recurring problems in meeting the schedule, registration may be blocked.** In these cases, the Chair of the Faculty of Genetics and the student's major professor will meet.

2. Provide access to all data and procedures. According to the Texas A&M Administrative Procedure
15.99.03.M1.03 http://rules-saps.tamu.edu/PDFs/15.99.03.M1.03.pdf "research data conducted on a Texas A&M University project" belongs to Texas A&M University. This includes, but is not limited to:

- Research notebooks and electronic files need to be clear and complete, and the PI and other lab members need to have access to this information.
- All data needs to be permanently and safely stored in the laboratory at all times. For instance, data cannot be stored only in one place (e.g., on a student's personal computer) and then removed from the laboratory.
- Data collected by a Genetics Graduate Student at other institutions needs to be added to the lab paper or electronic files upon return to Texas A&M University.

3. Behave professionally and respectfully to their colleagues. A student's success in graduate school depends, in part, on the help and support (e.g., training and protocols, critical evaluation of data, troubleshooting assistance) provided by their PI, lab mates, and other colleagues. Students are expected to behave professionally and respectfully toward their colleagues at all times. Behaviors that foster a hostile workplace are not only forbidden by university policy, but they also erode the social network that helps students succeed.

4. Comply with university policies. In addition to specific policies mentioned above, these policies include but are not limited to:

- The TAMU Student Conduct Code http://student-rules.tamu.edu/rule24.

- Compliance with all regulatory policies applicable to the student's research, and completing the required training courses in a timely manner.
- TAMU rules, policies and Standard Administrative Procedures are available at http://rules-saps.tamu.edu/TAMURulesAndSAPs.aspx.

Dissolving a student/PI relationship

We understand that conflicts can arise between students and faculty, and the Genetics Student Advisory Committee will work with a student in good standing to resolve these conflicts or help the student change laboratories. In the best interest of the student, we will not support multiple lab changes.

A student and/or a PI may decide to dissolve their relationship. The procedure in cases such as these follows:

The student or PI terminating the relationship should first contact at least one of the following people:

- The Genetics Program Coordinator and Graduate Student Advisor, Dr. Ximena Paez: paez@tamu.edu
- The Chair of the Genetics Student Advisory Committee, Dr. Sarah Bondos: bondos@tamu.edu
- The Chair of the Faculty of Genetics, Dr. David Threadgill: dwthreadgill@tamu.edu

The student and their Major Professor should then meet to discuss the situation. If needed, members of the Genetics Student Advisory Committee may either advise the instigator prior to this discussion or participate in this discussion.

The Program encourages students to make a thoughtful decision about their permanent lab and put sincere effort into their project, since leaving a lab has the potential to be detrimental to the student's career. There are four possible outcomes from terminating a student/PI relationship: (i) the student may join another lab and still pursue a Ph.D., (ii) the student may graduate with a

coursework master's degree, (iii) the student may graduate with a thesis master's degree, or (iv) the student may leave the university without a degree.

(i) If the student is in good standing and wants to pursue a degree in another lab, then the student should immediately begin actively seeking another research mentor. Faculty in the program are listed on the Genetics website at http://genetics.tamu.edu/faculty. Members of the Genetics Student Advisory Committee, the Chair of the Genetics program, or the Genetics Administrative Postdoctoral Fellow (paez@tamu.edu) may know of labs actively seeking new members. Students are responsible for contacting faculty and arranging interviews if the faculty is considering taking new students.

Often the student is unpaid during this transition.

- Some faculty may be able to provide salary support while the student finishes ongoing experiments and organizes data, and the student may seek a new lab during this time. *However, this is unusual, and a student should not depend on this support being available.*
- In rare cases a student may TA to support their salary while they seek a new lab. TA positions are generally only available just before the spring and fall semesters begin. In general, TAships are awarded first to students in that department, then to students in Interdisciplinary Programs like Genetics who are members of labs in that department, and then finally to students changing labs.
- The Genetics program does not have funds available to support the salary, tuition, or fees of students during this transition period.

Consequently, it is important to find a new lab as quickly as possible, keeping in mind that it is vital that the lab be a good match for the research interests and personality of the student. The student must find a new research lab by the end of that semester.

(ii) If the student wants to leave TAMU with a coursework (Non-thesis option) master degree, then he or she needs to fill out a Degree Change form through https://ogsdpss.tamu.edu/. Then, new committee is selected with the assistance of the Genetics Administrative Office. A new degree plan is submitted using forms available at the Document Processing Submission System

website (https://ogsdpss.tamu.edu/). To get a NTO master's degree, students must have accumulated 36 hours of coursework. If the student has passed his/her prelim, then he/she has probably accumulated enough coursework hours. The student must apply for a degree change as soon as possible given that the University graduation deadlines are very early, soon after the semester begins. Deadlines can be found at http://registrar.tamu.edu/Academic-Calendar and http://registrar.tamu.edu/Our-Services/Curricular-Services/Catalog. If the deadline for the current semester has already passed, the student can apply for a degree to be awarded the following semester. A detailed list of steps for graduating with a Master's or Doctoral degree, including links to all the required forms can be found at http://ogaps.tamu.edu/Buttons/Resources-for-Degree-Completion. Please note that there are fees associated with graduation.

(iii) The student may elect to graduate with a thesis master's degree. In addition to accumulating 32 hours of coursework, a thesis master's degree candidate must write and defend a master's thesis. To write a thesis, the student must have accumulated enough data to generate a compelling, well-supported story. Generally, the student's previous PhD committee will continue to serve as the master's thesis committee. Thesis master students must submit a Proposal Approval Form to OGAPS no less than 20 days prior to their defense. The student's degree plan must also have been approved no less than 90 days before their Master's Thesis defense. Consequently, it is important to quickly complete both of these forms.

(iv) If a student decides to leave the university without a degree, he/she needs to make sure that the Genetics Program Coordinator has been notified of their decision.

In all cases, when departing a lab for any reason, students need to remember to make available all notebooks, electronic records, and data to the laboratory and PI. The student must also make sure all products created by the student (e.g., animal lines, DNAs, proteins, chemicals) are clearly labeled and the remaining lab members know their location. All research notes, data, records, and products are owned by the University.

Involuntary Termination from the Interdisciplinary Graduate Program in Genetics

Students can be involuntarily dismissed from the Genetics Graduate Program for a number of reasons, including but not limited to:

1) Failure to remain a student in good standing.

2) Failure to meet Expectations for Genetics Graduate Students (see above).

3) Students must be actively making progress toward their degree. If they leave their original lab, they must find a new lab by the next registration deadline, so they can register for GENE 691. If the student feels like this could be a problem, they should either contact the Chair of the Genetics Advisory Committee or the Program Coordinator as soon as possible.

4) An unsatisfactory grade from the student's PI.

5) Other events not explicitly covered that call into question a student's ability to complete the necessary work for a PhD degree.

6) Other events not explicitly covered that call into question the student's ability to interact with their colleagues in a respectful and professional manner.

If any of these situations should occur, the student's case will be reviewed by the Genetics Advisory Committee, who can vote for termination of the student from the program with a 3/4 majority.

APPENDIX II

Expectations of Genetics Faculty

Members of the Faculty of Genetics are expected to support the program by participation in at least a subset of the following activities:

1. Attending Genetics Seminars
2. Hosting a speaker for the Genetics Seminar
3. Participation in one of the program committees, a list of which can be found at https://genetics.tamu.edu/about-governance
4. Participation in social events organized by the GGSA.
5. Mentoring a Genetics Graduate Student. Remember that faculty that accept a Genetics graduate student into their lab must first sign the Expectations for Graduate Training and Support form on the next page.
6. Teaching a graduate level GENE course
7. Participating in Genetics student recruitment
8. Serving on the thesis committee of a Genetics graduate student.

Faculty of Genetics – 2020 Expectations for Graduate Student Training and Support

The Genetics IDP is a premiere graduate program that recruits the most talented high potential graduate students in life sciences at TAMU. The program has the following expectations of all faculty members accepting new Genetics PhD students into their laboratories:

1. The faculty member will honor the fact that the student was recruited by the efforts and funds of the Genetics IDP, and is a student in the Genetics IDP. Consequently, the faculty member will refrain from encouraging or advising the student to transfer to any other TAMU sponsored graduate program for any purpose.

2. The faculty member will support the new student's salary until at least August 31, 2025, starting June 2021 at a level equal to or higher than the current minimum stipend stipulated in the student acceptance letter for the Genetics IDP ($30,000-$32,000/year).

3. The faculty member will cover the full cost of tuition and fees (including those for summer semesters) for the student beginning with the summer semester of 2021 until at least August, 31, 2025.

4. The student may earn a stipend by accepting teaching assistant assignments, if available, in addition to the two semester teaching requirement of the program (second semester, while being paid by the program, and third semester, paid by the PI). However, the program strongly discourages teaching assistant assignments in excess of 2 semesters during year 3 to 5, to ensure that students are able to complete their research project in a timely manner.

5. If a student is given a teaching assistantship, the faculty member will supplement the teaching assistantship to ensure the student's salary does not drop below that in the student's offer letter.

6. Breaking any part of this agreement may preclude the faculty member from taking Genetics students into their laboratory in the future and may led to being removed from the Faculty of Genetics.

Faculty name _____

Faculty signature _____ Date: _____

APPENDIX III
COURSE REQUIREMENTS FOR the PhD DEGREE in GENETICS

Required Courses (17 CR)

- GENE 603 Genetics (3 CR)
- GENE 608 Critical Analysis of Genetic Literature (2 CR)
- Computational genetics (3 CR)**
    - BIOL 651 Bioinformatics
    - BIOL 683 Experimental Design in Biology
    - STAT 604 Special Problems in Statistics Computations and Analysis
    - STAT 646 Statistical Bioinformatics
    - STAT 657 Advanced Programming using SAS
    - VIBS 613 Evolutionary Bioinformatics
    - GENE 689 Command Line Skills
- GENE 681 Seminar (3 CR)
- GENE 682 Seminar Presentation (1 CR)
- GENE 685 Research Rotations (2 CR)
- GENE 697 Teaching Genetics Labs (2 CR)
- Research ethics (1 CR) options:
    - • BICH 689, Section 601 Application of Scientific Values in Daily Research Practice

Elective Courses (9 CR, spread across at least three competency areas*)

Molecular Genetics

BICH 631 Biochemical Genetics

BICH 656 RNA Biology

BICH 673 Gene Expression

BIOL 609 Molecular Tools Biology

BIOL 635 Plant Molecular Biology

ENTO 689 Engineering Vector Populations

GENE 648 Molecular Evolution

VTPP 676 Genetics & Molecular Toxicology

Quantitative and Population Genetics

ANSC 628 Animal Breeding

ANSC 638 Prediction Genetic Merit

ANSC 689 Advanced Quantitative Genetics

EEBL 605 Population & Quantitative Genetics

EEBL 606 Phylogenetics & Comparative Biology

ESSM 689 Quantitative Methods in Ecology, Evolution and Biogeography

GENE 612 Population Genetics

GENE 613 Quantitative Genetics

GENE 638 Prediction of Genetic Merit

SCSC 641 Plant Breeding

SCSC 642 Plant Breeding II

WFSC 624 Dynamics of Populations

Statistics and bioinformatics

BICH 661 Advance Genome Annotation Ontology

BIOL 647 Digital Biology

BIOL 651 Bioinformatics

BIOL 683 Experimental Design Biology

GENE 689 Command Line Skills

GENE 689 Metagenomics

SCSC 660 Experimental Designs in Agriculture

MPHY 624 Biostatistics

STAT 604 Special Problems in Statistics Computations and Analysis

STAT 646 Statistical Bioinformatics

STAT 651 Statistics in Research I

STAT 652 Statistics in Research II

STAT 657 Advanced Programming using SAS

VIBS 613 Evolutionary Bioinformatics

WFSC 670 Excel Biometry

Organismal genetics

ANSC 624 Mammalian Developmental Genetics

ANSC 639 Bacterial Genomics

BICH 675 Plant Biochemistry & Genomics

BIOL 606 Microbial Genetics

BIOL 610 Evolution

BIOL 611 Developmental Genetics

ENTO 628 Arthropod Genomics & Gene Expression

GENE 677 Genes and Diseases

MPIM 663 Molecular Biology of Animal Viruses

MSCI 630 Pathogenesis of Human Disease

VTPB 613 Mammalian Genomics & Bioinformatics

Genomics

ANTH 672 Ancient Genetics

BICH 650 Genomics

BICH 661 Genome Annotation with Ontologies

BIOL 650 Genomics

EEBL 607 Evolutionary Genomics

GENE 620 Cytogenetics

GENE 629 Applied Animal Genomics

GENE 654 Analysis of Complex Genomes

GENE 655 Analysis of Complex Genomes-Lab

GENE 689/BIOL 689 Bacterial Genomics

VTPP 638 Analysis of Genomics Signals

• Courses with the number 689 are 'special topics'. Many of these are held regularly but have not yet received a course number.

**Approved courses meeting requirements. Alternative courses must be approved by the Genetics Curriculum Committee.

Typical Curriculum*

1st Year

Fall (9 CR)
GENE 603 (3 CR) Genetics
GENE 608 (2 CR) Critical Analysis of Genetic Literature
GENE 681 (1 CR) Seminar
GENE 685 (2 CR) Research Rotations
BICH 689-601 (1 CR) Ethics

Spring (9 CR)
Computational genetics (3 CR)
Genetics elective (3 CR)
GENE 681 (1 CR) Seminar
GENE 697 (1 CR) Teaching Genetics Labs
GENE 691 (1 CR) Research

Summer (6 CR)
GENE 691 (6 CR) Research
Submit Degree Plan

2nd Year

Fall (9 CR)
Genetics elective (3 CR)
Genetics elective (3 CR)
GENE 691 (2 CR) Research
GENE 697 (1 CR) Teaching Genetics Labs

Spring (9 CR)
GENE 682 (1 CR) Seminar Presentation (15 min presentation)
GENE 691 (8 CR) Research

Summer (6 CR)
GENE 691 (6 CR) Research

3rd Year

Fall (9 CR)
GENE 691 (9 CR) Research
Preliminary Exam

Spring (9 CR)
GENE 691 (9 CR) Research

Summer (6 CR)
GENE 691 (6 CR) Research

4th Year
Fall (9 CR)
GENE 681 (1 CR) Seminar
GENE 691 (8 CR) Research

5th Year
Fall/spring as needed
GENE 682 (1 CR) Seminar Presentation (defense)
GENE 691 (8 CR) Research
Thesis Defense

Total hours for PhD

96 CR plus completion of dissertation
64 CR plus completion of dissertation if previously completed MS degree

* Additional elective courses may be taken. 9 credit hours of genetics electives are required.

APPENDIX IV

Procedure for Approving New GENE Electives

The revision of the GENE PhD curriculum around competency areas provides substantial flexibility for individual degree programs. Students are required to have 9 CR of electives spread across three of the four competency areas (Molecular Genetics, Quantitative and Population Genetics, Organismal Genetics, and Genomics and Bioinformatics). All courses should have a substantial research literature component. Courses meeting the criteria can be added to the list of qualified courses. The process is:

1) A GENE faculty member nominates a course that fulfills a specific competency area to the Chair of the Curriculum Committee. If Genetics does not have a Sitting Curriculum Committee, the request is sent to the Chair of the Genetics Program.
2) The nomination should include the syllabus and a justification for how the course fulfills a specific competency area.
3) The justification and syllabus will be forwarded to members of the Curriculum Committee, who will have 10 working days to vote for or against inclusion of the nominated course in the GENE curriculum. Any member can also request tabling the request for discussion at a Curriculum Committee meeting that should occur within 30 days of the request to table. If there is not a sitting Curriculum Committee, steps 3-5 will be skipped and the request will be reviewed by the GENE Executive Committee.
4) A simple majority vote of the Curriculum Committee is required to recommend the course to the GENE Executive Committee for inclusion in the GENE curriculum.
5) For courses not approved, the nominating GENE faculty member may request a meeting of the Curriculum Committee to present the course for open discussion, which will be followed by another vote by the Curriculum Committee.
6) The GENE Executive Committee will vote for or against inclusion of courses recommended by the Curriculum Committee in the GENE curriculum within 10 working days of receiving the recommendation. A simple majority is required to approve the course.

APPENDIX V

Schedule of Lab Rotations
Fall 2020

1st Rotation	
Monday, Aug. 24th	10 AM Deadline for submitting preference list for 1st rotation
Fri, Aug. 28th	1st rotation assignments announced
Mon, Aug. 31st	1st rotation begins
Fri, Sept 25th	1st rotation ends

2nd Rotation	
Mon, Sept. 21st	10 AM Deadline for submitting preference list for 2nd rotation
Fri, Sept. 25th	2nd rotation assignments announced
Mon, Sep. 28th	2nd rotation begins
Friday, Oct. 23rd	2nd rotation ends

3rd Rotation	
Mon, Oct. 19th	10 AM Deadline for submitting preference list for 3rd rotation
Fri, Oct. 23rd	3rd rotation assignments announced
Mon, Oct. 26th	3rd rotation begins
Friday, Nov. 20th	3rd rotation ends

Permanent Lab	
Mon, Nov. 16th	10 AM Deadline for submitting preference list for permanent laboratory
Friday, Nov. 20th	3rd rotation ends
Friday, Nov. 20th	If possible, permanent lab assignment announced
	Students enter new lab

Students follow the employee holiday schedule as listed below	
Thanksgiving	November 26h – 27th, 2020
Christmas	December 23rd, 2020 – January 1st, 2021
MLK, Jr. Day	January 18th, 2021
Spring Break	March 15th-19th, 2021
Memorial Day	May 31st, 2021

Lab Rotations in the Genetics IDP
Instructions for 2020

As an integral part of the process of selecting a research advisor, you will undertake three laboratory rotation periods in your first semester. The rotations offer exposure to different fields of genetics. They also allow you to experience the research environment of a specific laboratory before making a commitment to do doctoral research in that laboratory.

How to choose a laboratory

The first consideration in choosing a laboratory should be the scientific activities in the particular laboratory, but it is also important to inquire about the future availability of laboratory space and **stipend support**. To get an idea of the research activities in each laboratory, it is important to attend the Genetics Faculty talks, during orientation, as well as to talk with faculty one-on-one about their work, potential projects and stipend sources. Talking with students in the lab will help you understand whether the PIs mentoring style matches your needs.

Once you begin a laboratory rotation

During your laboratory rotations, spend as much time in the lab as you can, and talk with all lab members. This will help you determine whether the environment in the laboratory, including interactions with the professor and with other research personnel, is desirable for your doctoral work.

Grading

The faculty will submit written reports of your laboratory rotations to the Genetics Graduate Student Advisory Committee. (See Rotation Student Evaluation – Faculty Response Form). These reports are based on such elements as time commitment, enthusiasm, perseverance, and interactions with laboratory personnel, and are considered by faculty in determining whether a student will be invited to join the laboratory. Because the Ph.D. is primarily a research degree, productive and interactive lab rotations are extremely important in setting the course of your career as a research scientist. Even if you decide not to join a particular lab, you should continue to work hard on the rotation project. You will learn, and you will establish a good reputation by

doing so. Students are also given an opportunity to evaluate the rotation laboratory and PI (see Rotation Faculty Evaluation – Student Response Form).

Duration

Each laboratory rotation period is approximately 5 working weeks, with the first beginning at the start of the fall semester. The exact dates are indicated on the attached *Schedule of Lab Rotations* as in the *Graduate Student Handbook.*

Requirements: The steps for submitting the first laboratory rotation preference list are given below and MUST be followed.

1. Attend the Faculty Research Talks during new student orientation week and at additional scheduled times (if appropriate).

The Faculty Research Talks are a great opportunity for you to learn more about the different research opportunities available in the department and to make a wise decision about lab rotations.

2. Set up meetings with *at least* five faculty members to discuss completing a laboratory rotation in their laboratory during the fall semester.

Begin to set up these meetings as soon as possible. Immediately after the faculty member has given his/her "faculty research talk" is a good time. Remember, if you wait too long, the faculty may not have the time to meet with you before your preference list is due.

3. Meet privately with the faculty members.

Failure to meet with the faculty members delays the laboratory rotation assignment process, not only for yourself, but also for your classmates as well. The graduate academic advisor calls the faculty members on your list to verify that you have actually met with them.

4. Have each of the five faculty members with whom you meet sign a *Faculty Confirmation* form (included in your orientation packet)

When a faculty member signs the *Faculty Confirmation* form, it does NOT commit him/her to taking you into his/her laboratory for a laboratory rotation. It simply states that you met with the faculty member to discuss completing a laboratory rotation in the laboratory.

5. Submit your *Preference List* of three faculty names (no less) in RANKED ORDER for the FIRST ROTATION, along with *Faculty Confirmation* forms to Tamara Ospina-Vega (109A BioBio) or tov@tamu.edu.
The deadline for submitting your <u>first</u> rotation preference list is 5 pm., Tuesday August 25, 2020.
Your *Preference List* must be submitted by the deadline. **NO EXCEPTIONS. NO EXCUSES**. The *Preference List* forms are included in the handbook, in your orientation package, and extra forms are available from Dr. Paez.

The Genetics Student Advisory Committee will assign rotations according to the preference lists insofar as possible, subject to the approval of the faculty involved. A laboratory assignment list will be distributed by email before the rotation begins.

6. A new Preference List with the names of *three* faculty members in RANKED ORDER is to be submitted before the **<u>second rotation</u>**, and again before the **<u>third rotation</u>,** according to the schedule in Appendix V.

7. Before the second and third rotations, you are strongly encouraged to meet with additional faculty members to discuss rotation opportunities in those laboratories. You are also <u>required</u> to attend any additional faculty talks. It is very likely that the initial list of preferences you submitted before the first rotation will change, as you learn more about the program and more about research opportunities at Texas A&M.

APPENDIX VI

ADDITIONAL FORMS

Forms are available on-line at our Genetics Website at:

https://genetics.tamu.edu/current-students/resources/

- Genetics Faculty Confirmation Form
- Preference List for lab Rotation
- Preference List for Final Lab Assignment
- Rotation Evaluation by Faculty
- Student Rotation Evaluation
- Ph.D. Thesis Committee Annual Report
- Preliminary Examination Checklist
- Research Proposal Form
- OGAPS Guidelines to Writing your Thesis
- Request and Announcement of the Final Examination
- Written Dissertation Approval Form

***OGAPS Forms are also available on-line at:**

http://ogaps.tamu.edu/Buttons/Forms-Information

Additional forms unique to the genetics program are provided in this section.

Ph.D. Thesis Committee Annual Report
Program of Genetics
TEXAS A&M UNIVERSITY

Student: _____ Date Entered the Ph.D. Program _____

Meeting Date _____ Previous Meeting Date _____

Prelim Date (if applicable) _____ _____

Committee Chair _____ Co-Chair _____
(If applicable)

Name of Reporting Committee Member _____

Journal Club(s) in which student regularly participates:

Summarize your specific recommendations to student:

Assess student's overall progress toward completion of the Ph.D. degree (circle):

Excellent Satisfactory Borderline Unsatisfactory

Additional comments:

The Chair of the Committee will collect completed forms at the time of the meeting and copies will be provided to members of the committee, the student, and the Graduate Programs Office of Genetics. Note: Failure to file an Annual Report with the Graduate Programs office will result in a block of registration.

GENETICS FACULTY CONFIRMATION

LAB ROTATION 2020

_____ has met with me to discuss completing a laboratory rotation in my lab.

_____ _____

Name of Faculty Member Signature of Faculty Member

GENETICS FACULTY CONFIRMATION

LAB ROTATION 2020

_____ has met with me to discuss completing a laboratory rotation in my lab.

_____ _____

Name of Faculty Member Signature of Faculty Member

PREFERENCE LIST FOR FIRST LAB ROTATION

These are choices for the first lab rotation, NOT for all three rotations. A new preference list must be submitted before each rotation.

Students are strongly encouraged to talk to more than one professor for each rotation in case the first or second choice cannot be arranged.

The rotation preference list is to be turned in to the Gene Administrator (Bio/Bio 109A). Lab rotation assignments are made in consultation with Principle Investigators.

Student Name: _____

Lab Choice for First Rotation

1. _____
2. _____
3. _____

Any additional information that would help with rotation assignments:

Student signature:_____

PREFERENCE LIST FOR SECOND LAB ROTATION

These are choices for the second lab rotation, NOT for all three rotations. A new preference list must be submitted before each rotation.

Students are strongly encouraged to talk to more than one professor for each rotation in case the first or second choice cannot be arranged.

The rotation preference list is to be turned in to the Gene Administrator (Bio/Bio 109A). Lab rotation assignments are made in consultation with Principle Investigators.

Student Name: _____

Lab Choice for Second Rotation

4. _____

5. _____

6. _____

Any additional information that would help with rotation assignments:

Student signature:_____

PREFERENCE LIST FOR THIRD LAB ROTATION

These are choices for the third lab rotation, NOT for all three rotations. A new preference list must be submitted before each rotation.

Students are strongly encouraged to talk to more than one professor for each rotation in case the first or second choice cannot be arranged.

The rotation preference list is to be turned in to the Gene Administrator (Bio/Bio 109A). Lab rotation assignments are made in consultation with Principle Investigators.

Student Name: _____

Lab Choice for Third Rotation

7. _____

8. _____

9. _____

Any additional information that would help with rotation assignments:

Student signature: _____

PREFERENCE LIST FOR FINAL LAB ASSIGNMENT

Student Name: _____

Ranked Choices for Lab Assignment

1. _____
2. _____
3. _____

Any additional information that would help with lab assignments (for instance, if you are similarly interested in two of the faculty):

Student signature: _____

Rotation Student Evaluation Faculty Response Score your response to each statement as follows: 1 poor; 2 fair; 3 average; 4 good; 5 excellent
1. The objectives of the project were clearly explained to the student.
2. The student appeared to have knowledge in this area.
3. The student was well prepared.
4. The student adequately answered questions proposed to him/her.
5. The student was able to discuss recent developments in the field
6. The student could apply concepts to demonstrate their understanding.
7. The student appeared to set high standards for himself/herself.
8. The student's understanding of the subject appears to have been increased during the rotation.
9. The student was informed of his/her progress
10. The student's progress in the lab seemed of a high priority for the student
11. I was satisfied with the student's accessibility within the lab.
12. I would recommend this student to one of my colleagues.

Student Name _____ Rotation Dates: _____

Grade for Rotation (A - F): _____

Would you consider taking this student into your lab for a thesis? Yes ___ No ___
(*This does not commit you to taking this student).* (Please check one)

Advisor's Signature: _____

Advisor's Name (print): _____

(Submit electronically to Tamara at tov@tamu.edu or by campus mail to MS 2128)

Rotation Faculty Evaluation Student Response Score your response to each statement as follows: 1poor; 2 fair; 3 average; 4 good; 5 excellent
1. The objectives of the project were clearly explained to me.
2. I felt well prepared for this rotation.
3. The professor adequately answered questions I proposed to him/her.
4. The professor discussed recent developments in the field.
5. The instructor had students apply concepts to demonstrate understanding
6. The professor sets high standards for students.
7. My understanding of the subject appears to have been increased.
8. I was informed of my progress in the lab by the professor.
9. My progress in the lab seemed of a high priority to this professor.
10. I was satisfied with the professor's accessibility within the lab.
11. The professor increased my interest in this area.
12. I would recommend this professor to one of my friends for a rotation.

Faculty Name: _____ Rotation Dates: _____

Would you consider joining this professor's lab for a thesis? Yes ___ No ___
(*This does not commit you to joining this lab).* (Please check one)

Student's Signature: _____

Student's Name (print): _____

(Submit electronically to Tamara at tov@tamu.edu or by campus mail to MS 2128)