Biology Department Graduate Student Handbook 2022-2023

Byron Adams, Department Chair Seth Bybee, Graduate Coordinator Gentri Glaittli, Graduate Program Manager

Brigham Young University Department of Biology 4102 LSB Provo, UT 84602 801-422-2582

Please carefully read over the information found within this handbook. Graduate students will be held to the deadlines and requirements found within. The handbook is updated each year and
therefore should be carefully reviewed annually for changes to policies and procedures.
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ORGANIZATION OF THE DEPARTMENT

The Department of Biology is 1 of 7 departments in the College of Life Sciences. Within the department there are 25 full-time faculty and 4 full-time staff.

DEPARTMENT OF BIOLOGY STAFF

Stephanie Burdett. *Biology 100 Coordinator*. Coordinates the teaching of all Bio 100 sections. If you would like to TA or teach a section of Bio 100, work with your advisor and Stephanie. 2056B LSB. 801-422-4339. <a href="mailto:stephanie.com/stephani

Doreen Cabrera. *Dry/Wet Lab Manager.* Supports all faculty labs. Manages and maintains shared equipment and orders supplies. Works to ensure lab safety, security, compliance of lab policies, and lab cleanliness. 4050B LSB. 801-422-2203. doreencabrera1@gmail.com

Nicole Cuthbert. *Undergraduate Academic Advisor/Biology Office Manager*. Works with all faculty and undergraduate students in the Department of Biology. See her regarding any questions on classroom scheduling and adding course sections. 4104 LSB. 801-422-7389. nicole.cuthbert@byu.edu

Marie Emmett. Kauwe Lab Executive Assistant. Works with Kauwe lab and department chair on various projects. Bioinformatics lab. 80-422-8545. <u>marie_emmett@byu.edu</u>

Gentri Glaittli. Biology Graduate Program Manager. Works with all graduate students and their advisors. Meet with her for any questions regarding requirements, deadlines, forms, policies, and procedures. 4101 LSB. 801-422-7137. gentri@byu.edu

Jacqueline Rino. Evolution Ecology Lab Manager. Manages the EEL lab. 4017 LSB. 801-422-3120. jacqueline.rino@byu.edu

Jim Wooten. Biology Financial Manager. Works with all faculty and students regarding financial transactions. Any financial or travel questions should be directed to him. 4106 LSB. 801-422-4412. jim wooten@byu.edu

DEPARTMENT OF BIOLOGY FACULTY

*Faculty members with an asterisk are approved to be graduate committee chairs and committee members. Those without asterisks can be committee members.

*Byron J. Adams. Comparative phylogeography; evolution of virulence; host-pathogen coevolution; soil ecology; molecular systematics and evolution; speciation and species concepts; food web assembly; biodiversity; ecosystem functioning. 4127 LSB. 801-422-3132. byron adams@byu.edu

- *Elizabeth G. Bailey. Gender gaps in biology education; reciprocal peer tutoring; course structures that promote growth mindset; cumulative assessment; integration of math and biology; membrane biophysics. 4146 LSB. 801-422-0871. <u>liz bailey@byu.edu</u>
- *Matthew Bailey. Bioinformatics, predictive biomarkers, big-data visualization, statistical model development, predicting the best drug for a patient's tumor based on its unique molecular vulnerabilities. 2120 LSB. 801-422-6873. matthew.bailey@byu.edu
- *Mark C. Belk. Terrestrial and aquatic ecology; ecology of fishes; native fish conservation; fisheries; burying beetles; parasites; life-history responses to biotic and abiotic perturbations; predation and competition in size-structured populations; adaptation of organisms to local environments in terms of habitat use, coloration, and acoustic signals. 4023 LSB. 801-422-4154. mark belk@byu.edu
- ***Seth M. Bybee**. Entomology; evolutionary biology; systematics; bioinformatics; phylogenetics; dragonflies; visual evolution. 4057 LSB. 801-422-3152. seth.bybee@byu.edu
- *Shawn M. Clark. Museum curation of insect collections; insect systematics. 3101E MLBM. 801-422-3815. shawn_clark@byu.edu
- *Richard A. Gill. Department Chair. Global change biology; community responses to climate variability; ecosystem ecology; plant physiological ecology; evolution; biogeography. 4101A LSB. 801-422-3856. rgill@byu.edu
- *Blaine D. Griffen. Behavioral ecology; physiological ecology; population and community ecology; marine biology and ecology; conservation biology; extinction; zooplankton, crabs, shrimp, polar bears. 2121 LSB. 801-422-5930. blaine griffen@byu.edu
- *Jaime L. Jensen. Biological science education; evolution education and acceptance; effective pedagogical strategies to increase scientific reasoning skills; pedagogical manipulations; pedagogical preparations; inquiry teaching; educational assessment. 4059 LSB. 801-422-6896. jamie.jensen@byu.edu
- *Jerald B. Johnson. Evolutionary ecology; ecological speciation; life history evolution; evolution of mating and reproductive strategies; behavioral ecology; biological statistics; phylogeography; natural history and molecular systematics of desert fishes and tropical freshwater fishes. 4033 LSB. 801-422-4502. jerry.johnson@byu.edu
- *Leigh A. Johnson. Plant systematics; taxonomy; phylogenetic inference; species delimitation; phylogeography; morphology; evolution; conservation genetics; population genetics. 4058 LSB. 801-422-5241. leigh johnson@byu.edu
- *Robert L. Johnson. Plant systematics and taxonomy; floristics; plant-insect interactions. 3115A MLBM. 801-422-7094. robert_johnson@byu.edu
- *John S. K. Kauwe. BYU-Hawaii University President. Bioinformatics; genetics of human disease; relationship between genotype and phenotype; genetic risk factors for Alzheimer's disease;

- prevention, diagnosis, and genetic basis of rheumatic heart disease; population genetics of aquatic organisms in the Western United States. 4102 LSB. 801-422-2993. kauwe@byu.edu
- *Roger T. Koide. Physiological, population, and community ecology of plants and associated fungi, including mycorrhizal and endophytic fungi, and bacteria in natural and agricultural ecosystems; gut microbiomes of vertebrates and insects; agricultural ecology; global change biology. 4031 LSB. 801-422-6650. rogerkoide@byu.edu
- *Steven D. Leavitt. Fungal symbioses; evolutionary diversification; molecular systematics and phylogenomics; role of species interactions within an evolutionary context; fungal symbioses; lichens; holobionts; biomonitoring and climate change; conservation; biogeography and diversity in arid or extreme habitats; scientific education; outreach. 4143 LSB. 801-422-4879. steve leavitt@byu.edu
- *C. Riley Nelson. Natural history; entomology; freshwater ecology; taxonomy; systematics; ecology; evolution; insect biodiversity in aquatic and desert habitats; environmental stewardship; biomonitoring; development of field guides; popularization of science; science education. 2119 LSB. 801-422-1345. rileynelson@byu.edu
- *Samuel H. Payne. Bioinformatics; cancer biology; proteomics; protein function. 4029 LSB. 801-422-6652. sam_payne@byu.edu
- *Steven L. Peck. Spatial processes in ecology and population biology from both applied and theoretical perspectives, specifically in understanding how spatial dynamics influence the spread of insecticide resistance; the effect of gene flow of evolution and speciation; philosophy and history of biology; biomathematics; simulation modeling; philosophy of simulation; evolution and philosophy; evolution and theology; bioethics. 4145 LSB. 801-422-4145. steven-peck@byu.edu
- *Stephen R. Piccolo. Bioinformatics; genomics; human disease (especially cancers); medicine; data science; transcriptomics. 4056 LSB. 801-422-7116. stephen_piccolo@byu.edu
- *Russell B. Rader. Freshwater ecology; evolutionary biology; processes that determine stream and wetland community structure; ecology and evolution of biological invasions; spatial and temporal variation in stream drift; trout-invertebrate interactions; wetland bio assessment; restoration; conservation. 4025 LSB. 801-422-9159. russell_rader@byu.edu
- ***Perry G. Ridge**. Bioinformatics; computational biology; genetics; human disease. 4126 LSB. 801-422-7564. perry.ridge@byu.edu
- Joshua A. Stowers. Biology teaching. 2122 LSB. 801-422-0873. josh stowers@byu.edu
- *Clinton J. Whipple. Genetic mechanisms that determine plant morphology; evolution of plant development; focus on grasses including agronomically important traits in cereals such as maize, barley, and rice. 4027 LSB. 801-422-9293. whipple@byu.edu
- *Michael F. Whiting. Life Sciences Museum Director. Entomology; bioinformatics evolution; systematics; phylogeny of insects based on molecular and morphological evidence with emphasis

on reconstructing the insect tree of life; computational phylogenomics; molecular evolution of insect vision; deciphering early patterns of insect diversification. 4142 LSB. 801-422-5651. michael whiting@byu.edu

Edward R. Wilcox. DNA sequencing and instruments. 4046A LSB. 801-422-3647. <u>edward_wilcox@byu.edu</u>

To see more information about the above faculty, please see https://biology.byu.edu/faculty-staff.

GRADUATE PROGRAM

DEGREES OFFERED

Graduate degrees offered in the Department of Biology are a MS in Biology, MS in Biological Science Education, and PhD in Biology. There is no teacher certification program in our Biological Science Education master's program, but certification is possible through Utah's Alternative Routes to Licensure (ARL) program.

GENERAL INFORMATION

The guidelines in this handbook have been prepared for graduate students in the Department of Biology and must be used in conjunction with those contained in the Graduate Studies Policy Handbook and the graduate section of the General Catalog. Graduate students must stay informed about changes made to guidelines each year at both the department and university level. It is ultimately the student's responsibility to be in compliance with all department and university regulations. Students will be required to sign and submit a contract each year stating that they are familiar with the current requirements.

HONOR CODE STATEMENT

Brigham Young University and other Church Educational System institutions exist to provide an education in an atmosphere consistent with the ideals and principles of The Church of Jesus Christ of Latter-day Saints. That atmosphere is created and preserved by a community of faculty, administration, staff, and students who voluntarily commit to conduct their lives in accordance with the principles of the gospel of Jesus Christ and who strive to maintain the highest standards in their personal conduct regarding honor, integrity, morality, and consideration of others. By accepting appointment, continuing in employment, being admitted, or continuing class enrollment, each member of the BYU community personally commits to observe these Honor Code standards approved by the Board of Trustees "at all times and in all things, and in all places" (Mosiah 18:9):

- Be honest.
- Live a chaste and virtuous life, including abstaining from any sexual relations outside a marriage between a man and a woman.
- Respect others, including the avoidance of profane and vulgar language.
- Obey the law and follow campus policies.
- Abstain from alcoholic beverages, tobacco, tea, coffee, vaping, and substance abuse.
- Participate regularly in Church services (required only of Church members).
- Observe Brigham Young University's <u>Dress and Grooming Standards</u>.
- Encourage others in their commitment to comply with the Honor Code.

Whether on or off campus or between semesters, all students are expected to abide by the Honor Code, which includes (1) the <u>Academic Honesty Policy</u>, (2) the <u>Dress and Grooming Standards</u>, and (3) the applicable <u>Residential Living Standards</u> (refer to institutional policies for more detailed information). All students must be in good Honor Code standing to graduate, to receive a diploma, and to have the degree posted.

Students who are members of The Church of Jesus Christ of Latter-day Saints must fulfill their Church duties, attend Church meetings, and abide by the rules and standards of the Church on and off campus.

Students who are not members of The Church of Jesus Christ of Latter-day Saints are also expected to maintain the same standards of conduct. They are encouraged to participate in services of their preferred religion.

ECCLESIASTICAL ENDORSEMENT

All enrolled continuing graduate students are required to obtain a Continuing Student Ecclesiastical Endorsement for each new academic year. Students must have their endorsements completed, turned in, and processed by the Honor Code Office before they can register for fall semester or any semester thereafter. To avoid registration delays, endorsements should be submitted to the Honor Code Office by March 15th. Here is a link to the online endorsement system: https://endorse.byu.edu

UNIVERSITY DEVOTIONALS

Attendance at university devotionals and forums is expected during the duration of the graduate program.

APPLICATION AND ADMISSION

INFORMATION

Our admissions criteria for graduate students coincide with the criteria currently published in the BYU Graduate Catalog, as well as the Graduate Council's Principles and Characteristics of Graduate Education. Pursuant to this, the following basic guidelines are used:

- a. All applicants are required to have a minimum cumulative undergraduate GPA of a 3.0 from either a regionally accredited university in the United States, or a comprehensive GPA of a 3.0 from an equivalent university outside the university. GPAs from international institutions will be calculated by a credential evaluation.
- b. No graduate candidate can be accepted unless he or she has a faculty member in the department who is willing to serve as the committee advisor to that student. The faculty member must be within the Department of Biology and approved for graduate faculty status (see previous list of Department Faculty) according to the department and college guidelines.

ACCEPTANCE CRITERIA

Acceptance is based on a balanced consideration of several areas including:

- a. GPA (cumulative) for completed undergraduate degree. Coursework will be analyzed by the department based on all classes taken. Successful candidates typically have an undergraduate GPA of 3.5 or better.
- b. English proficiency for international applicants as assessed through one of the acceptable English proficiency tests (CAE, E3PT, IELTS, or TOEFL).
- c. Each candidate is required to submit 3 letters of recommendation from associates who have some understanding of the applicant's abilities in relationship to the requirements of the graduate program. Preference will be given to those with a scientific background and/or those with advanced degrees with whom the candidate worked closely.
- d. Strong consideration will be given to those candidates with professional experience in the field of biology whether it is work, internships, or research. This experience could include special projects that resulted in publication and/or presentations at professional meetings.
- e. A clearly defined statement of intent. The statement of intent should include areas of research interest as well as research ideas, career goals, and a preferred advisor.
- f. No student can or will be accepted unless he or she has a faculty member in the department who is willing to serve as the committee advisor to the student. Applicants are required to contact faculty in the department *prior* to application.

g. There is no "Provisional Status" category for the department; students are either qualified to be admitted or will be denied. Those requiring an exception to university guidelines will be accepted on a Provisional Status at the university level.

APPLICATION DEADLINE

- a. Graduate student applications are evaluated once per year for admission into the Fall semester.
- b. Applications are due through the BYU Graduate Studies website no later than January 15th. Applications are then reviewed in February, and acceptances are generally sent out by early March.

REQUIREMENTS FOR ADMISSION

- a. A complete application must be submitted through the BYU Graduate Studies website no later than January 15th of each year. A complete application will include the following components:
 - a. The filled out online application.
 - b. Self-reported final degree GPA
 - c. Desired Advisor: State a preferred advisor. The applicant should make contact with their desired advisor prior to submitting their application.
 - d. 3 Letters of Recommendation. Preference is given to letters that are written by those with a scientific background and/or those with advanced degrees with whom the candidate worked closely.
 - e. Statement of Intent: The statement of intent is a document that is usually 1 to 3 pages, double-spaced, and clearly defines areas of research interest as well as research ideas, educational objectives, career goals, and a preferred advisor. The applicant should articulate why they have selected the specific program, identify strengths they would bring to the program, and how they envision using the degree. It should be a polished, well written document.
 - f. Resume (optional)
 - g. \$50 Application Fee paid
 - h. All unofficial transcripts submitted. Students must upload an unofficial transcript or academic record for each institution attended (even if a degree hasn't been received yet) when completing the online application. If recommended for admission, official transcripts will need to be sent to Graduate Studies. Accepted international applicants must initiate and complete the IERF foreign credential evaluation report.
- b. Applicants must agree to maintain the University's Honor Code.
- c. Applicants must receive an <u>ecclesiastical endorsement</u>.
- d. Applicants must have at least a baccalaureate degree from an accredited U.S. university or the equivalent from an international university (a 4- or 5-year program) before matriculation. The Graduate Studies office must receive an official transcript showing that the degree has

- been awarded. Study at BYU cannot continue past the first semester of a graduate program without verification of the bachelor's degree.
- e. Applicants who are applying to the PhD program and are currently finishing a MS degree must have completed the MS degree by start of fall semester. If the MS degree is not completed by this time, the admissions offer will be withdrawn. The applicant can reapply for the following admissions cycle.
- f. Applicants must receive at least a 3.0 undergraduate cumulative GPA. All classes taken after the BS degree will not be counted in this undergraduate GPA but will be considered along with the application. Applicants with a GPA below a 3.00 may be provisionally admitted.
- g. For applicants with English as a second language, they must submit the minimum required scores for one of the following acceptable English Proficiency Exams (applicants with scores below the minimum required *may* be provisionally admitted):
 - a. CAEC1 Advanced
 - i. Minimum score of 180 (or grade C)
 - b. E3PT
 - i. Overall minimum score of 79 (with minimum subscores of 21 in Speaking, Reading, and Listening, and a minimum subscore of 16 in Writing)
 - c. IELTS
 - i. Overall minimum band score of 7.0 (minimum band subscores of 6.0 in each module)
 - d. TOEFL (paper-based)
 - i. Minimum score of 580
 - e. TOEFL iBT (internet-based test)
 - i. Overall minimum score of 85 (with minimum subscore of 22 in Speaking, and minimum subscores of 21 in Listening, Reading, and Writing)

Note: CAE, E3PT, IELTS, and TOEFL scores must be less than 2 years old at the time of enrollment.

*Students applying to more than one program on campus must submit a separate and complete application, including fee, for each program. Additional submission of scores is not required.

MATRICULATION

If admitted applicants are currently enrolled in a bachelor's or master's program at time of application submission, then it is expected that they will complete said program before starting a MS or PhD program in our department. If they do not complete their program before the Fall admission date, then they will need to reapply for our next admissions cycle.

DEFERRING THE GRADUATE PROGRAM

 Admission generally can't be deferred, but applicants may reapply for a subsequent admissions cycle. Applicant materials have limited validity. A new application will need to be submitted to be considered for another admissions cycle.

- Students may only defer their initial enrollment for the following reasons:
 - Medical
 - Military deployment
 - Missionary service
 - o International student visa issuance delays which are not the student's fault
- The deferment period can't exceed more than 4 semesters (spring and summer terms combined count as 1 semester).
- During the deferment period, students will be excused from minimum registration requirements.
- Admitted applicants will need to submit the appropriate <u>Deferment Form</u> (GS Form 13, 13B, 13C, or 13D) before the start of the first semester for which they would have enrolled.
- The following stipulations apply:
 - Students must still complete the degree program in the required amount of time as stated by the university (5 years for MS; 8 years for PhD). This time limit begins to toll from the first semester the student was originally recommended for admission, not from the semester that they return after deferment.
 - Students can't enroll in or attend any college or university during the deferment period.
 - Admitted applicants who defer for medical reasons must obtain department approval.
 - o Admitted applicants who defer for missionary service will need to obtain a new ecclesiastical endorsement from their mission president.
 - o Students must return for the semester or term indicated on the Deferment Form.
 - Students may continue with the same research project (if still available) and with the support of the same major advisor and committee (as long as those individuals are at the university and are willing).
 - Granting a deferral is for enrollment only and does not imply the deferral of scholarships, fellowships, or assistantships. Financial support is not guaranteed for graduate students who wish to defer unless the department so specifies.
 - o Those who do not abide by the above procedures will incur a \$600 nonrefundable fee to re-enroll.

MOVING FROM MS TO PHD

If a graduate student currently in a MS program within the Biology Department would like to be in the PhD Biology program, then they will need to submit a new personal statement and unofficial transcript for their current degree. These materials will need to be submitted to the graduate program manager by the department application deadline of January 15th for consideration for admission to the PhD program in the Fall of that same year. Submitting an official application through Graduate Studies and paying the \$50 fee is not required. Application materials previously submitted for the MS program will be considered as well (letters of recommendation, etc.). Being accepted into the PhD program may be contingent upon completing the MS degree first. Students will be notified by early March of the admissions committee's decision.

Students who are accepted to transition from the MS to PhD program will be considered a new graduate student by the department. Program requirements will be due starting from the Fall semester they begin the PhD program (the deadlines will be the same as those for incoming PhD students). However, the committee chair ultimately decides the deadlines for the student; it may make more sense for the student's progress to have earlier deadlines for program requirements. The committee chair has the final say. The time limit for degree completion does reset; students will have 8 years from transitioning into the PhD degree to complete their degree.

REGISTRATION REQUIREMENTS

FIRST SEMESTER

- New graduate students are required to enroll in at least 2 credit hours during the first semester or term in which they are admitted. The department encourages new students to enroll in at least 6 credits hours during their first semester.
- Required courses:
 - o Bio 503—Research Orientation (1.0): Required for MS and PhD students, unless they have already received a MS degree.
 - o Bio 691R—Graduate Seminar Series (0.5): MS students are required to take this class for 2 semesters, and PhD students must enroll for 4 semesters.

RECOMMENDED REGISTRATION

- It is recommended that graduate students should register for no more than 12 credit hours in a semester or 6 credit hours in a term due to the rigor of graduate level courses.
- In order to complete the MS or PhD program timely, it is recommended to register for 8 to 9
 credits per semester (fall and winter) until all coursework has been completed. Then
 maintain minimum registration (described below) by registering for thesis/dissertation credits.

MINIMUM REGISTRATION REQUIREMENT

- Graduate students must register for and complete with acceptable grades at least 6 credit hours during each academic year (September-August) to avoid being automatically dropped from the graduate program.
- Grades of E, D, UW, NS, or I are not acceptable, and audited classes do not count towards this requirement.
- Once coursework has been completed, thus reducing the credit load, students should typically register for at least 6 thesis/dissertation credits per academic year to maintain active status.
- Those who do not meet minimum registration requirements will be dropped from active status and must apply for readmission. Students must submit an <u>Application to Resume</u> <u>Graduate Study</u> and pay a \$600 nonrefundable re-enrollment fee. Only one Application to Resume Graduate Study can be approved for an individual during his/her program.
- Students must register for at least two credit hours during any semester or term in which they
 use university facilities or consult with faculty, including when they have any committee
 meeting, or have their final defense. The number of graduate credit hours for which a
 student registers must, in the judgment of the faculty advisor, accurately reflect the

- student's involvement in graduate study and use of university resources such as libraries, laboratories, and computer facilities.
- When registering for credits in a given semester or term, graduate students may not register for fewer than 2 credits in Fall/Winter or 1 credit in Spring/Summer.

DOCTORAL RESIDENCY REQUIREMENT

 Doctoral students must satisfy a residency requirement by registering for 6 credit hours each in two consecutive semesters. The credits must be coursework on the Program of Study.
 Spring and Summer terms are grouped together as one semester when fulfilling this requirement.

FINAL SEMESTER

- All students are required to enroll in at least 2 credit hours during the semester or term they graduate, or to enroll in at least 1 credit if graduating in June. There are no exceptions.
 - o Fall: 2 hours
 - o Winter: 2 hours
 - o Spring: 1 hour
 - o Summer
 - 1 hour Spring & 1 hour Summer, OR
 - 2 hours Spring, OR
 - 2 hours Summer
- Students wishing to graduate in December must have a current ecclesiastical endorsement (even if all requirements are satisfied prior to the start of the Fall semester). Ecclesiastical endorsements are due in March for the following academic year.

ENROLLMENT STATUS

- U.S. Citizens and Permanent Residents
 - Have full-time status when they are registered for at least 8.5 credits in a semester or at least 4.5 credits in a term.
 - Have part-time status when they are registered for 4.5 to 8.0 credits in a semester, or between 2.5 and 4.0 credits in a term.
- International Students
 - o Must be registered as full-time in order to meet immigration requirements. Must register for at least 9.0 credit hours in both fall and winter semesters.
 - International students are typically automatically granted a vacation in spring and summer terms, so they aren't required to register for any credits during spring or summer terms.
 - After international students have completed all of their coursework, then they can be granted "done with coursework" status. They will then only need to register for 6 thesis/dissertation credits per academic year.

REQUEST FOR GRADUATE FULL-TIME STATUS

If students need full-time status (to delay student loans, to be eligible for a grant, fellowship, scholarship, etc.) and if they meet the below eligibility requirements, then they can submit a petition to Graduate Studies to be granted full-time status.

To be eligible for petitioned full-time status, students:

- Must have completed all coursework on Program of Study (excluding thesis/dissertation credits).
 - Rare exceptions to this may be granted (a required course won't be offered by the department for another year, but all other coursework is complete, etc.).
- Must be working full-time (contributing 40 or more hours per week) on their thesis/dissertation.
- Must be showing satisfactory progress.
- Must register for at least 2 thesis/dissertation credits per semester or 1 thesis/dissertation credit per term.

Students are not eligible for full-time status if they:

- Are newly admitted.
- Don't have an approved committee and Program of Study.
- Are requesting verification for future semesters for which registration is not yet possible.
- Are an international student on an F-1 and J-1 visa and don't have the approval of the International Student and Scholar Services Office.
- Are employed full-time.

A petition must be submitted for each semester/term students would like full-time status granted. The petition should be submitted no later than the first day of the semester/term. Contact the graduate program manager to begin the petition process.

If a student is on federal aid, there may be a credit limit for the aid. If this is the case, avoid registering for excess credits by submitting a request for graduate full-time status each semester.

ELIGIBILITY FOR ON-CAMPUS EMPLOYMENT

- U.S. Citizens and Permanent Residents
 - o Graduate students must be enrolled in at least 2 credit hours in a semester in order to be employed on campus (including to be hired for all RA and TA positions).
 - Graduate students enrolled for the upcoming fall semester may work during spring and summer terms without enrolling for courses; however, FICA taxes will be deducted from students' paychecks if they are not enrolled in at least 1 credit hour during Spring and Summer terms.
- International Students

- International students must be enrolled in 9 credit hours each semester to be eligible for on-campus employment. They do not need to be enrolled during spring and summer to be eligible.
- Once international students have received done with coursework status, then they
 will only need to be registered for at least 2 credits per semester in order to be hired
 on-campus.
- o International students are exempt from paying FICA taxes.

ELIGIBILITY FOR CAMPUS SERVICES

• Graduate students must be registered for at least 2 credits per semester or 1 credit per term to be eligible for campus services, including student housing, intramurals, use of student activity facilities (RB and Smith Fieldhouse resources), graduate parking permits, discount admission to sporting and cultural events, counseling services, and UTA bus passes.

COURSEWORK REQUIREMENTS

MASTER'S PROGRAM (MS)

- 30 credit hours: 24 coursework hours and 6 thesis hours
- Required courses:
 - o Bio 503-Research Orientation: 1.0 credit
 - o Bio 691R-Graduate Seminar: 1.0 credit (two semesters)
 - Bio 699R-Master's Thesis: 6.0 credits
- Coursework credits should be 500-level or above; however, up to 9 credits of 300- to 400-level undergraduate classes can be applied to the degree.
- No more than a total of 10 hours from non-degree, senior, and/or transfer credit can be applied toward the MS program. No independent study courses can be used.

DOCTORATE PROGRAM (PHD)

- 54 credit hours: 36 coursework hours and 18 dissertation hours
- Required courses:
 - Bio 503-Research Orientation: 1.0 credit (optional if have already completed a MS degree)
 - o Bio 691R-Graduate Seminar: 2.0 credits (four semesters)
 - o Bio 799R-Doctoral Dissertation: 18.0 credits
- No undergraduate coursework may apply to the doctoral Program of Study (100-400 level).
- Up to 18 hours of master's coursework may apply towards the required 36 coursework hours.
 The advisory committee must approve all transfer courses from the MS transcript. All transfer hours must be within the field of study.

THESIS/DISSERTATION CREDITS

- Registration for thesis/dissertation credits (Bio 699R/799R) should be reasonable and concurrent with work on the thesis or dissertation.
- It is inappropriate to register for large amounts of thesis/dissertation credits (e.g., 6 thesis credits or 9 dissertation credits in 1 semester). It is generally recommended for students to register for **no more than 1 to 3 thesis/dissertation credits per semester/term**. To register for more than 3 credits in a semester, please clear it with the graduate program manager.
- Students should consult with their advisor to determine an appropriate and reasonable credit enrollment.
- Since the department nor Graduate Studies nor the university requires graduate students who are US citizens or permanent residents to be registered full-time (9 credits per semester), it is unnecessary and also inappropriate to use thesis/dissertation credits to reach 9 credits

- per semester, unless there is a specific need outside of the university to be registered full-time (financial aid, loan deferment, etc.).
- When registering for thesis/dissertation credits, students must register for at least 1.0 credit (taking 0.5 thesis/dissertation credit per semester/term is not permitted).
- Thesis/dissertation credits generally should not be taken during the first year in the program.
- Advisors should only assign a T grade (indicating coursework in progress) to thesis/dissertation credits until the thesis or dissertation has been successfully defended.
 Once a committee chair enters Pass for the final defense in the online GradProg system, T grades should automatically change to P grades.

TRANSFER CREDITS

- MS students can transfer no more than 7 credit hours. PhD students can transfer no more than 13 credits.
- Must be a graduate level course to transfer to a graduate program; no independent study.
- Must have received a B grade or higher; pass/fail credit is non-transferable.
- Credit cannot already have been applied to another degree.
- Must be approved by student's graduate committee
- No international credits can be transferred without certification by examination.

SENIOR CREDITS

- MS students may apply up to 10 credits taken prior to completing their bachelor's degree if the credits pertain to their MS area of study.
- This credit cannot have applied to the baccalaureate degree (it cannot have been applied towards the requirements for the major, minor, general education, or total required credits).
- Must be 300-level or higher.
- Must be approved by student's graduate committee.

ACCEPTABLE GRADES

Graduate students need to receive a letter grade of a C- or higher in order for a course to apply towards their Program of Study; no D credit may apply toward a graduate degree. Students whose Program of Study GPA falls below a 3.0 (a C average) will not be allowed to graduate and may be dismissed from their graduate program.

AUDITED COURSES

If a student would like to audit a class, then they need to obtain written approval from their advisor, the graduate coordinator, and the department chair. The desired audit class should apply towards the student's field of study, or it shouldn't interfere with the student's progress. In requesting permission to audit a class, include how much the extra cost to the department would be if

approved. If the student will already be registered full-time, then the audited class would not be an additional cost. Note that it costs the same to register for a class as it does to audit a class. An alternative option is to ask the professor of the course if you can sit in on the class.

PROGRAM REQUIREMENTS

REQUIREMENTS OVERVIEW & DEADLINES

**See all posted graduation deadlines for the semester or term in which you would like to graduate.

MS DEGREE

- 1. Program of Study and Selection of Advisory Committee
 - End of 1st semester
- 2. Prospectus and Oral Presentation to Committee
 - End of 2nd semester
- 3. Oral Examination
 - End of 3rd semester (typically after all coursework is completed)
- 4. Defense of Research
 - When research is 75-90% complete (usually beginning of 4th semester)
- 5. Application for Graduation
 - 1st month of final semester (see posted graduation deadlines)
- 6. Submission of Thesis Draft to Committee
 - At least 2 weeks prior to Final Defense
- 7. Ready for Defense Certification and Scheduling of Final Defense
 - At least 1 week prior to Final Defense
- 8. Thesis Final Defense
- 9. Online Submission of Electronic Thesis to Graduate Studies

PHD DEGREE

- 1. Program of Study and Selection of Advisory Committee
 - End of 2nd semester
- 2. Prospectus and Oral Presentation to Committee
 - End of 3rd semester
- 3. Qualifying Examination (Grant Proposal, Literature Review & Oral Exam)
 - End of 4th semester (typically after all coursework is completed)
- 4. Defense of Research
 - When research is 75-90% complete (usually end of 4th year or beginning of 5th year)
- 5. Application for Graduation
 - 1st month of final semester (see posted graduation deadlines)
- 6. Submission of Dissertation Draft to Committee
 - At least 2 weeks prior to Final Defense
- 7. Ready for Defense Certification and Scheduling of Final Defense

- At least 1 week prior to Final Defense
- 8. Dissertation Final Defense
- 9. Online Submission of Electronic Dissertation to Graduate Studies
- 10. Survey of Earned Doctorates

Do not plan to hold any committee meetings or any examinations at any time when school is not in session. If you wish to schedule a committee meeting for any program requirement during spring or summer terms, you are responsible for making sure that your committee members are available to attend.

PROGRAM OF STUDY AND SELECTION OF ADVISORY COMMITTEE

The Program of Study is a carefully designed plan that lists all courses required for the degree program and designates the graduate committee. It may also include a minor. If a minor is declared, one committee member must be from the minor department.

SELECTION OF ADVISORY COMMITTEE

The first step in completing the Program of Study is to select and invite advisory committee members.

MS PROGRAM

- Must have a minimum of 3 committee members (including the committee chair); there is typically not more than a total of 4 committee members.
- Usually a minimum of 2 members will be from the Biology Department, but at least 2 will need to have graduate faculty status at BYU (which includes the committee chair).
- One of the committee members can be a petitioned member (meaning they are unaffiliated with BYU or don't have graduate faculty status at BYU).
- If a second petitioned member is desired, this will first need to be discussed with the graduate coordinator.
- Due by the end of the 1st semester.

PHD PROGRAM

- Must have a minimum of 4 committee members (including the committee chair); there is typically not more than a total of 5 committee members.
- Usually a minimum of 2 members will be from the Biology Department, but at least 2 will need to have graduate faculty status at BYU (which includes the committee chair).
- One of the committee members can be a petitioned member (meaning they are unaffiliated with BYU or don't have graduate faculty status at BYU).
- If additional petitioned members are desired, this will first need to be discussed with the graduate coordinator.
- Due by the end of the 2nd semester.

SELECTION PROCEDURE

- 1. Members of the advisory committee must be cleared with the major advisor and be contacted individually and invited to be on the committee by the student.
- 2. Students then finalize the invitation by adding the committee members on "GradProg" (an online graduate progress tracking system), and then clicking the "Send Invite" button next to each name. For detailed instructions, review the "GradProg Student Instructions."
 - a. If a BYU faculty member has graduate faculty status, then they will be available to add as a committee member on the dropdown menu in GradProg. For a faculty member to qualify for graduate faculty status, they, at minimum, will need to have full-time status (not be adjunct, etc.).
- 3. The committee members will then receive an email and can accept the invitation by clicking a link.

PETITIONED MEMBERS

Desired committee members who are unaffiliated with BYU ("external committee members) or who are at BYU but don't have graduate faculty status must be approved by a Petition for Exception, which will need to include the following:

- Reason(s) for including a member from outside the university or a BYU faculty member who
 doesn't have graduate faculty status (e.g., what their specific qualifications are, what they
 bring to the committee that is unique, what expertise they have that no one else at BYU
 has).
- Confirmation that the petitioned member is available and willing to attend all committee meetings (via phone/video conference if not local).
- Documentation for how the member will be funded for travel to BYU if they aren't local (they are REQUIRED to be physically present for one of the following committee meetings: the final defense, defense of research, oral exam, or prospectus).
- A current CV of the petitioned member. The CV will be evaluated by Graduate Studies against the college standards for awarding graduate faculty status.

Contact the graduate program manager to begin the petition process.

The department will cover the travel expenses to fly an external committee member out for 1 committee meeting (having them be physically present for either the defense of research or final defense is recommended).

SPECIAL MEMBERS

Students can also submit a petition for exception for a BYU employee who doesn't have graduate faculty status to serve as one of their committee members. If approved, that person will be added to the committee as a "special member." Special members don't count towards the required number of committee members (except for adjunct faculty). To request a special member, follow the same procedures outlined above for requesting an external member.

PROGRAM OF STUDY

Once the committee has been formed, the next step is to receive their approval on the elective courses chosen to complete the required credits.

- Coursework must meet the total credit hour requirements (30 total hours for MS students, 54 hours for PhD students) and must follow the requirements outlined above in the Credit Requirements section.
- Must include these required courses:
 - Bio 503-Research Orientation: 1.0 credit (required for MS and PhD students who don't already have a MS degree)
 - Bio 691R-Graduate Seminar:
 - MS: 1.0 credit (2 semesters)
 - PhD: 2.0 credits (4 semesters)
 - o Bio 699R-Master's Thesis: 6.0 credits
 - o Bio 799R-Doctoral Dissertation: 18.0 credits
- Choosing the elective courses must be completed with the assistance of the major advisor. Seek their recommendations for courses that best match your field of study. The student together with their committee determine best topics, breadth, depth of research, etc., to help the student reach their goals.
- For a list of graduate courses offered by the Biology Department, see the Courses Offered section in this handbook.
- Courses offered outside of the Biology Department can be taken. Students commonly take courses offered through Statistics, Plant & Wildlife Sciences, Microbiology & Molecular Biology, and Cell Biology & Physiology.
- Must be completed at the end of the 1st semester for MS students and 2nd semester for PhD students.

PROCEDURE

- After discussing courses and making a plan with their advisor, students then create their Program of Study by using GradProg.
- 2. Courses can be added to GradProg before the committee has been fully formed (and members have accepted their invitations).
- 3. Click the "Add New Course" button to begin adding elective courses. For detailed instructions, review the GradProg Student Instructions.
- 4. After all courses have been added (making sure they total the required credit number), click the "Submit for Committee Member Approval" button.
- 5. Committee members will then receive an email requesting their approval.
- 6. Once all members have submitted their approval, the Program of Study will be reviewed by the graduate program manager, who will submit final approval.

CHANGE OF PROGRAM OF STUDY OR ADVISORY COMMITTEE

PROGRAM OF STUDY OR ADVISORY COMMITTEE MEMBER CHANGE

Changes to the Program of Study are made using GradProg.

- Courses can be added or removed under the Program of Study milestone. Any change will need to be approved by the advisory committee. Once changes have been input, re-click the "Submit for Committee Member Approval" button.
- After a student adds or removes a class after the Program of Study has already been approved, an email message will be sent to the committee to approve the change. Once the entire committee has approved the change, the graduate program manager will be notified that the program of study needs to be approved again.
- To make a change to the advisory committee (add, remove, or switch a member), contact the graduate program manager. Students should not seek to remove a committee member without first discussing this change with their advisor and said committee member.

CHANGING COMMITTEE ADVISOR

Each student accepted into the Department of Biology graduate program is expected to have spoken with a desired advisor about research interests, possible projects, lab space, and funding for the student and project. As such, each item must be carefully evaluated to avoid a negative impact on both the student and advisor.

Due to the impact that changing the advisor may have, the following steps must be followed:

- 1. Student must contact his/her current advisor and discuss in detail the original agreements and ramifications in changing advisors.
- 2. Both parties must reach an agreement regarding if and when such a change can be made, so that the faculty advisor's needs and the student's progress are not adversely impacted.
- 3. If a change is necessary, the student and the current advisor should meet with the new advisor and discuss the details regarding the change.
- 4. A new agreement should be made with the new advisor regarding research, projects, lab space, and funding.
- 5. Once all parties agree to such a change, a memo signed by all three parties is sent to the graduate program manager and all members of the advisory committee.
- 6. The request must be approved by the graduate coordinator before a change can be made.

PROSPECTUS

The Prospectus of Research should be 4 to 6 pages of relatively loose research ideas.

- Ideally it should read like a grant proposal. It is encouraged to also submit the grant
 proposal: being able to show that you have been able to receive your own funding will
 help with future employment.
- There are no specific formatting criteria, but the main sections should include the following:
 - o **Title**: Must contain good "retrieval" words.
 - Introduction: Include justification and objectives.
 - Methods: Experimental design, description of study site, etc.
 - Hypothesis
 - Pertinent Literature: Must include sufficient references to assure advisory committee members that student is familiar with the proposed research area.
 - Anticipated Costs: Must include information which will alert the advisory committee
 members if any expensive equipment or supplies will be needed that are not
 already available and how such expenditures are to be met.
- Must be completed at the end of the 2nd semester for MS students and 3rd semester for PhD students.
- The prospectus must be submitted and orally presented to the advisory committee for feedback. Feedback should include help on narrowing the research interest, how to get started on the research project, and information on how to write a grant proposal (NSF, NIH, etc.) for the project.
- If the research emphasis changes in a major way after prospectus approval, then a new prospectus should be presented and submitted.

PROCEDURE

- Once the prospectus is ready for review by the committee review, either upload the
 prospectus to GradProg, or select the "Using External Tool" option on GradProg. If using the
 external tool, the prospectus should be sent to the committee by email, Box, Google Drive,
 etc. A copy of the prospectus should also be sent to the graduate program manager (not
 required if upload directly to GradProg). For detailed instructions on using GradProg, review
 the GradProg Student Instructions.
- 2. Coordinate a time to meet with your committee to present your prospectus, and notify the graduate program manager when the meeting has been scheduled.
- 3. For help scheduling a conference room, contact the graduate program manager.
- 4. During or following the prospectus meeting, committee members will submit their approval of the prospectus using GradProg.

ORAL/QUALIFYING EXAM

- MS students complete an Oral Exam; the Oral Exam must be completed at the end of the 3rd semester.
- PhD students complete a Qualifying Exam; the Qualifying Exam must be completed at the end of the 4th semester. The Qualifying Exam is comprised of 3 separate requirements:
 - Grant Proposal: This should be a complete research proposal prepared according to a pre-specified format (e.g., the NSF Dissertation Improvement Program guidelines).

A budget and justification for all expenses should be included. The grant proposal doesn't need to be submission ready at time of the qualifying exam, but it should be on track for submission to the target funding agency (student and committee can choose the target) with minor revisions after the exam. It is intended that the grant proposal will be submitted to the NSF, NIH, or whatever institute is offering the grant.

Literature Review: This should be a thorough review and reading of literature of the major theme(s) of the dissertation research. This will give the student flexibility to more fully develop ideas and to consider alternative or controversial points-of-view. The assignment permits the student to demonstrate an in-depth mastery and synthesis of the relevant literature including formats and page limits. The literature review should be appropriate for submission to a disciplinary journal for publication; it doesn't need to be all buttoned up and ready for submission to a journal at the time of the qualifying exam, but it should be fairly mature and capable of being submitted with some additional work. It is expected that the literature review will be submitted for publication to a journal (it can also be used as a chapter in the final dissertation).

Oral Exam

- The Oral/Qualifying Exam should typically be held when all coursework has been completed so that the student's expertise has been more fully developed, but there can be exceptions. Sometimes the oral/qualifying exam can be held even if all coursework has not been completed if a remaining course(s) is more on the periphery of required critical knowledge.
- PhD students advance to candidacy after passing their Qualifying Exam. Students pass once all qualifications (if any) have been completed. Students are then granted a raise to their stipend and can move to a write-up room (depending on available space).

PROCEDURE - MS STUDENTS

- 1. To prepare, students must meet first with his/her major advisor as well as each committee member for guidance on format and scope.
- 2. Students coordinate a date and time with their committee, and then notify the graduate program manager when it has been scheduled. It is recommended to set aside 3 hours for the exam.
 - a. For help scheduling a conference room, contact the graduate program manager.

PROCEDURE - PHD STUDENTS

- 1. Students should set aside 4 to 6 weeks to complete the first draft of the grant proposal and literature review.
- 2. Once the drafts are complete, the major advisor should read both documents and return edited copies to the student for revision.
- 3. After revision, both documents should be sent to all members of the advisory committee approximately 2 weeks prior to the Qualifying Exam, so that the committee can read them and be prepared to ask questions at the exam.

- a. After the exam, a final revision will be completed based upon suggestions made by the committee.
 - i. Any weaknesses in project design or protocol may result in the committee's recommendation for further revisions, and the issues may be revisited at the committee's discretion.
- 4. To then prepare for the oral exam portion, students must meet first with his/her major advisor as well as each committee member for guidance on format and scope.
- 5. To schedule the oral exam, students coordinate a date and time with their committee, and then notify the graduate program manager when it has been scheduled. It is recommended to set aside 3 hours for the exam.
 - a. For help scheduling a conference room, contact the graduate program manager.

EXAM OVERVIEW

The Oral Exam (for both MS and PhD students) consists of 3 portions:

- 1. Student Presentation:
 - o MS Students: At the beginning of the oral exam, the student should provide an oral presentation on their thesis; the presentation should include what they want to do (based on their prospectus) and what they've done so far. There should be a PowerPoint slide showing the classes taken they've taken, and anything else they've done to prepare to complete their research project.
 - o **PhD Students:** At the beginning of the qualifying exam, the student will provide an oral presentation of an overview map of what their dissertation looks like, essentially what they plan to do, including some detail about what will comprise each of their chapters. The student should provide one or two PowerPoint slides that show the courses they have taken and anything else they have done to prepare to complete their research project. The student will also present both the grant proposal and literature review to the advisory committee, reminding the committee that they have had time to look over the student's grant proposal and literature review paper.
- 2. Committee Questions: The committee then begins asking questions. Usually, one committee member will ask a few questions for about 15 to 20 minutes, then another committee member will take their turn, and so forth. The questioning is intended to provide an opportunity for the advisory committee to probe in greater depth any issues they deem relevant to the student's research project. This may include coverage of previous coursework, although this will normally be a minor part of the examination (although it will be a greater part of the examination for MS students than for PhD students). Committee members will examine the student on basic biological principles and concepts related to the focal area of study, as well as any material indicated on the Program of Study. The questioning continues with alternating committee members until the committee doesn't have any more questions and feels like they have a good idea of what the student knows, what the student doesn't know, and what the student is going to need to know (knowledge and skills) in order to accomplish their goals. The purpose of the oral exam is for the committee to identify what the student knows and to provide recommendations for the rest of their program to address any deficiencies.

- 3. **Committee Deliberation**: At this point, the committee will invite the student to leave the room. The committee will then decide if the student is sufficiently prepared to advance to candidacy, or if they need to retake a portion of the exam (i.e., address deficiencies from the Q&A, coursework, modify the literature review and/or grant proposal (for PhD students), etc.), or if they need to re-evaluate their career and educational goals.
 - For PhD students only: As part of the deliberation, the committee will determine whether the grant proposal and literature review are acceptable or not.

COMMITTEE DECISION

- The Oral/Qualifying Exam forms will be distributed to the advisory committee by the
 graduate program manager (currently done through Adobe Sign) before the examination
 begins. The forms include a committee decision form (signed by all committee members)
 and an evaluation form for each committee member (signed individually). All members of
 the committee must sign their individual forms as well as the committee decision form.
- Examiners should evaluate the student on total performance and not merely on those questions that they personally asked.
- There are 3 possible grade options for the Oral/Qualifying Exam:
 - Pass without Qualifications: The student receives a 5 (outstanding) or 4 (adequate) to pass the exam without qualifications. No further work is required by the student unless defined by the committee.
 - PhD students advance to candidacy, receive a raise to their stipend, and are eligible to move into a write-up room (on a first come, first serve basis). The stipend raise will be implemented at the start of the next semester following the completion and passing of the Qualifying Exam.
 - Pass with Qualifications: The student receives a 3 (retake portion) and all
 qualifications will be listed for the student to review and complete, along with the
 required deadline(s).
 - Option A: There are qualifications to be completed, but no oral portion of the exam needs to be retaken.
 - Option B: Only an oral portion of the exam needs to be retaken.
 - Option C: The qualifications include retaking an oral portion of the exam <u>and</u> other stipulations.
 - Completing qualifications:
 - For Option A above, once qualifications are completed, the graduate program manager should be notified. The committee chair will then be sent a copy of the previously signed and submitted committee decision form. The committee chair will sign and date the bottom certifying that the student has completed all qualifications.
 - For Option B or C above, the student must reschedule the oral exam
 to retake the required portion and should notify the graduate
 program manager when the exam has been rescheduled. The
 committee will complete new exam forms (decision form and
 evaluations).

- PhD students may be eligible for the raise and write-up room at this point, but it's up to the committee chair and members to decide. The raise and write-up room eligibility should not be granted if the student is not meeting expectations (thus the decision for pass with qualifications). If the qualifications are more of a value-added opportunity, then the raise could be granted at this time. For example, if the qualification decided on by the committee was to have the student take an additional course because the student wasn't meeting expectations and had some deficiencies that needed to be addressed, then it would be appropriate for the raise to be withheld until the class was completed, even if the class wouldn't be offered for another year or two. If the additional course was to take advantage of a value-added opportunity, then it would be appropriate for the raise (and write-up room eligibility) to be approved. Ultimately, however, this decision lies with the committee. Whether the student is eligible for the raise and write-up room should be discussed by the committee, and the graduate program manager should be notified of their decision.
- **Fail**: If the student receives a 2 (marginal) or 1 (poor) grade, then the decision of what to do ultimately lies with the committee. There are 2 options:
 - Option A: Reconvene at a later date (typically one semester later) to retake/repeat the exam.
 - Option B: Terminate the student from the graduate program.

DEFENSE OF RESEARCH

Research (data collection and analysis) should be defended when it is 75 to 90% complete. The Defense of Research is <u>not</u> intended to be done when <u>writing</u> is 75 to 90% complete (that is too late in the process). The defense of research is an oral presentation to the advisory committee that should consist of the research progress for approval of approach, work completed, and proposed work to still be finished. There is no written component; no written manuscript (thesis/dissertation draft) needs to be (nor should be) submitted to the committee for review. For PhD students, they would ideally have already published a couple papers by the time of their Defense of Research.

The most important purpose of the defense of research is to avoid surprises at the final defense, which final defense should be more of a summary. This is best accomplished by at the Defense of Research having the student stand in front of their committee and provide them an opportunity to fully assess their preparedness for their final defense. This provides a realistic opportunity for the student to test drive what will ultimately become their final defense presentation, and it gives the committee an indispensable, real-time status report on all aspects of the student's research acumen. The Defense of Research should be the most rigorous of all program requirement committee meetings where the committee grills the student. The committee can then provide the most appropriate and informed recommendations for course correction. Following the defense of research, the student should know exactly what is required of them (what needs to be added,

removed, modified, improved, etc., to their research and analysis) in order to successfully defend their thesis/dissertation. Perhaps the student will need to collect more date, reanalyze some data, use a different analysis tool, etc.

- Students coordinate a date and time with their committee for the Defense of Research and then notify the graduate program manager when the meeting has been scheduled.
 - o For help scheduling a conference room, contact the graduate program manager.
- The Defense of Research form will be distributed to the committee by the graduate program manager (currently done through Adobe Sign) before the meeting begins.
 Committee members sign the form certifying that the Defense of Research has been completed, and the committee chair can include any required stipulations.

GRADUATION APPLICATION

PREREQUISITES

ECCLESIASTICAL ENDORSEMENT

To be eligible to apply for graduation, students must have an active ecclesiastical endorsement on file for the semester/term they want to graduate. Ecclesiastical endorsements last through the end of August. If a student is planning to graduate in the Fall but defend in the Summer, they first need to renew their endorsement before they can schedule and hold their defense.

DEFENSE OF RESEARCH

Before applying for graduation, ideally the Defense of Research should already be completed, or at least scheduled. The Defense of Research should happen when research (data collection and analysis) is 75% to 90% complete (and is separate from the Final Defense).

PROGRAM OF STUDY CHANGES

The student is the person most responsible for their degree and making sure that any issues with their Program of Study are resolved so that they will be able to graduate.

- 1. **Deficient Courses:** Any deficient courses on the Program of Study need to be taken care of before applying for graduation.
 - a. Deficient courses will appear in black or orange text under the Program Requirements tab on the Program of Study milestone on GradProg.
 - i. Black text indicates that a course has not been taken.
 - ii. Orange text indicates that a course is currently registered for or has been partially completed (such as thesis/dissertation credits).

A list of deficient courses can be viewed on the student's Graduate Progress Report. On GradProg, click the "My Program Status" tab at the very top of the page. Scroll down to the "Deficient Courses" section. If no classes are listed, then the Program of Study is complete.

- 2. **Outdated Credit:** Also make sure that no credit has become outdated. On GradProg, view the "Credit that could become outdated" section directly below the Deficient Courses. This mainly applies to transfer or senior credit that may have been applied towards the Program of Study.
- 3. Contact the graduate program manager if any changes need to be made to the Program of Study (to replace a deficient course with a class that has already been taken that's not currently on the Program of Study, to resolve outdated credit, etc.).

INSTRUCTIONS

Apply for graduation online. Go to byu.edu > myBYU > School (tab in the Campus Links box) > Apply for Graduation. Make sure to apply by the stated deadline (deadlines can be found under the Graduation section on the department <u>Grad Student Resources</u> web page). If a student misses the application deadline, contact the graduate program manager.

REGISTRATION

For graduation, students must be registered for at least 2 thesis/dissertation credits (Bio 699R/Bio 799R) during their last semester, with the exception of just needing to register for 1 credit if graduating in June. If a student misses the graduation deadlines for any given semester/term, then they must register for 2 credits for the following semester/term (or 1 credit for June).

<u>Graduation Date</u>	Registration Requirement
April	2 credits in Winter semester
June	1 credit in Spring term
August	2 credits in Spring term, OR 2 credits in Summer term, OR 1 credit in Spring AND 1 credit in Summer*
December	2 credits in Fall semester

*If you are on an RA contract through Summer, then you'll need to register for either 2 credits in Summer OR 1 credit each in Spring and Summer to meet Student Employment requirements.

FINAL DEFENSE

READY FOR DEFENSE CERTIFICATION

The first step in scheduling and holding the Final Defense is to receive "Ready for Defense" certification from each committee member, which means committee members have reviewed the thesis/dissertation draft and believe the student is ready to hold their final defense. Committee members should only certify that the student is ready to defend after having read the thesis/dissertation and found it to be sufficient, without a need for major additions, deletions, or rewrites. If the committee feels the thesis/dissertation is not ready to be defended, then they should not submit their certification.

The committee will primarily be reviewing the content of the draft. The committee chair has particular responsibility for assuring that the following are completed correctly:

- The final work's format, citations, and bibliographic style are consistent and acceptable.
- Illustrative materials, including figures, tables, and charts, are in proper places and formatted correctly.
- The final manuscript is satisfactory to the graduate committee.

The graduate program manager will review the draft for formatting and will do an originality check, to ensure that all text is original, properly cited, and there is no plagiarism (unintentional or otherwise).

PREREQUISITES

- Students must be registered for at least 1 credit during the semester that the Final Defense is held. Spring and Summer terms are grouped together as 1 semester, so students can register for either term. For example, if the Final Defense is held during Summer term, then the student could register for 1 credit in either Spring or Summer term.
- Students must apply for graduation before they can obtain Ready for Defense approval.
- The Defense or Research must be completed before the Final Defense.

GUIDELINES

The thesis/dissertation draft should follow university, college, and department formatting requirements.

- The university requirements can be found on GradProg by clicking the "Resources" link at the top of the page.
- The college/department requirements can be found on the department <u>Grad Student</u> Resources web page under the "ETD" section.

PROCEDURE

The Ready for Defense certification is completed using GradProg.

- 1. Go to the "Ready for Defense" milestone on GradProg.
- 2. Either
 - a. Upload the thesis/dissertation draft here, or
 - b. Select the "Using External Tool" option. If using an external tool, the thesis/dissertation draft should be sent to the committee via email, Box, Google Drive, etc. If using an external tool, also send a copy to the graduate program manager for a formatting review and originality check. If not already indicated within the thesis/dissertation, make sure to notify the graduate program manager if any already published articles are being used as chapters of the thesis/dissertation.
- 3. Under the "Ready For Defense Approvals" tab, either
 - a. Click the "Send request to members who have not certified" button located below the committee members' names, or
 - b. Click the "Send request to certify Ready For Defense" button located to the right of each committee member's name.
- 4. Reminder notifications can be sent to committee members by clicking the "Resend request to certify Ready For Defense" button, which will appear after the initial request has been sent. Students are responsible for reminding their committee and making sure they obtain approvals from them by the stated deadline. When a committee member has input their approval, the box background will turn green.
- 5. For detailed instructions, review the GradProg Student Instructions.

DEADLINE

Students should give their committee at least 1 week to review their thesis/dissertation draft before expecting them to submit their certifications.

- The deadline to send the draft to the committee (via uploading on GradProg or through an external tool) is **at least 2 weeks before** the student is planning to hold the defense.
- Ready for Defense approvals must be received from the committee at least 1 week before
 the student is planning to hold the Final Defense.

SCHEDULING

PREREQUISITE

The Final Defense can only be scheduled after receiving Ready for Defense certification.

PROCEDURE

The Final Defense is officially scheduled by the graduate program manager.

- 1. Students coordinate with their committee what date and time will work best for everyone. It is recommended to set aside 3 hours for the final defense.
 - a. Final defenses may not be held during the interim period between semesters or terms. However, if there are scheduling conflicts and a time during the interim period works best for everyone, then a petition can be submitted to Graduate Studies requesting this be allowed. Contact the graduate program manager to begin the petition process.
- 2. Send the graduate program manager the following:
 - a. Date, time, and location (contact the graduate program manager to schedule a conference room).
 - b. Photo (to be included on a flyer that will be advertised to the department).
 - c. Committee Absence Approval form, if applicable (see below).
- 3. Once officially scheduled, the student and all committee members will be automatically notified via email, and the defense details will be displayed on the Ready for Defense page on GradProg.

DEADLINE

The defense details and Committee Absence Approval form must be submitted to the graduate program manager **at least 1 week before** the student is planning to hold the defense. Note that this is the same deadline for receiving Ready for Defense certification from the committee.

COMMITTEE ABSENCE

Student defenses are held in person with student, chair, and committee members in attendance. In-person defenses are the expectation and the standard; exceptions to this standard should be exceptional.

All committee members must be physically present for the defense. However, in some cases, circumstances may prevent a committee member from being physically present. Some of the possible reasons for a physical absence include the committee member now being employed by another academic institution, retired, or on sabbatical and thus not in residence at BYU. Graduate Studies will allow 1 committee member to participate via high quality video conference (Zoom is highly preferred over Skype). This option does not apply to the student or the committee chair. If one of the committee members will be attending remotely, submit the "Committee Absence Approval" form to the graduate program manager at least 1 week before the defense. All physical absences must be approved by the graduate coordinator or department chair.

In extenuating circumstances (not just inconvenience, but to avoid real hardship) the committee chair may request the graduate program manager to initiate a petition for a hybrid inperson/remote final defense. If it is deemed necessary to hold the student defense as a hybrid inperson/remote event and approval is granted via the petition process, then the following best practices should be followed:

- Virtual venues should be chosen carefully to minimize distractions and provide a professional environment for the defense.
- The committee chair should be a host/co-host of the meeting, using a BYU Zoom account.
- Remote participants should have their camera on.
- In-person participants should be in a room with suitable A/V capabilities, so remote participants can be seen and heard, and remote participants can see and hear in-person participants.
- A/V technology should be thoroughly tested in advance to ensure sufficient bandwidth and proper function of presentation technologies.
- Participants should have the microphone muted except when speaking.
- The committee chair should control the chat feature to keep distractions to a minimum.
- If the grad student participates virtually, then the student should be placed in the Zoom waiting room during committee deliberations.
- Family and friends may be invited to the student presentation over Zoom as directed by the committee chair.

MANUSCRIPT ORIGINALITY

The graduate program manager will do an originality check of a student's final thesis/dissertation draft. Two weeks before a student plans to hold their final defense, the student should send their final draft to the graduate program manager either via email or by uploading the draft to GradProg under the Ready for Defense milestone. If not already indicated within the draft, the student should notify the graduate program manager of any chapters that have already been published. The graduate program manager will use Turnitin to review the originality of the draft.

If during the review any minor issues come up, then the graduate program manager will contact the student to make revisions. If there are more substantial issues, then the draft will be sent to the student's advisor to review. The advisor should then send the draft to the student with needed revisions. Once the student has made revisions, send it back to the advisor. Once the advisor has approved the revisions and signed off on the draft indicating that it is acceptable, the draft should be sent to the graduate program manager, who will then do a final review. It is the advisor's responsibility (as opposed to the graduate program manager's responsibility) to work with their student to remedy any originality issues.

A student's thesis can't match other grad students' theses/dissertations, or have internal plagiarism (copying yourself). It's your thesis—it needs to be yours. Even if a student works with other grad students on their research project, the student needs to describe the materials and methods used, etc., themselves.

FINAL DEFENSE

- There are 2 parts to the Final Defense:
 - o First, the student will present their thesis/dissertation.
 - o Second, the advisory committee will question the student.

- The thesis/dissertation must be presented to the advisory committee in a public meeting.
 Students can invite their family and friends. It is customary for students to provide light refreshments for all attendees.
- Although the defense is open to the public, only members of the advisory committee may
 question the student and vote on their performance. After the presentation, all participants
 are invited to exit while the committee proceeds with an oral examination on the research
 material. The final discussion and voting will follow by the advisory committee.
- For the presentation, the student should provide a well-thought-out, well-organized, and clear summary of the student's work, possibly including the following:
 - o An explanation of how the current work relates to the student's discipline.
 - o The rationale behind the project in the context of available literature.
 - An explanation of the student's intellectual contribution to any or all research projects they were working on in their advisor's lab, and a description of how the student's work fits into the broader research conducted in this lab.
 - o The questions or issues the current work was designed to address.
 - o The way the design, method, and/or approach addressed those questions.
 - o The analysis of data gathered.
 - o The results, outcomes, final products, or performance.
- The final defense should also include the following:
 - An interpretation of results, findings, contributions, insights, conclusions, and their significance. What does this work add to existing knowledge?
 - A discussion of implications the work suggests for future research or creative endeavor.
 - o A discussion of any applied or clinical implications suggested by the work.
 - o Thoughtful, well-founded responses to all questions the committee members might ask.
- The oral exam of the thesis/dissertation defense should be demanding and fair. Examination questions should be carefully framed to require a grasp of discipline essentials and should require the ability to analyze and synthesize. Students should demonstrate currency in the field, thorough analysis of the questions or problems posed, and synthesis of knowledge in the discipline, all at a level appropriate for the degree to be awarded. Students must demonstrate a sound understanding of their work and its implications.

COMMITTEE DECISION

The committee chair will indicate the committee's decision under the Thesis/Dissertation Defense milestone on GradProg.

There are 4 committee voting options for the final defense:

- **Pass**: All members of the committee find the thesis/dissertation ready to publish and the candidate's level of knowledge sufficient. No further work is required.
 - o In GradProg, the committee chair should select Pass in the dropdown menu and then click Submit.

- **Qualifications**: The committee may require minor revisions of the thesis/dissertation, strengthening of the candidate's preparation in subject matter areas, or both.
 - In the comment box in GradProg, the committee chair will list qualifications and provide specific information of what needs to be completed for the student to be given final approval.
 - The student will be sent an auto email stating a comment has been made in GradProg; they can then view the comment listing the qualifications.
 - Once the student has completed all qualifications, the chair will then update the committee decision to Pass on GradProg. At this point, all committee members will need to submit their individual approvals on GradProg as well.
- Recess: A majority vote is not necessary to recess an examination. If 2 or more committee members vote to recess, then the examination is recessed. The committee will provide a detailed summary to the student, the department, and to Graduate Studies of the expectations for improvement in the subject matter, and/or changes required in the thesis/dissertation before the examination will be reconvened. The student should also be clearly advised of the seriousness of this decision, and of the necessity of fully addressing all concerns prior to proceeding with a request to schedule a second and final defense. With the approval of the graduate committee, the candidate will reschedule a second and final examination no sooner than one month later. It must be again formally scheduled through the graduate program manager.
 - o In GradProg, the committee chair selects "Recess" and must state in the comment box the specific items that need to be addressed prior to rescheduling the defense. Click "Update." The student will be sent an auto email notifying them a comment has been made in GradProg.
- **Fail:** A majority vote is not necessary to fail an examination. If 2 or more committee members vote to fail, then the examination is failed, and the student is immediately terminated from the graduate program. This decision is final and cannot be reversed. The student, the department, and Graduate Studies should be notified of the reasons for the committee's decision.
 - o In GradProg, the chair will select "Fail" and list the reasons for the failure in the comment box.

ELECTRONIC THESIS & DISSERTATION (ETD)

An electronic version of a thesis or dissertation is called an ETD, and it represents the culminating research and findings of a graduate student. For ETD submission deadlines, view posted graduation deadlines.

PREREQUISITE

Students must first receive a Pass on the Final Defense before the thesis/dissertation can be uploaded on GradProg for ETD approval.

INSTRUCTIONS

- 1. Make any final revisions required by the committee (as discussed during the Final Defense). Make any changes required to improve originality if needed.
- 2. Submit a fully formatted draft to the graduate program manager for review.
- 3. Complete the required revisions received back from the graduate program manager.
- 4. Go to the "ETD" milestone on GradProg.
- 5. Enter the required information on the "Publication Details." For detailed instructions, review the GradProg Student Instructions.
- 6. Click on the "Document" tab (to the right of the Publication Details tab), and upload your thesis/dissertation in PDF format.
- 7. Make any revisions requested by Graduate Studies, the department, or college. Students will be notified by email if any revisions are needed. Required revisions will be submitted as comments on GradProg (next to the uploaded ETD). Plan on a few rounds of revisions.
- 8. Once all parties have approved the ETD, this step is complete.

APPROVAL PROCESS

The approval progress of the ETD can be tracked by clicking the "Publishing Approvals" tab near the top of the ETD milestone page. The approval process typically takes at least one week since revisions are usually required; plan accordingly. Here is the approval process:

- 1. Graduate Studies: They will do an initial review of only the formatting of the Title Page and will also provide recommended changes for the preliminary pages, bookmarks, and general formatting.
- 2. Biology Department (the graduate program manager)
- 3. Life Sciences College (associate dean)
- 4. Graduate Studies: They grant final approval for the ETD to be published to the BYU HBLL digital library.

ETD COPYRIGHT

One of the important aims of the ETD policy is to properly manage intellectual property rights associated with research performed at BYU. This is accomplished by: (1) documenting the student author's intellectual property rights by depositing his or her work in BYU's digital depository and (2) determining whether the student's work is released a) immediately to the public, b) delayed for one year, or c) held in "secured access" status for a specified period of time to acquire patent or other rights.

The level of access should be considered carefully, taking into consideration publishing or other proprietary issues. If intending to publish in a journal, the student should understand any policies or agreements they would sign. It may be necessary to delay the online distribution of the ETD to meet the journal publisher's requirements against prior publication. Check with the specific journals where you wish to publish your work for their policies.

Students select a release option when uploading the ETD to GradProg:

- **Immediate Release** allows worldwide access to the entire work through the Internet and is recommend by the university. This makes the information freely available.
- Delayed Release postpones the release of the entire work for up to one year for publication
 or other proprietary reasons. After the one-year delay, the work will be automatically
 released for worldwide access in the digital library. This option is fairly common, especially if
 the student is planning to publish the thesis/dissertation and has articles in submission, in
 review, etc.
- **Secured Access** secures the thesis or dissertation for patent purposes or export controls. At the end of the secured period, the ETD will be released for worldwide access. The secured access option requires the approval of Graduate Studies.

ETD ACCESS

ETDs will be available worldwide using the following methods:

- Accessed on the Internet through BYU HBLL's digital library collection with ability to link directly to a specific ETD.
- Library catalog searches to find theses or dissertations by subject, title, or author and link directly to them.
- Search engines that allow full text searching for specific ETDs.
- Utilizing the Networked Digital Library of Theses and Dissertations.
- Dissertation abstracts available electronically through UMI Dissertation Publishing.

SURVEY OF EARNED DOCTORATES (PHD ONLY)

INSTRUCTIONS

The Survey of Earned Doctorates is required by Graduate Studies. PhD students can complete the survey after the ETD is initially uploaded (there is no need to wait until the ETD is approved). The survey is completed online. Instructions are available here or under the Graduation section on the Grad Student Resources web page on the biology website. Graduate Studies will be automatically notified when the survey has been completed.

DEADLINE

The survey needs to be completed by the final graduation deadline of the semester.

FINAL STEPS

These are the final steps to complete before ending the program:

- Print bound copy of thesis/dissertation if requested by advisor (they would have selected this option under the Thesis/Dissertation Defense milestone on GradProg, right below the Defense Status). Bound copies can be ordered through <u>GradWorksOnline</u>. Personal copies are optional.
- 2. **Send CV** updated with publications, presentations, and awards to graduate program manager. The department has to report these statistics for graduated students.
- 3. **Check out of office**: Remove belongings from office, clean and wipe down space, and return key(s).
- 4. Update address on BYU account: Go to byu.edu > myBYU > Communications (tab in Campus Links box) > Personal Information > Contact (tab at top) > Mailing Address. Whatever address is listed here is where the diploma will be mailed. Diplomas are mailed out approximately 3 to 8 weeks after graduation.

PETITIONS FOR EXCEPTION

Petitions for exception can be submitted for most Graduate Studies policies; while not all petitions are always approved, they will always be considered by Graduate Studies.

The most common petitions submitted are requests for an external committee member, graduate full-time status, or for holding the final defense during the interim between semesters.

Contact the graduate program manager to begin the petition process. The major advisor will need to provide the exception information and justification for why the petition is being requested. The petition is submitted by the department on behalf of the student. The petition is submitted online by the graduate program manager and must be approved by the committee chair, the graduate coordinator, the department chair, and college dean or associate dean prior to being reviewed by Graduate Studies. Reviewers will receive an email with a link to approve or deny the petition. The graduate program manager will be notified by Graduate Studies when a petition has been approved. The graduate program manager will then notify the student and committee chair.

THESES AND DISSERTATIONS

PUBLICATIONS

REQUIREMENTS

MS students are required to have at least 1 manuscript that is ready to be submitted at the time of their final defense.

PhD students are required to have at least 3 manuscripts ready to be submitted, in review, submitted, or published by the end of their program. It is expected that the literature review written for the Qualifying Exam will also be submitted for publication. It is also expected that PhD students will publish "as they go," so that at their final defense, 75% or more of their research has already been published in peer-reviewed journals, with the remainder being submission ready.

However, the above requirements are a baseline. For some disciplines, publishing several papers will better prepare the student for success in their field. For example, a bioinformatics MS students may want to strive for 4 publications, and a bioinformatics PhD student may want to strive for 10 to 14 publications, etc.

SUCCESS

When you have published, notify the graduate coordinator. We like to know about the success our graduate students are having!

COSTS

Publications costs will be covered by the department. Don't let the cost of publication stop you from publishing in top journals. Contact the financial manager for details.

OPTIONS

The thesis/dissertation requirement may be fulfilled by completing one of the following options:

- 1. Writing a research thesis/dissertation paper using formatting guidelines found below.
- 2. Submitting published journal article(s) in lieu of a research paper.
 - 1. In cases of co-authorship of published journal articles, the student's name must appear as primary author.
 - 2. The published work must be considered a "full-length" journal article rather than a communication, preliminary note, abstract, or letter to the editor.

- 3. The journal selected must be one in which major works of the respective field are regularly published.
- 4. The journal article must be peer-reviewed.
- 5. The work and length of time necessary to complete the study for publication should not be less than what is ordinarily expected for completing a regular thesis/dissertation in the same conditions.
- 6. While article-based chapters should follow the formatting required for journal submission, they are still subject to some university, college, and department formatting requirements.
- 3. Any combination of the above options that is acceptable to the advisory committee chair and members, as well as to the graduate program manager, graduate coordinator, and department chair.

FORMATTING

- Margins: 1-inch margins on all sides
- Font:
 - Should be black.
 - Should be a standard size (12 point for text, including titles and headings, and 10 or 11 point for tables and figures).
 - Use a standard serif typeface, such as Times New Roman. Ornamental typefaces, including script may not be used.
 - o No bold fonts in the preliminary pages.
- Line Spacing: The body of the work should be double-spaced.
- Page numbers:
 - Preliminary pages should be counted and numbered in lower-case Roman numerals (except no page numbers should appear on the title page, abstract, and acknowledgements pages).
 - o The body of the work should be numbered with Arabic numbers beginning with 1.
 - All pages are to be numbered consecutively in the body and the appendix (do not use letters 1a, 1b, etc.). All pages must be numbered consecutively, even if selections from published journal articles are used.
- The standard university format for the title page, abstract, and acknowledgement pages should be followed.
 - Sample pages can be found on GradProg under the Resources tab (ETD Instructions > Formatting).
 - Additional sample pages as well as templates can be found under the ETD section on the department <u>Grad Student Resources</u> web page.
- Follow all formatting guidelines found under the ETD Instructions tab on GradProg.
- Thesis/dissertations must also follow the Biology Department formatting guidelines, outlined on form "Biology Department ETD Formatting Requirements," which can be found under the ETD section on the department Grad Student Resources web page.

- The body and chapters in theses and dissertations should be formatted according to the requirements of the journal(s) to which they have been or will be submitted to. Thus, chapters in a single thesis or dissertation maybe be formatted slightly differently.
- The abstract in the preliminary pages should link all individual chapters; individual chapters are stand-alone works (already, or intended to be, published).
- Dissertations, or theses with multiple chapters, may begin with an introduction that links all of the individual chapters.
- Article-based chapters using accepted or published articles must include a complete citation and the following statement: "I hereby confirm that the use of this article is compliant with all publishing agreements."
- All theses/dissertations must be submitted electronically as a single PDF file.
- Word documents should be converted to PDF using Adobe Acrobat Pro (found on most campus computers).
- All fonts must be embedded.
- Bookmarks must be added for each heading and subheading listed in the table of contents.

PRINTING & BINDING

- If you would like to have your thesis/dissertation printed and bound, go to GradWorksOnline.
- The department doesn't require a bound copy, but your advisor might. Advisors can request a bound copy by selecting this option under the Thesis/Dissertation Defense milestone on GradProg (right below the Defense Status).
- Personal copies are optional.

STUDENT PROGRESS

BIANNUAL EVALUATIONS

- Students will be evaluated by their committee advisor twice each year, typically in January/February and June/July. Students may be evaluated additional times if so desired by their advisor.
- If there are issues or a student is not meeting provisional requirements, then the student should be formally evaluated.
- Each student is rated as making Satisfactory, Marginal, or Unsatisfactory progress.
- The advisor and student should meet face-to-face to review the student's progress, and both the advisor and the student must sign the evaluation form.
- The evaluation is based on the following:
 - 1) Completion of program requirements by posted deadlines
 - 2) Coursework performance
 - 3) Thesis/dissertation credit registration
 - 4) Progress in research, writing, publishing, and presenting
 - 5) TA responsibilities and evaluations
 - 6) Previous evaluation action items
 - 7) Contact with advisor and committee members
 - 8) General attitude
 - 9) Ethical and professional behavior
- Any student who is evaluated as either "Marginal" or "Unsatisfactory" will be notified in writing:
 - 1) What they need to do to make satisfactory progress.
 - 2) When each task needs to be accomplished.
 - 3) Which faculty member(s) they should contact for more information or support.
 - 4) What will happen if these tasks are not accomplished (e.g., an unsatisfactory rating for the next semester, termination from the program, etc.).
- Students who receive an unsatisfactory rating will not be eligible to obtain financial aid.
- If a student receives a marginal rating one semester and is not making satisfactory progress the next semester, then the student must be rated as making unsatisfactory progress. A student may not be rated as making marginal progress in 2 sequential semesters; failing to correct marginal progress is unsatisfactory.
- Any student receiving a marginal and an unsatisfactory rating or 2 unsatisfactory ratings in succession will be terminated from the graduate program at the conclusion of the semester, or the department can submit a Petition for Exception to Graduate Studies providing convincing justification why the student should be given another semester to demonstrate satisfactory progress. A contract to completion listing student and faculty responsibilities and a timeline must be attached to the petition.
- Satisfactory progress indicates that the student is progressing appropriately and is on track in all areas to successfully graduate within an acceptable time frame.

- If the student is not progressing with their thesis/dissertation, then they should NOT be evaluated as Satisfactory.
- Students should NOT be evaluated as Satisfactory if they are involved in destructive classroom behavior.
- Marginal progress may include the following:
 - Failure to establish a graduate committee.
 - o Failure to submit Program of Study.
 - o Failure to submit an approved prospectus.
 - o Prospectus or thesis/dissertation draft not approved.
 - o Limited progress toward courses and requirements on Program of Study.
 - o Grade in a course falling below C-.
 - o Registering for thesis/dissertation hours when little or no work has been done.
 - o Poor performance in teaching assistantships.
 - o Poor performance in research.
 - Limited progress towards publication.
 - o Minimal contact with advisor and committee members.
- Unsatisfactory progress may include the following:
 - o Failure to establish a graduate committee.
 - o Failure to complete Program of Study.
 - o Failure to submit an approved prospectus.
 - o Prospectus or thesis/dissertation draft not approved.
 - o Failure of oral/qualifying exams.
 - Lacking progress toward courses and requirements on Program of Study.
 - o Grade in a course falling below C-.
 - o Failing a course.
 - Registering for thesis/dissertation hours when little or no work has been done.
 - Poor performance in teaching assistantships.
 - o Poor performance in research.
 - Lacking progress towards publication.
 - o Minimal or no contact with advisor and committee members.
 - Concerns about ethical or professional behavior.
 - o Rated as marginal in previous review and has not remediated weak areas.
 - Failure to resolve any problems or fulfill any requirements indicated in a previous marginal or unsatisfactory review.

BIANNUAL COMMITTEE MEETINGS

It is in the student's best interest to meet frequently with their committee, so that they can look out for the student, make recommendations, help mentor them, etc. Frequent meetings also help everyone to be on the same page and encourage clear communication.

Graduate students must hold 2 full committee meetings each year. For MS students, if they are meeting the program requirement deadlines (outlined above in the Program Requirements

section), then this will naturally happen when the committee meets for the program of study, prospectus, oral exam, and defense of research.

For PhD students, if they are meeting the program requirement deadlines, this will also naturally happen until the student has passed the qualifying exam and advanced to candidacy. In subsequent years, the student will need to arrange meetings with their committee independent of program requirement (milestone) meetings.

If a student misses a program requirement deadline, then they need to have a full committee meeting each semester until they are back on track.

OVERDUE REQUIREMENTS

- Students have a two-week grace period at the beginning of the following semester to complete a program requirement (program of study, prospectus, and oral/qualifying exam).
- For the grace period to apply, students need to have scheduled the pending program requirement with their committee by the last day of finals and to notify the graduate program manager of the scheduled meeting.
- Extensions of deadlines may only be obtained through permission by the committee advisor
 for legitimate need. If an extension is required, the <u>Request for Extension of Requirement</u>
 <u>Deadline Form</u> should be filled out, signed, and submitted to the graduate program
 manager. This form is available under the Forms section on the department <u>Grad Student</u>
 <u>Resources</u> web page.
- Requirement progress checks will be made by the graduate program manager at the end
 of each semester (fall, winter, and summer). At this time, delinquent warning memos will be
 sent to both the student and advisor. Each memo should be signed by the delinquent
 student and returned to the graduate program manager to acknowledge notification of
 possible consequences for missed deadlines.
- Any student who has missed a deadline will have one probationary semester to complete the requirement and become current on all posted requirements.
- If a student has not completed the requirement within the probationary period, an additional memo will be sent to both the student and advisor stating that funding is suspended from the department. Suspension only applies to RA and TA assignments, not to tuition scholarships if applicable.
- After 2 semesters of delinquent requirements, the student may be terminated based on evaluation by the graduate committee.

TERMINATION

A student's graduate status may be terminated for the following reasons:

ACADEMIC

- Failure to satisfactorily complete the conditions of acceptance.
- Failure to fulfill the university's minimum registration requirement.
- A request to withdraw (with the intent to pursue a degree at another university, for personal reasons, or in response to department recommendation).
- Two consecutive unacceptable evaluations.
- Failure to make what the department or the university deems to be satisfactory progress toward a graduate degree.
- Failure on the departmental oral/qualifying examination.
- Failure on the final defense (defense of thesis or dissertation).
- Failure to comply with the time limit (five years for master's, eight years for doctoral).

A student dismissed or facing dismissal for academic reasons may request review of termination or impending termination. Such requests should be submitted in writing to the department chair. A student who wishes further consideration may request review by the college dean. Ultimately, a final request for review may be made to the Dean of Graduate Studies, who may appoint a committee to review the matter. All requests for review of termination must be initiated within one year of the semester in which the termination takes place. For more information, refer to the Graduate Student Academic Grievance Policy.

NON-ACADEMIC

- Violation of the university's standards of conduct or <u>Honor Code</u>.
- Disruptive Student Conduct: Students who become involved in <u>disruptive conduct</u> may be subject to dismissal by the University.

LEAVE OF ABSENCE

- To be eligible for a leave of absence, students must have completed at least 2 credit hours with acceptable grades during their first semester of admission.
- A leave of absence may only be requested for the following reasons: medical, military, or mission.
- Students may request leave by submitting a <u>Leave of Absence form</u>.
- Students requesting leave will be required to provide the following documentation, depending on the reason for the requested leave:
 - o Medical: Letter from doctor or therapist including the amount of leave time recommended by the professional (up to one year at a time).
 - Military: Copy of the military assignment including the length of assignment (up to one year at a time).
 - Mission: Copy of mission call letter including anticipated date of return (up to 8 semesters/terms).
- During the deferment period, students will be excused from minimum registration requirements and biannual evaluations.

- Students may not register for credits during the leave of absence.
- Students must still complete the degree program in the required amount of time as stated by the university (5 years for MS; 8 years for PhD). This time limit is not paused while the student is on a leave of absence.
- In addition, students should talk with their advisor to make sure that they understand how a
 leave of absence might affect any ongoing research, funding (external and/or
 department), etc., and to make sure that they and their advisor are on the same page.

WITHDRAWAL

A student may withdraw from the graduate program with the intent to pursue a degree at another university, for personal reasons, or in response to department recommendation. When a student withdraws from a program, or the department wishes to terminate the student's program, the department should submit a <u>Departmental Request to Expire (Terminate) Graduate Status</u>. This notifies Graduate Studies to expire the student's graduate status.

This form allows the department to indicate how the student's record should officially show the withdrawal. Checking Academic Suspension will cause a suspension notice to be placed on the student's transcript, preventing the student from being readmitted to BYU. The other three withdrawal categories do not affect the student's transcript, and the student may be considered for readmission.

VACATION POLICY

It is imperative for students to communicate with their advisor about any potential vacation plans. Students can, of course, take a vacation. However, extended vacations or frequent vacations are discouraged as this will impact the student's research and progress towards their desired degree. Moderation and communication with the major advisor are key.

If a student does take an extended vacation, after having received approval from their advisor (e.g., an international student returns to their home country to visit their family for a month, etc.), then the student shouldn't be on a stipend during this time. The student and major advisor should notify the graduate program manager of any extended vacation, so the student's contract can be modified appropriately.

COURSES

CURRENT BIOLOGY GRADUATE COURSES

For detailed info about the below courses, click <u>here</u>.

Course Title		Credit Hours*	Semester Taught
Bio 503	Research Orientation	1.0	Fall
Bio 510	Biological Systematics and Curation	3.0	Fall, even years
Bio 511	Lichenology	3.0	On demand
Bio 512	Angiosperm Phylogeny	3.0	On demand
Bio 517	Publishing in Peer-Reviewed Journals	2.0	Winter, odd years
Bio 520	Symbiosis	3.0	Winter, odd years
Bio 525	Animal Disease, Biosecurity, and Zoonose	s 3.0	Winter
Bio 530	Advanced Genetic Analysis	3.0	Fall, odd years
Bio 541	Aquatic Entomology	4.0	Fall, even years
Bio 550	Behavioral Ecology	3.0	Winter, odd years
Bio 555	Evolutionary and Ecological Modeling	2.0	Winter, odd years
Bio 556	Limnology	3.0	On demand
Bio 557	Stream and Wetland Ecology	4.0	Fall, odd years
Bio 559R**	Advanced Topics in Ecology and Evolution	n 1.0-6.0	On demand
Bio 560	Population Genetics	4.0	On demand
Bio 581	Biological Applications in Electron Microscopy	3.0	Winter
Bio 589R	Advanced Science In-Service	1.0-5.0	Summer
Bio 640	Phylogenetic Systematics	4.0	Fall, odd years
Bio 641	Molecular Evolution	4.0	Fall, even years

Bio 652	Evolutionary Ecology	3.0	Winter, even years
Bio 653	Community and Ecosystem Ecology	3.0	Winter, odd years
Bio 654	Speciation and Phylogeography	3.0	Fall, even years
Bio 664	Bioinformatics and Data Analysis 1	4.0	Fall, even years
Bio 665	Bioinformatics and Data Analysis 2	2.0	Winter, odd years
Bio 675	Pedagogy and Epistemology for Science Education	3.0	On demand
Bio 676	University Teaching 1: Advanced Pedagogical Methods	3.0	Fall, odd years
Bio 677	University Teaching 2: Instructional Design	2.0	Winter, even years
Bio 678	University Teaching 3: Mentored Classroom Practicum	2.0	Fall, Winter, Spring
Bio 691R	Graduate Seminar	0.5	Fall, Winter
Bio 694R	Special Problems in Biology	1.0-6.0	On demand
Bio 695R	Practicum in Biology Teaching	4.0-8.0	Winter
Bio 699R	Master's Thesis	1.0-9.0	Fall, Winter, Spring, Summer
Bio 799R	Doctoral Dissertation	1.0-9.0	Fall, Winter, Spring, Summer

^{*}Courses that have a range of credit hours listed are courses that vary in the amount of credits students can take each semester.

PERMISSION-TO-ADD CODES

Permission-to-add codes allow students to register for classes that require special authorization, that have a prerequisite that the student doesn't meet, or that are full. Thesis and dissertation courses (Bio 699R/799R) always require authorization, and some graduate-level courses will require them as well. Permission-to-add codes should be obtained from the instructor of the course. If it is a biology course and there are extenuating circumstances preventing the instructor from providing a permission-to-add codes, then the codes can be obtained from the department secretaries.

^{**}Bio 559R is a placeholder course. If a group of grad students are interested in a topic, they can approach a biology faculty member to see if they would sponsor a class on this topic. Students can take the initiative on proposing a class they would like taught (offered as a section of Bio 559R).

TEACHING FELLOWS PROGRAM

The Teaching Fellows Program is offered by the Biology Department. It is a 3-semester program that prepares students to be effective undergraduate educators and culminates in a semester-long, authentic teaching experience in Bio 100, an introductory course for general education students.

Requirements:

- Bio 676-University Teaching 1: Advanced Pedagogical Methods (Fall): A class in learning theory & effective pedagogy.
- Bio 677-University Teaching 2: Instructional Design (Winter): A class in designing curriculum.
- Bio 678-University Teaching 3: Mentored Classroom Practicum (Fall): Students teach their own section of Bio 100.
- Bio 676 is open to ALL graduate students (MS and PhD) in the College of Life Sciences; the second half of the program may only be available to Biology PhD and Biological Science Education MS students depending on space and available funding.
- The program is on an every other year rotation; it typically starts in the Fall of odd (not even) years.
- Bio 676 and Bio 677 should be taken consecutively, but Bio 678 can be taken at a later time if needed, as it is a significant time commitment. For instance, it may not be in the student's best interest to take Bio 678 during the same semester they are preparing for their oral/qualifying exam.

LING 501

LING 501-Advanced Research and Writing Techniques for Second Language Writers: This is a 3.0 course taught Winter semesters. Non-native English speakers will develop research and writing techniques necessary for graduate-level writing. This class is focused on helping international graduate students write a literature review for their thesis, dissertation, or for publication. The course outcomes include increased ability in academic English writing. Consider this course if it would be beneficial.

GRADUATE FORMS

DEPARTMENT FORMS

Current department forms can be viewed under the Forms section on the department <u>Grad Student Resources</u> web page.

GRADUATE STUDIES FORMS

Graduate Studies forms (university forms) can be viewed on <u>Graduate Studies' website</u> or under the Resources tab on GradProg.

FINANCIAL ASSISTANCE

DEPARTMENT FUNDING GUIDELINES

Graduate students accepted to a program in the Department of Biology are awarded certain financial assistance benefits as outlined below and in individual acceptance letters. The following guidelines may be altered each year and do not guarantee future awards. In addition to a tuition award, students are also given Research or Teaching Assistantships in the department as outlined below. These positions are not considered "no strings attached" stipends, awards, or guaranteed benefits; they are for the student to work in a lab or to assist a professor in a class. Students are expected to earn the wages received during employment by putting in the appropriate hours.

All financial assistance benefits are contingent on satisfactory progress as evaluated by the committee advisor in the biannual evaluations.

TUITION BENEFITS

MS STUDENTS

Master's students are awarded a tuition scholarship for 2 semesters per academic year, for a maximum of 2 years. Generally this scholarship is awarded for Fall and Winter tuition.

- LDS MS students are awarded a tuition scholarship of \$1500 per semester.
- Non-LDS MS students are awarded a tuition scholarship of \$5466 per semester.

If a student is charged less than the tuition award amount based on the number of credits he/she is enrolled in, then the award amount disbursed will only be up to the amount due for tuition.

PHD STUDENTS

Doctoral students are awarded a full tuition scholarship for all semesters, up to a maximum of 5 years. The amount awarded will be based on the number of credit hours the student is enrolled in. Students on an external fellowship grant providing tuition assistance will only be awarded a department tuition scholarship once they are no longer receiving external tuition support.

SUPPLEMENTAL AWARDS

PHD STUDENTS

Doctoral students will receive a supplemental award to help offset costs of living each semester he/she is enrolled for a maximum of 5 years. This award will either be disbursed as a stipend (added to the TA/RA stipend) or as a scholarship award.

Award amounts:

Single students: \$170/semesterMarried students: \$950/semester

TEACHING AND RESEARCH ASSISTANTSHIPS

MS STUDENTS

MS students are guaranteed 4 semesters of TA/RA positions, as long as additional semesters of funding continue to be approved by the committee chair and graduate coordinator. Three semesters must be Teaching Assistantships and one can be a Research Assistantship. It is expected that faculty advisors will provide external funding for Spring and Summer terms. When that isn't possible, the student could TA for a term, or the department can also help fund an RA if needed. It is expected that MS students will be a full-time student during spring and summer terms working on research and on campus, not taking a summer job elsewhere.

When a student will do either a TA or RA will be determined by their committee. Exceptions for the 4 semesters can be made under extenuating circumstances.

If a student knows they will not be graduating in June or August of their second year (instead of by April), then they should TA during their second Winter semester, so that they can use their one department RA during Spring/Summer.

Stipend amounts:

1st-year students:

Fall: \$5600Winter: \$5600

o Spring/Summer: \$6300

2nd-year students:

Fall: \$6300Winter: \$5740

Spring/Summer: \$6300

PHD STUDENTS

PhD students are guaranteed a TA or RA assistantship year-round, as long as additional semesters of funding continue to be approved by the committee chair and graduate coordinator. Seven semesters must be Teaching Assistantships and the rest can be Research Assistantships (usually 8 semesters). When a student will do either a TA or RA will be determined by their committee.

Students will not receive an additional stipend if they teach a course instead of TA for a course as the department views this as an opportunity for teaching experience. Please contact the graduate program manager for more details.

Stipend amounts:

- Before Qualifying Exam is passed: \$7688 per semester
- After Qualifying Exam is passed (advancing to candidacy): \$8200 per semester

TA ASSIGNMENTS

In order to be a TA for a class, students must sign a TA commitment contract. This form is located under the Forms section on the department <u>Grad Student Resources</u> web page. Students are encouraged to TA for Bio 100. The Bio 100 coordinator will find a TA slot for them with one of the professors who will be teaching Bio 100 in the following semester. Students can also arrange with a specific Bio 100 professor to be their TA by contacting them directly. Students can indicate a preference for TAing for a certain professor, although there is no guarantee they will be assigned to this professor. Students can TA for other non-Bio 100 classes by speaking to the professor they would like to TA for. Advisors will often have their graduate students be a TA for one of the classes that they are teaching.

Students must be available to be a TA during the scheduled course time.

TA commitment contract forms are submitted to the graduate program manager and are due by:

- The first Friday in October to be a TA in Winter.
- The last Friday in January to be a TA in Spring.
- The last Friday in March to be a TA in Fall.

If a student does not fulfill the TA contract and backs out of the assignment, especially if it is right before the semester begins, then the student will lose future consideration for department funding including RA and potentially TA positions.

Students who are going to be an instructor for a section of Bio 100 will need to submit the Instructor Contract form to the graduate program manager by the same above deadlines. To be eligible to be a Bio 100 instructor, students must first complete Bio 676 and Bio 677, as part of the Teaching Fellows Program. To be an instructor for Bio 100, contact the Bio 100 coordinator.

When a student TAs during Spring term, the TA stipend will cover both Spring and Summer terms (so that the student receives the same stipend amount to TA for a class then as they would by being a TA during Fall or Winter semesters).

TA EXPECTATIONS

Grad students are expected to be outstanding TAs and to bring their "A" game. Students are expected to put in 20 hours per week on average to fulfill their TA duties (some weeks could be more than 20 hours, some weeks less). Some of the 20 hours should be fulfilled by their TA office hours. Students are responsible for keeping track of their hours and making sure they are averaging 20 per week.

TA evaluations will be sent out mid to late semester/term to students in the class to review the performance of each individual TA. TA evaluation results will be sent to grad students at the beginning of the following semester/term. Results will also be sent to the course professor, the committee chair, and the graduate coordinator. The scale for evaluation is 1=Poor; 2=Below Average; 3=Average; 4=Good; 5=Excellent. Graduate student TAs are expected to receive an average score of 4.0 or above. If a TA scores below a 4.0, then the committee chair will need to have a discussion with the student before they will be allowed to TA again. If students score very low, or continue to receive scores below a 4.0, then they may lose the opportunity to TA for that course and possibly all courses taught in the Biology Department. Below are the evaluation criteria that students are asked to rate TAs on (using a scale from 1-Poor to 5-Excellent):

- Explains difficult concepts or procedures in a way the student can understand?
- Answers the student's questions accurately?
- Is patient and fair with all students?
- Is available and holds office hours at reasonable times?
- Is attentive and prepared to answer the student's questions during class time and office hours?
- Is friendly and approachable inside AND outside scheduled class time(s)?
- Maintains an appropriate level of professionalism during class times and reviews?
- Review sessions prepare the student well for quizzes and exams?
- Is a teaching assistant that the student would like to have again?
- General comments about the teaching assistant's work and effectiveness?

RA EXPECTATIONS

Having an RA is a full-time commitment to your research. Students are expected to put in 20 hours per week on average to fulfill their RA duties (some weeks could be more than 20 hours, some weeks less). An RA includes assisting the faculty advisor with research and lab duties, as well as working on the student's own research—these responsibilities will often overlap. Students should discuss RA expectations with their advisor.

HIRED ON CONTRACT

When graduate students are a TA or RA, they are hired on contract. Since they aren't hired hourly, they don't need to clock in/out. The graduate program manager will input contracts each semester/term. The contract then passes to the student for approval; students will receive an email from noreply hr@byu.edu requesting their electronic approval. The contract then passes to the Student Employment Office for authorization. Contracts are typically for 16 or 18 weeks: Spring/Summer and Fall contracts are usually 18 weeks and Winter contracts are usually 16 weeks. Students receive the same stipend amount regardless of the contract length. Students will notice that paychecks are slightly lower on 18-week contracts since the stipend is being disbursed over a slightly longer period of time. Contracts will typically begin the day after the previous contract ended, so that there are no gaps in pay for students.

New hires are required to set up direct deposit. Student Employment will provide these instructions.

If students haven't had an on-campus job at BYU before, or if it has been some time since they did, then they will need to fill out an I-9 with Student Employment. I-9 forms also expire, so occasionally students will need to go to Student Employment to renew their I-9. The graduate program manager will notify students if they need to do this.

BYU is on a biweekly pay schedule; payday is every other Friday. The pay schedule for the current academic year can be found here. Federal and state taxes are deducted from the gross stipend amount. If students aren't registered for credits during Spring and Summer terms, then FICA taxes will also be deducted, so students often notice that their paycheck amounts are lower during these terms. No taxes are withheld for international students.

TRAVEL FUNDS

- Graduate students are awarded up to \$800 per academic year for travel. These funds are
 only available to students traveling to <u>present</u> at a conference. These funds are not eligible
 for attending workshops or for traveling for fieldwork.
- The department travel funds can only be used for one conference per calendar year.
- Unused funds don't rollover to the next year.
- The money can only be applied to expenses involving travel to/from the area (airfare, car, bus, taxi, or shuttle), hotel lodgings, and conference fees. No department funds can be used for food, per diem, or other miscellaneous charges.
- These funds are not guaranteed. They are available on a first come, first serve basis. To
 apply for the funds, submit a <u>Student Travel Authorization</u> form to the department financial
 secretary at least 10 days prior to the trip.
- To receive reimbursement after the trip, the student must submit a <u>Travel Reimbursement</u> <u>Form</u> with all receipts attached to the financial secretary within 10 days of returning.
- No cash advances will be granted. It is recommended that a student use a faculty
 purchasing card instead of using personal funds. This card should be obtained from the
 committee advisor (if they have one). A card can also be obtained from the office

- manager or financial manager. To check out a card, first fill out the <u>Card Checkout Form</u> online.
- Travel should be booked through the BYU Travel Office. Students will need a Pre-Travel number first (obtained through their advisor or by working with the financial manager). The Travel Office can be reached at 801-422-3872.

ADDITIONAL TRAVEL FUNDS

PhD students who have advanced to candidacy and are in the 4th or 5th year of their program are eligible to receive additional travel funds. The funds will be double the regular \$800 (\$1600) and are to be used to attend either one international conference or two national conferences. Students are eligible to receive these additional funds only once during their program. These funds cannot be used to attend workshops, do fieldwork, etc. Students must be presenting either an oral or poster presentation of their research to be eligible. Students must also apply for supplemental travel awards offered by the sponsoring organization. In order to receive the additional travel funds, students will be required to submit a request to the department chair that should include the following:

- Objectives for attendance
- Presentation format (oral or poster)
- Benefit to career and educational goals
- Budget breakdown
- Supplemental travel awards applied for

This request should be submitted at least one month before the tentative departure date. There is no guarantee that the additional funds will be awarded.

TRAVEL FOR FINAL DEFENSE

If a student has not finished their degree but starts another graduate program elsewhere, a postdoc, employment, etc., the department will not provide travel funds for the student to return to campus to present their thesis/dissertation for their final defense.

TRAVEL FORMS

PRE-TRAVEL

- 1. **Student Travel Authorization**: The function of this form is two-fold:
 - a) Fill out this form if you will not be traveling with either a faculty member or a postdoc. Submit this form to 4102 LSB at least 10 days prior to departure.
 - b) Fill out this form if you would like to use some of the department allotted funds for graduate student travel (\$800/calendar year for each student). You will fill out the estimated costs. Submit this form to 4102 LSB at least 10 days prior to departure. Travel funds are only available for presenting at a conference.

- Submit this form to request approval for use of department graduate travel funds even in you were included on another student's travel authorization form/pre-travel approval.
- 2. **Assumption of Risk**: This <u>form</u> is required if the student will NOT be traveling with a full-time employee AND is :
 - a) Using/driving a personal vehicle, OR
 - b) Driving 10+ hours within a 24-hour period, OR
 - c) Work/school/driving time exceeds 14 hours within a 24-hour period.

This form will need to be attached to the Student Travel Authorization form before Risk Management can approve the travel.

- 3. **Personal Vehicles Statement of Understanding and Acknowledgement:** If a student will be going on a same-day trip using a personal vehicle, then they will need to fill out this <u>form</u> and send it to Risk Management.
- 4. **Pre-Travel Authorization:** A Student Pre-Travel must be submitted and approved before travel takes place or any bookings can be made, including through the BYU Travel Office. This is done through the Chrome River system by either the student's advisor or the financial manager. Once the Pre-Travel has been submitted, a Pre-Travel ID number will be provided. For additional info, click here.

POST-TRAVEL

Graduate Travel Reimbursement: This form goes in conjunction with the Student Travel Authorization form, if submitted for receiving travel funds from the department. This form is to be filled out and turned in once you have the receipts for the travel expenses. Submit this form to 4102 LSB within 10 days of return. A reimbursement form can be turned in prior to travel for any expenses already expended (conference registration fees, etc.), as well as upon returning from travel.

SCHOLARSHIP AWARDS

- There are a couple on-campus scholarships. The Department of Biology encourages its
 graduate students to seek additional funding as needed to continue making satisfactory
 progress in the program.
- D. Elden Beck Scholarship: This is a Department of Biology scholarship is awarded to MS students who will be starting their second year in the program and who are studying some aspect of natural history (broadly defined). Application information will be sent to MS students during Winter semester.
- Professional Presentation Award (PPA): PPAs are offered by the Graduate Student Society
 and are intended to enable graduate students to travel to important conferences or events
 within their discipline in order to present their original research. Awards are \$500.
 Applications are accepted twice a year; deadlines are generally in October/November

and February/March. Applications are submitted online at gsss.byu.edu. For more information, go to https://gradstudies.byu.edu/page/professional-presentation-award.

EXTERNAL FUNDING GUIDELINES

External funding is any funding outside of regular department funding. This could be a department or college scholarship, the HIGRA award, NSF/NIH grants, Fulbright Scholars, etc.

DOUBLE DIPPING/DOUBLE PAYING POLICY

The department seeks to financially support as many graduate students as possible. To this end, the department won't provide support for students who are being supported by another institution or who are being compensated for another job. In addition, since the department expects an RA to be a full-time commitment to a student's research, that obligation can't be fulfilled if a student has a full-time obligation to another institution or employer.

- **Example of being supported by another institution**: A student hasn't completed their MS degree but starts a PhD at another university.
- **Example of being supported by another job**: A student teaching at another institution, running own side business, etc. See below Off-Campus Employment Policy.

The department also won't provide support for students who receive external funding that provides compensation for research to be performed. The department won't provide stipend support for this same work. If external funding specifies that tuition will be covered, then the department will not provide tuition support while the external funding source is doing so.

For large awards that provide stipends higher than the department stipend (HIGRA, NSF GRFP, NSF DDIG, etc.), the student will receive the higher stipend from the external funding source and will be able to buy out TAs for the duration of the award. The department will not provide a stipend in addition to the stipend received from this funding source. Once the award has expired, then the department will continue to provide tuition and stipend funding at the higher rate (to match the external funding source) until the student timely graduates. The student may also no longer need to TA depending on the duration of external funding.

TA BUY-OUT POLICY

Depending on the funding arrangements made with the major advisor and department upon recommendation for admission, students may be able to "buy out" TA positions with external funding, allowing the student to focus on research. With this option, the student is not required to work as a TA but will fund an RA for themselves. In this option, if the external funds don't cover the full wage amount appropriate for the student (matching the level of funding provided by the department to other graduate students within the department), then the department will match funds up to the appropriate wage.

- If a student is on departmental support and earns a fellowship award, it must be used to buy out a teaching assignment.
- If a student was admitted under the arrangement that their advisor would provide partial stipend support, then that can't be switched out later to "buy out" support. The advisor must continue to provide partial stipend support.

OFF-CAMPUS EMPLOYMENT POLICY

POLICY

The department considers a student's time commitment to their research and as a TA to be the equivalent of a full-time job. Off-campus employment is strongly discouraged. Having off-campus employment has been the single most consistent factor shared by students who failed or underperformed in their graduate program. The department provides stipend support for each semester that is competitive with programs elsewhere. While it is not decadent, it is sufficient. Off-campus employment is not allowed if the student is receiving departmental support, including a TA, an RA, or an RA supported by external grant funds.

EXCEPTIONS

Exceptions to this policy require the following:

- 1. A detailed description of the work arrangement (time commitment and activities).
- 2. Justification of the work arrangement (collection, analysis, and interpretation of thesis/dissertation data).
- 3. Approval by the student's graduate committee.
- 4. Approval by the department graduate committee.

Students who receive approval to pursue off-campus employment may possibly maintain their departmental stipend support by returning salary/wages from off-campus employment to their major advisor's research account (to be used to directly support the student; see example below). Activities that involve the collection or analysis of data not directly related to the student's thesis/dissertation objectives will not be granted an exception. Similarly, if the student can gather/analyze data without having to work off-campus, then the request will be denied.

CONSEQUENCES

Students who are working off-campus full-time or part-time will not receive a TA or RA stipend for the semester(s) they work. Students who disregard the department off-campus employment policy and/or the advice of their committee members to not pursue outside employment, for each semester they choose to work off-campus, their departmental support can be withdrawn, including stipend, tuition, supplemental awards, travel funds, etc.

Examples of loss of stipend support:

- Bioinformatics student working full-time equivalent at ARUP: No departmental stipend since
 equivalent of stipend support is paid by ARUP.
- Ecology student working for the USDA, Forest Service, DWR, etc.: No departmental stipend since equivalent of stipend support is paid by state/federal agency.
- BSE student working for local school district/teaching BIO 100 at UVU: No departmental stipend since equivalent of stipend support is paid by school district/UVU.

Example of accommodation:

A student working a full-time or part-time equivalent at UVU collecting critical data that can
only be gathered through employment at UVU can receive a department RA stipend, but
the compensation they receive for off-campus employment should be returned to their
advisor's research account to be used for travel, fieldwork, attendance at workshops and
short courses, materials, supplies, etc.

ADDITIONAL FUNDING

MS students receive 2 years of guaranteed support, and PhD students receive 5 years of guaranteed support. Graduate students may request funding for one additional semester if they haven't graduated within their allotted time and will still be on campus working towards their degree. Additional funding typically won't be granted if a student:

- Will be enrolled in a graduate program at another institution
- Will be starting a postdoc position
- Will be employed off-campus full-time
- Has failed to meet graduation deadlines for their anticipated graduation date
- Has already completed the degree requirements

If funding is granted, it is expected that the student will graduate at the end of this additional semester. To request funding, submit the Request for Additional Semester of Funding form, found under the Forms section on the department Grad Student Resources web page, to the graduate program manager. The request will need to be approved by the committee chair, graduate coordinator, and department chair.

STUDENT HEALTH PLAN

BYU requires all continuing students (both undergraduate and graduate) who are enrolled at least %-time to have appropriate medical coverage for the duration of their enrollment at BYU. In other words, you must have coverage the entire time you are a continuing BYU student, including during any summers you take off or other short-term breaks from classes. If students have 0.5 credits a semester or term, then they are *eligible* to enroll for the BYU Student Health Plan, if they would like to. Graduate students will be automatically enrolled in the BYU Student Health Plan if they are registered full-time (see below) Fall semester of each year.

US Citizen or Permanent Resident: Full-time if registered for 8.5 credit hours per semester or 4.5 per term

International Students: Full-time if registered for 9 credit hours per semester or 4.5 per term

If not automatically enrolled in the BYU Health Plan, contact the Student Health Plan office at 801-422-2661 and ask how to get enrolled.

If you have private insurance, you can cancel your enrollment in the BYU Health Plan: Prior to the last day to add/drop classes, you will waive it online through myBYU. Access "My Financial Center" and at the top of the page select "Other." Next select "Health Coverage" and then select "Report Coverage." Enter your private insurance information. Press the "Save Private Insurance Information." This must be completed prior to the add/drop deadline.

Additional Information:

- Brochure
- Requirements
- FAQ

SEMINARS

GRADUATE SEMINAR SERIES

Speakers for the Biology Graduate Seminar Series include invited guests outside of BYU, department faculty up for review or rank advancement, and department faculty presenting on their current research. Seminar attendees include graduate students, faculty, and undergraduates enrolled in Bio 494R-Mentored Research. Seminars are held on Thursdays at 11:00 am in a lecture room in the LSB. The seminar series runs Fall and Winter semesters. The seminar schedule for the current semester can be viewed online here.

The seminar series is meant to benefit and be run by graduate students, as reflected by its name: the Graduate Seminar Series. Students nominate, invite, and host speakers. Nominations can be submitted individually or as a lab group. Send nominations to the graduate coordinator, cc'ing the graduate program manager. Nominations should include the speaker's name, their affiliation, and a possible seminar topic they could present on (basically an elevator pitch). Nominations can be submitted at any time.

Please think about people that would be a good fit for the diversity of interests in our department and would make the most of this opportunity. We're particularly interested in hearing from early career researchers representing a wide diversity of lived experiences and career trajectories (including outside of academia). It can also be a great opportunity to invite out potential postdoc advisors, future collaborators, etc.

All biology graduate students are encouraged to attend all department seminars every semester, even after completing the credit requirements for Bio 691R (two semester for MS students, four semesters for PhD students). All biology graduate students are also strongly encouraged to meet with seminar speakers when they visit. Sign-ups to meet with the speaker are generally sent at the beginning of the week of a seminar. Meeting with a seminar speaker is a great way to network, learn about potential career trajectories, collaboration possibilities, etc.

INTERNATIONAL SEMINAR SPEAKERS

One international seminar speaker can be invited per academic year. Submit a speaker nomination to the graduate coordinator including justification for why this speaker will be worth the extra cost. Nominations will be approved on a first come, first serve basis.

HOSTING

When students invite a speaker, they will be the host when the speaker visits. Advisors may also help to host as well. Host responsibilities include the following:

- Arrange for faculty/grad students (in groups of up to 4) to meet with the speaker
 Wednesday and Thursday evening for dinner (student hosts can recruit their advisor and lab mates to help with this as well).
 - o For the meals, it's recommended that a department purchasing card be used. Students can either borrow their advisor's purchasing card (if the advisor has one), or check out a department card from the office manager or financial manager.
 - Keep track of meal receipts and turn them in to the financial manager when the speaker's visit has ended.
 - When turning in receipts, write down what the meal was for (taking seminar speaker to lunch/dinner) and include the names of each person.
- Recruit students and faculty to sign up to meet with the speaker on Thursday (especially if there are still several empty spots on their schedule a day or two before the seminar).
- On Thursday morning, pick up the speaker from the hotel (unless they have a car and are planning to drive to campus), act as their guide around the LSB, just generally help them feel comfortable, etc. Some of these tasks can also be delegated to other lab mates or faculty that would be interested in visiting with the speaker.
 - Consider showing the speaker the river walk on the west side of the LSB (that goes passed the duck pond) and/or arranging for a faculty member to show them the Bean Museum.
- Introduce the speaker at the seminar.

LAB SAFETY

TRAINING

Students are required to complete lab safety training <u>yearly</u>. Training may also be required to TA for a course. Students should consult their advisor to make sure they complete required trainings. Faculty advisors are responsible to train their graduate students in site-specific hazards and to enforce safety polices in their laboratory areas. Advisors are responsible for ensuring that all training is properly documented and that students working in their labs do not engage in activities for which they have not been trained. All graduate students working in a laboratory area need to complete the online Life Sciences General Lab Safety Training. They must also read all training documentation for operations specific to the work area and sign a verification of training certificate or log. If grad students have undergraduates working with them on research projects, the undergrads also need to be trained.

Some training can be completed online at training.byu.edu; other training is given in person. Below is a list of training commonly required in the College of Life Sciences (all may not be required). For detailed information on these trainings, visit https://lifesciences.byu.edu/safety/safety-training. For any questions or problems with accessing training materials, email Rebecca Scholl (rebecca_scholl@byu.edu), the college safety coordinator.

- FERPA
- Title IX Employee Training
- OSHA Lab Safety Training
- Formaldehyde Standard
- Bloodborne Pathogen Training
- Biosafety Cabinet Training
- Laboratory Specific Training
- ATV Training
- Animal and Human Subject Training
- Lab Instructor Training

COLLEGE POLICIES

Students should review all College of Life Sciences Safety Policies and supporting documents online at https://lifesciences.byu.edu/safety/safety-policies.

DEPARTMENT POLICIES

1. Graduate students (as well as postdocs and undergrads) should not use equipment or consumables in labs unless they have directly been given permission by the PI. You need

- explicit permission. Moreover, obtaining permission once does not necessarily mean you have permission forever. Lab resources are not for free use by just anyone.
- 2. If anyone sees an unknown person in a laboratory, they should get their name and contact the Pl.
- 3. Clean up your mess! Turn off equipment when you are finished. Put stuff away.

EMERGENCIES AND ACCIDENTS

To request emergency assistance on campus (fire, police, or ambulance) dial 801-422-0911 (Campus Police) or 911. In all emergencies and accidents, the first consideration is your safety and the safety of those around you. For more detailed emergency procedures, please refer to the College Emergency Procedure Guide.

All injuries, spills, and fires need to be reported as soon as possible, even if they are minor and require no further action. All incidents must be reported to the faculty advisor. If the advisor can't be reached, contact the graduate coordinator or the department chair. Incidents should also be reported to the college safety officer (801-422-6875), and possibly to Risk Management and Safety (801-422-4468). All injuries and incidents need to be reported within 24 hours when possible.

RESOURCES

OFFICE SPACE

Currently there are 2 types of spaces allocated for graduate student use: office space with individual carrels and write-up rooms. Please be aware that you may be asked to move for new faculty, post-docs, etc. Desk spaces are assigned by the department; effort will be made to listen to requests for specific desks, but space may be limited. In addition, the department follows a model of having students seated as cohorts (instead of as lab groups) to enhance intentional collisions and encourage collaboration. If you desire an area that is quieter, then we invite you to visit the Harold B. Lee Library, which has several carrels and designated quiet areas.

OFFICES W/DESK CARRELS

- These offices are for MS students and for PhD students before they have passed their Qualifying Exams.
- In addition to the individual desks, there are cabinets along the wall in most of the offices that students can also use.

WRITE-UP ROOMS

- These offices house 2 large desks each.
- They are available for PhD students who have passed their Qualifying Exams (including completing any qualifications), so they have space where they can focus on writing their dissertation.
- The space is not guaranteed. It is on a first come, first serve basis.
- PhD students may be sharing the office with a postdoc or visiting faculty.

KEEPING SPACE CLEAN

- Graduate students are responsible for keeping their individual desks, drawers, and surrounding area clean and tidy.
- The department is not liable for any items that may be lost or stolen from these offices.
- The graduate program manager will conduct an office checkout when students are graduating, moving off-campus, or moving to a different office.
- When checking out of their desk space, students are expected to:
 - Clear out all belongings: Clear off the desk, remove everything in the drawers, check the floor underneath the desk, remove any posters that may have been put up on windows or walls, remove any belongings in the cabinets near the door, etc.
 - Wipe down the desk surface, the partitions, and the drawers (inside and out, including the drawer handles). Also wipe off the cabinet shelves being used (if any),

or desk shelves (for write-up rooms). If any of the windows have writing on them, clean that off as well.

o Return office keys: desk drawer keys and door key.

COMMONS ROOM

The department "Commons Room" is located in 4131 LSB. The purpose of this room is to improve mental health and increase productivity and satisfaction by encouraging interactions between graduate students. There are several kitchen appliances: a fridge, a couple microwaves, toaster, toaster oven, etc. There's also a ping pong table, pool table, foosball table, and Wii system. In addition, there is a large table (for eating lunch, having brainstorming sessions, you name it), as well as whiteboards. The graduate coordinator stocks the fridge with drinks and the cabinets and shelves across from the fridge with food and snacks – all for exclusive consumption by biology graduate students.

Rules:

- Keep the room, counters, table, and microwaves clean and tidy.
- Recycle cans and cardboard (there are recycling containers near the main hall on the 4th floor in the LSB).
- Label and date food in the fridge.
- Don't leave containers, dishes, etc., in the sinks.
- Leave it better than you found it.
- Undergraduates shouldn't be using the room unless accompanied by you (or with their lab
 group for a lab meeting with a faculty member). If you notice undergraduates using the
 room, immediately notify the graduate program manager or office manager.

MAIL

INCOMING

Mail for graduate students will be delivered to students' desks by the graduate program manager. Packages will be delivered to the department office, and the department secretaries will send an email to the student notifying them to come pick up their package.

Packages should be mailed to this address, making sure to include the name of the student's advisor:

Student Name c/o Advisor Name Department of Biology 701 E University Pkwy 4102 LSB Provo, UT 84602

OUTGOING

There is an outgoing mail drop box located across the hall from 4004 LSB (it is a slot in the wall). Mail is picked up daily Monday through Friday (excluding holidays). Envelopes must be stamped.

BYU Print and Mail provides a shipment pickup service. If there isn't a prepaid label, Mail Services will email the student a tracking number. If re-using a shipping box, no portion of a previous label can be visible; packages that have previous labels may be held at a local postal office for the sender to come pick up.

Outgoing packages can be shipped with assistance from the department secretaries. Bring the package(s) to the department office (in 4102 LSB). For same-day shipping, come before 3 pm at the latest. To mail a package, the department secretaries will need the following information:

- Mailing address
- Account to charge shipping costs to
- Weight/quantity
- Description of contents

Alternatively, students can submit a Shipment Pickup Request themselves. Click here to access the online request form. After submitting the request, write the provided number on the package itself, or on a sticky note or something else attached to the package. For same-day pick up, online requests must be submitted by 3 pm at the latest, and packages must be dropped off to the department office by 4 pm at the latest. Mail Services will only pick up packages from the department office 4102 LSB).

DEPARTMENT CAMPUS CARDS & CREDIT CARDS

The department campus card can be used for making copies, purchasing supplies at the BYU Store, and making other purchases on campus. Purchases made on this card are charged to the advisor's account, so the card may not be used for personal purchases.

The department purchasing credit card can be used for purchases made off campus. Common uses of the credit card are for taking seminar speakers to dinner, registering for a conference (if the student's advisor doesn't have a purchasing card for them to use), etc. The following restrictions apply to using either a department credit card or an advisor's purchasing card:

- Purchasing Cards should only be used for valid, authorized, and necessary BYU purchases that are allowable under the BYU commercial card program. Examples of purchases not allowed include gift cards, hazardous materials, personal purchases, and donations.
- Purchasing Cards are only authorized to make purchases while in possession of the user and should not be stored in user profiles of online websites.
- Any employee misuse or embezzlement of items purchased with the card may result in disciplinary actions and personal liability for the offender, and may be grounds for termination or possible criminal prosecution.

Purchasing Cards are to be used within the established spending limits and restrictions
placed on the cards. For example, a merchant should never be allowed to split the cost of
a single transaction between two or more sales receipts in order to avoid the transaction
authorization limit.

In order to use either of these cards, first fill out the online <u>Card Checkout</u> form. Campus cards can be checked out from the department secretaries. Department purchasing cards can be checked out from the office manager or financial manager. Before returning the card, either scan or take a photograph of all receipts and email to the financial secretary (<u>byubiofinance@gmail.com</u>) or financial manager (<u>jim wooten@byu.edu</u>). Hard copies of the receipts should also be submitted to the financial secretary when the card is returned.

PRINTERS AND COPY MACHINES

The LSB copy machines in 4004 LSB are available for graduate student use. Copies or pages printed should be charged to the department campus card, available from the department secretaries (first fill out the online <u>Card Checkout Form</u>). To print, bring a USB with the file(s) on it. The department secretaries can also help with navigating the copy machines.

If you are a TA for a class, then the department secretaries can help if you need anything copied or printed, especially larger print jobs (tests, etc.). Email files you need printed to biosecretary@byu.edu with specifications as to color, number of copies, etc. Pick up printed or copied documents from the department office. Department secretaries have several tasks to manage, so please plan ahead and don't make urgent requests.

For special print jobs (posters, etc.), visit Cougar Creations (1010 WSC) located in the basement of the Wilkinson Center. Charges should be made with the campus purchasing card,

When using the campus card, any receipts for printing or making copies from Print and Copy centers will need to be submitted to the financial secretary or financial manager.

LSB CONFERENCE ROOMS & CLASSROOMS

Conference rooms equipped with audiovisual equipment are available on the 3rd, 4th, and 5th floors of the LSB. There are three different sizes: small rooms (seat 6), medium rooms (seat 12), and large rooms (seat 26 to 30). These rooms can be used for committee meetings, lab meetings, etc. Rooms can be reserved online up to 2 weeks out. For help reserving a conference room further in advance, contact the graduate program manager.

Some classrooms within the LSB can also be reserved for TA reviews, etc. To reserve these rooms, either reserve them online at <u>Isscheduler.byu.edu</u>, or contact the department secretaries for assistance.

DEPARTMENT VEHICLES

Graduate students can reserve department vehicles for field work, research, etc. The department has 1 SUV (seats 5), 1 medium-sized truck with camper cover (seats 5), 1 large truck with camper cover (seats 5), and 1 van (seats 12).

Cost of Use

Mileage will be charged to the account number indicated at time of reservation. Mileage usage rate is subject to change.

SUV: Rav-4 (#DB3) \$0.40/mile
 Van (#DB2) \$0.58/mile
 Truck: Toyota Tacoma (#DB1) \$0.61/mile
 Truck: GMC Sierra (#DB5) \$0.67/mile

Van Card

Before driving the van, students must have first completed van driving training and have received a van driving certificate ("van card"). The training can be done online through training.byu.edu. The training is called "Van Driving Training Program." The van driving certificate will be granted upon completion of the training.

PROCEDURES

RESERVING

The department secretaries can help make vehicle reservations. To request their assistance, visit the department office, call 801-422-2582, or email <u>biosecretary@byu.edu</u>. To reserve online or for additional information about the vehicles, visit <u>Isscheduler.byu.edu</u>. An account number for the mileage to be charged to will be required to reserve a vehicle. Ask your advisor (or the financial manager if your advisor is unsure) what account number to use.

Be sure to reserve the vehicle you prefer in plenty of time, as certain vehicles are reserved frequently. Department vehicles can only be reserved for a limited time of 2 weeks or less.

PICKING UP

- 1. When the reservation time slot arrives, pick up vehicle keys from the department office.
 - a. The office is open 8 am to 5 pm, Monday through Friday. If you will need the vehicle before the office opens, pick up the keys the day before.
- 2. If you are taking the vehicle for a long trip (100+ miles), also pick up a gas card. Gas should not be charged to a personal card.

S3RETURNING

- 1. Upon returning, if there is less than 3/4ths of gas in the tank, fill up at the BYU Service Station (located on the southeast side of campus at 800 E 900 N).
- 2. If the vehicle is dirty (especially if the truck was used for field work), the vehicle must be washed and vacuumed at the BYU Service Station (use the blue key on the key ring).
- 3. Return the vehicle to the exact reserved parking space it was picked up from; each vehicle has a reserved on-campus parking space.
 - a. The SUV and medium truck (Toyota Tacoma) have parking stalls on the bottom level of the LSB parking garage.
 - b. The van and large truck (GMC Sierra) have parking stalls north of the Benson Building. These two vehicles are too tall for the LSB parking garage: do not attempt to drive them into the LSB parking garage.
- 4. Record the ending mileage.
- 5. Fill out the small vehicle paper slip (located on the key ring) properly and completely.
- 6. Return the keys and the filled-out paper slip to the department office.

COMPUTERS IN 4020B LSB

There are computers available for use in 4020B LSB with a host of software useful for research and analysis:

Macs:

- Adobe CS
- Automator
- Eynote
- Geneious
- Genodrive
- Mesquite
- Microsoft Office Suite
- Paup dev icc
- Python
- R
- raxmIGUI
- Text Wrangler
- Unipro UGENE

PCs:

- Adobe Suite
- AliView
- ArcGIS
- BEAST
- ClustalX2
- FigTree
- Firefox
- Google Earth
- Google Chrome
- JAligner
- JMP Pro 12
- Mauve
- MEGA7
- Microsoft Office
- Putty
- R
- SAS
- SigmaPlot 13.0
- SPSS Statistics
- Structure
- SYSTAT 13
- TnT
- TpsSplin

- Unipro UGENE
- WinArl35

BUILDING ACCESS

The LSB has limited perimeter door access in the evenings, on weekends, and on holidays. Graduate students are granted "after-hours" access. Exterior doors are equipped with card readers. Building access requests will be submitted on behalf of the student either by the advisor or graduate program manager, usually within the first week that a student begins their graduate program. Once access has been granted, students can tap the card readers with their BYU ID card to enter the building when exterior doors are locked. Each person entering a building when it is locked should swipe his or her own card. Do not give your ID card to another person to access the building; doing so will result in having your privileges revoked. When buildings are locked, outside doors should not be propped open.