# Table of Contents

Introduction .................................................................................................................................................. 3
Department Facilities .................................................................................................................................... 4
Animal Science Faculty .................................................................................................................................. 6

Programs of Study ...................................................................................................................................... 9
  Master of Science (Non-Thesis) .................................................................................................................. 10
  Master of Science (Thesis) ......................................................................................................................... 15
  Doctor of Philosophy ................................................................................................................................. 21
  Minor in Animal Sciences .......................................................................................................................... 31

Program Administration ............................................................................................................................ 32
  Recruitment and Admission ....................................................................................................................... 32
  Student Admission Procedures ................................................................................................................ 32
  Graduate Student Funding Policy .............................................................................................................. 32
  Curriculum ................................................................................................................................................ 35
  Graduate Teaching Assignments .............................................................................................................. 35
  Graduate Student Progress ....................................................................................................................... 36

Appendix I
  Graduate Student Annual Report & Program of Study Form ................................................................. 38
  Yearly Update- Year 1 ................................................................................................................................. 39
  Yearly Update- Year 2 ................................................................................................................................. 41
  Yearly Update- Year 3 ................................................................................................................................. 43

Appendix II
  Selecting a Mentor .................................................................................................................................... 45

Appendix III
  The Faculty-Graduate Student Relationship ........................................................................................... 47

Appendix IV
  Degree Checklists ..................................................................................................................................... 51

Appendix V
  Laboratory Rotation Form ......................................................................................................................... 55

Appendix VI
  Guidelines for Teaching and Research Assistants/ Associates .............................................................. 56
Introduction

It is a pleasure to welcome you to the Animal Science Program. The faculty and staff of the School of Animal and Comparative Biomedical Sciences are looking forward to working with you during your graduate education. This Handbook will help you meet all of the various requirements for successful completion of an advanced degree. Your major academic advisor will help you, but you must take the initiative in seeking advice.

You should become familiar with the contents of this Handbook and keep it for reference. The entire mentoring guidebook has been reprinted in this manual for your benefit. The “Handbook for Completing the Steps to Your Degree” from the Graduate College Degree Certification office is provided separately for your convenience.

Every attempt has been made to present all the procedures and requirements for a graduate degree in Animal Sciences as accurately as possible. However, the University of Arizona Graduate College is the only official listing of these procedures and requirements and can be referenced at http://grad.arizona.edu. The information in this Handbook is provided for convenience only.

Sean W. Limesand, Ph.D.
Professor of Endocrinology
Department Facilities

Campus

The School of Animal and Comparative Biomedical Sciences, home to the Animal Sciences Graduate Program, is located in both the Shantz Building and Veterinary Science and Microbiology Building on the main campus of the University of Arizona. Laboratory facilities provide modern equipment to support the research activities of the graduate faculty. Animal research units are located in Tucson at the Campus Agricultural Center and West Campus Agricultural Center. Additionally, research units can be found near Camp Verde, AZ at the V-V Ranch.

Campus Ag Center

The Campus Agricultural Center houses several research and curriculum-enriching facilities. The Agriculture Research Complex is a state-of-the-art facility for conducting large animal physiology and nutrition experiments under complete environmental control. The sophisticated environmental chambers, surgery suites, and associated laboratories make this the most sophisticated environmental research facility in the country. The Food Product and Safety Lab provides a USDA-inspected harvesting plant for research and instruction in meat science, food safety and new product development.

The Livestock Complex, which is a covered livestock arena, is used for equestrian instruction, the equestrian team and livestock judging events. This facility is also available for teaching or use by the Arizona Cooperative Extension Service, 4-H, FFA and outside groups. The Equine Unit, with approximately 30 horses, is used for instruction and research in equine reproduction and management. Intensive research in nutrition, reproduction and physiology of ruminants is conducted in a 48-pen unit located at the west end of the Campus Agricultural Center. A recent addition (December 2012) to the Campus Agricultural Center is the creation of a teaching farm. The teaching farm is designed to provide the livestock needed to properly teach courses that require a “hands-on” field component.

West Campus Agricultural Center

The West Campus Agricultural Center is a ruminant feeding facility equipped for: 1) feed mixing and preparation, 2) feeds and feeding research trial, and 3) animal breeding and genetics studies. The Center is located approximately five miles from the main campus.

V-Bar-V Ranch

The V Bar V Ranch is located in Rimrock, Arizona, approximately 220 miles north of Tucson. The University of Arizona-College of Agriculture and Life Sciences acquired the V Bar V Ranch in January 1995 on a gift/purchase basis from Ben and Betsy Zink. The acquisition was made possible through the use of private funds provided by the college’s supporters and the UA Foundation. Transecting the Mogollon Rim, the 71,000 acre grazing allotment runs about 30 miles east from Camp Verde and varies be-tween four and five
The University of Arizona

miles in width. Forty-four acres is private land, with the remainder held under lease from the U.S. Forest Service.

With elevations ranging from 3,200 to 7,000 feet, the ranch allows the UA College of Agriculture and Life Sciences to expand its experiment station network to include higher elevation ecosystems. In addition to 540 cattle, the ranch is also a habitat for a wide variety of wildlife, ranging from mammals, birds and fish to reptiles and amphibians. Vegetation zones, including high desert chaparral, pinon-juniper woodland, and pine forest, are typical of those on most of the commercial ranches in Central and Northern Arizona.

Because the V Bar V is a fully operating, working ranch, research performed there involves an applied approach to problem-solving, rather than laboratory studies conducted in basic science, faculty, staff, and students are able to utilize and operate the ranch by conduct research in the various disciplines of agriculture including, but not limited to, animal and plant science, veterinary science, renewable natural resources, agricultural economics, soil and water science, and agricultural engineering.
Faculty & Research Interests

Ronald. E. Allen (rallen@ag.arizona.edu or 520-621-7626) Endowed Chair and Professor- Ph. D. Iowa, 1976.
Research focuses on skeletal muscle growth and repair with specific emphasis on the regulation of satellite cells. Satellite cells are myogenic stem cells within muscle that have the ability to form new fibers following injury or contribute to nuclei to existing fibers during growth. The specific protein growth factors and hormones that regulate the division and differentiation of satellite cells are being presently being investigated.

Randy Bogan (boganr@email.arizona.edu or 520-621-1487) Assistant Professor- Ph.D. (Colorado State, 2006), M.C.R.(Oregon Health and Science Univ., 2012).
Research interests are to understand and reduce the large number of pregnancies that are lost in humans and domestic animal species due to inappropriate regression of the ovarian corpus luteum (CL) during early pregnancy; and to investigate the links between ovarian processes and coronary heart disease (CHD) risk factors. Dr. Bogan’s research studies utilize an integrative physiology approach where experiments ranging from the molecular to whole organism level, in both animal and human models, are used to answer questions with translational implications.

Robert J. Collier (rcollier@ag.arizona.edu or 520-621-7622) Professor- Ph.D. Illinois, 1976.
Research focuses on effect of environment and heat stress in particular o genes function. Area of specific research interest include: nutritional, physiological, endocrine, and cellular response to heat stress. Practical management models and environmental research facilities are utilized to provide environmental conditions facing livestock in Arizona.

Zelieann Craig (zelieann@email.arizona.edu or 520-621-9965) Assistant Professor – Ph.D., Arizona, 2009.
Dr. Craig is interested in understanding how environmental chemicals affect the fertility of women and animals. Her work focuses on understanding how phthalates, a group of endocrine-disrupting chemicals, affect ovarian function. Thus, work in her laboratory is focused on using animal models to elucidate the mechanisms by which phthalates exert ovarian toxicity, determine whether phthalates cause female
infertility, and examine whether the effects of phthalates on female reproduction can be prevented or reversed. Using this knowledge she hopes to develop additional models to evaluate other chemicals and environmental factors that could influence both human and animal reproduction.

Dan Faulkner (dfaulkner@email.arizona.edu or 520-626-5573) Professor and Extension Beef Specialist-Ph.D. Nebraska, 1983. Dr. Faulkner’s research program studies the factors that influence cow forage intake, efficiency and longevity under Arizona range conditions in order to assist Arizona beef producers in improving the economic viability and environmental impact of their beef operations.

Vince Guerriero (guerrier@email.arizona.edu or 520-621-7764) Associate Professor, Ph.D. Syracuse University, 1979. Research focuses on the function of heat stress proteins in mammalian tissues. He serves the School in the area of protein biochemistry with a focus on heat shock proteins in general and heat shock binding proteins in particular. Dr. Guerriero’s laboratory has discovered a novel Hsp70 inhibitory protein called HspBP1. In vitro studies have revealed that HspBP1 binds to and inhibits Hsp70 by removal of bound nucleotide. Further studies have shown that HspBP1 is elevated in tumors. Current research is focused on the function of extracellular HspBP1 in cancer cell growth and the regulation of numerous other cellular activities by HspBP1.

Sean Limesand (limesand@ag.arizona.edu or 520-626-8903) Professor- Ph.D. Colorado State, 2000. Research focuses on fetal development and growth, understanding how aberrant fetal nutrient and/or endocrine factors lead to postnatal complication or the fetal origins of adult diseases. Dr. Limesand seeks to identify mechanisms that alter pancreatic structure, physiology and metabolism in intrauterine growth restricted offspring to provide treatment strategies.

F. Douglas Reed (dreed@ag.arizona.edu or 520-621-5660) Director and Lecturer in Race Track Industry Program- MBA Arizona, 1997. Mr. Reed is responsible for the coordination, promotion, and fundraising for the RTIP which hosts the world’s largest multi-breed pari-mutuel conference each year. Mr. Reed has extensive experience as a racing official, track manager and racing and gaming industry consultant.

Benjamin Renquist (bjrenquist@email.arizona.edu or 520-626-5793) Assistant Professor- Ph.D, UCDavis, 2007. Dr. Renquist’s research has 3 foci. 1) Investigating mechanisms that mediate the metabolic syndrome phenotype, 2) Developing a single dose injectable sterilant by employing GnRH-toxin conjugates to ablate gonadotropes, and 3) Measuring the metabolic rate of embryonic fish to predict future growth rate.
Adjunct Faculty & Research Interests

Tod C. McCauley (todmc@tmlabs.com or 520-885-5125) Sr. Licensing Manager, Tech Transfer AZ- Ph.D. Arizona, 1998.
Research focuses on antibody production/characterization, DNA isolation, cDNA cloning, ELISA, embryo culture, Glycoprotein modification/analysis, HPLC Immunoblotting, Immunoflourescence, immunochemistry, In vitro fertilization , oocyte maturation, peptide mapping, radiolabeled ligand-binging assays, recombinant protein expression/purification, RFLP, RT-PCR, 1- and 2- D SDS-PAGE.

Patricia B. Hoyer (hoyer@u.arizona.edu or 520-626-6688) Professor, Physiology - Ph.D. Wyoming, 1981.
Research includes studies of hormonal regulation of ovarian function in the developing follicle and corpus luteum as it relates to normal physiology and toxicology.

David W. Schafer (dschafer@ag.arizona.edu or 928-567-6954 x 11) Resident Director V-Bar-V Ranch- Ph.D. Colorado State, 1991.
Research at the V Bar V Ranch addresses environmental, wildlife and domestic livestock issues applicable to Arizona and the Southwest. The historic V Bar V is a public lands grazing allotment totaling 71,000 acres that runs about 30 miles east from Camp Verde along the Mogollon Rim toward Happy Jack. Research involves an applied approach to problem-solving, rather than laboratory studies in basic science. Current studies focus on three main areas: cow herd management; range and watershed activities, and wildlife interactions, particularly with elk.
Programs of Study

The School of Animal and Comparative Biomedical Sciences offers graduate studies in Animal Science leading to both M.S. and Ph.D. degrees with a major in Animal Sciences. The school is housed in the College of Agriculture and Life Sciences. Numerous opportunities exist for course work and research in areas ranging from current animal production techniques to recombinant DNA research on fundamental animal and cell physiology problems. **Areas of Study include:**

- Beef Management
- Dairy Management
- Environmental Physiology
- Equine Management
- Genetics
- Meat Science
- Muscle Biology
- Race Track Industry Program
- Reproduction and Breeding

The faculty also participates in interdepartmental committees on genetics, nutritional sciences and physiological sciences in graduate programs leading to a Ph.D. degree. There are two options for the M.S. degree. The first is the traditional research based degree culminating in a thesis (thesis option). The second is a non-thesis option with an emphasis on preparing students for professional opportunities in animal agriculture-related business. The non-thesis option includes a professional development project generated through internship or applied, business-related research. The non-thesis option is **not** designed to prepare students for advancement into the Ph.D. program.
Master of Science (Non-Thesis Option)

Admission Requirements

Admission to the M.S. (non-thesis option) depends on the completion of a Bachelor’s Degree. Typical students admitted have a GPA of a 3.0 or higher. A TOEFL score of 550 (paper-based) 79 (internet-based) and IELTS of 7 (overall band score) or higher is required for international students. Other requirements include:

- Graduate Record Examination (GRE) or RTIP option only: Graduate Management Admissions Rest (GMAT)
- Three Letters of Recommendation
- Statement of Purpose

UA GradPath

Forms are completed and submitted electronically. GradPath is the Graduate College’s new nearly paperless degree audit process that will make submission and approval of all necessary forms much easier. Students fill-out and submit forms online through UAaccess Student. Once a student is logged into UAaccess from the main page of their Student Center, the student clicks the drop down menu (it reads other academics in the box) and scrolls down until they find “GradPath Forms”. After the student clicks the link it should bring them to this landing page:
To access GradPath the student must click on the GradPath Forms Link. One can check the status of particular forms at any time. GradPath lets students know what forms next need their attention (See below).

The following forms must be filled out by the Master’s Candidate via GradPath, unless otherwise noted:

1. Evaluation of Transfer Credit (If applicable)
2. Master's/Specialist Plan of Study
3. Master's/Specialist Committee Appointment Form--needs to be submitted by every Master's/Specialist student whether or not that student has a committee.
4. Master's/Specialist Completion Confirmation Form--Graduate Coordinators submit this form on behalf of the student
5. Exit survey

Forms have some automatic checking built-in that will prevent common errors (e.g., typos in course numbers, illegible faculty names, etc.). There is also some built-in logic to notify Students/Major Advisors/Graduate program coordinators when there is a problem with a form, such as courses outside the time limit. Such messages include links to policy. Then the automated workflow engine will route the electronic forms to everyone who needs to see or approve them. The following diagram is an example of the routing approval path:

The timeline that these need to be submitted by can be found at Graduate College Website by going to Policies and Procedures>Important Deadlines.

Course Requirements
A minimum of 30 units of graduate credit are required. All the units of coursework in the major field of the student must be at the 500 level or above can be applied to the program of study. One half of the required units must be in courses in which regular grades (A,B,C) have been earned (ie. no more than half the units can be graded S or P). Courses that earn a D cannot be counted toward degree.

Student must complete a minimum of 3 units of Statistics, 3 units of business coursework and 2 units of seminar (ANS 696A or ANS 696B for RTIP students). Additional requirements for completion of the degree will be determined by the Major Advisor and The Graduate Advisory Committee.

Students transferring to the University of Arizona with graduate credits from other institutions can petition to apply up to 12 graduate credits to the major in this program. However, only graded courses are acceptable and the transfer credits must be approved by the Graduate Committee. If the student is transferring courses, he/she will need to fill out the Evaluation of Transfer Credit Form via GradPath.

**Major Advisor and The Graduate Advisory Committee**

Upon acceptance each student is assigned a Major Advisor in the area of the student’s interest. The Major Advisor must be a tenure-track faculty member (Assistant Prof., Associate Prof., or Professor) and will assist the student in the selection of their Graduate Advisory Committee. The student’s Graduate Advisory Committee will consist of their Major Advisor and two other faculty members. The two additional committee members must meet the following qualifications:
- At least one member must be on the Animal Science Faculty
- At least one needs to be a tenure-track faculty member

If the one of the two additional member of the committee is not a current tenure track member, he or she must be approved by the Graduate College as a special member. If the student needs to get a Special Committee Member approved, they need to contact the Graduate Program Coordinator as soon as possible. The Graduate Program Coordinator will initiate the process and fill-out the necessary forms with the Graduate College for approval of the special member.

The Major Advisor and The Graduate Advisory Committee will supervise curriculum development and the professional development project. The Graduate Advisory Committee will also be responsible for the approval of the project report and for the final examination. Once the Graduate Advisory Committee is selected the student should submit the **Master's/Specialist Committee Appointment Form** via GradPath.

**Plan of Study**

In conjunction with his/her major professor, each student is responsible for developing a Plan of Study, during the first few months in residence. This Plan of Study is to be submitted to the Graduate College no later than the second semester in residence.

All deficiencies must be satisfied before the Plan of Study is approved. The Plan of Study identifies (1) courses the student intends to transfer from other institutions; (2) courses already completed at the University of Arizona which the student intends to apply toward the graduate degree; and (3) additional course work to be completed to fulfill degree requirements.
Once the Plan of Study has been agreed upon by the student and their graduate committee, the student should submit the Plan of Study form via GradPath. After submission, the Plan of Study must have the approval of the following people in this order: The Animal Sciences Graduate Program Coordinator, The Major Advisor, The Animal Science Program Graduate Committee Chair and lastly the Graduate College (Degree Counselor). All approvals are completed in GradPath. Once the Graduate Program Coordinator has approved the Plan of Study, he/she will notify the student and it is their responsibility to notify their Major Advisor to do the same.

There is a Fee associated with the submission of your Plan of Study.

**Academic Performance**

The Graduate College Policies and Procedures state that “No student will be recommended for award of an advanced degree unless he/she has achieved a grade average of 3.0 or better on: (a) on all coursework taken for graduate credit and (b) on all coursework included specifically in his graduate program.” It should be understood that any student who fails to achieve a GPA of 3.0 for two consecutive semesters is in very serious academic trouble. The Graduate Advisory Committee of such a student should meet at the earliest possible time to determine whether a student should be continued on in their degree program or withdrawn from the program.

**Teaching Component**

Generally for the M.S. Non-thesis option, there is no teaching component required. However, this can vary from student to student.

**Professional Development Project**

A professional development project (minimum of 6 units of credit) is required for all students in the non-thesis option. The project will be based upon an internship, special problem or research activities that facilitate the student’s preparation for employment in agribusiness. A professional development project report must be submitted to and approved by the student’s graduate committee. After making any required corrections, the candidate submits two copies (one to the Animal Sciences Graduate Program Coordinator and one to The Graduate Advisory Committee) on or before the date specified in the Graduate College’s Calendar for the candidates. (UA Graduate College Website>Policies and Procedures>Important Deadlines Non-Thesis MS Students follow the same deadlines as Thesis MS students.)

**Final Examination**

A candidate for the Master’s degree (non-thesis option) must present a seminar on their professional development project and must pass a final oral examination administered by the student’s graduate committee. The examination will cover the project and general topics in the field of study. The result of the examination must be reported to the Graduate College within two weeks. In order to report the completion of a degree, the major advisor must first notify the Animal Sciences Graduate Program Coordinator. The Graduate Program Coordinator will then submit a Master’s/Specialist Completion Confirmation Form on behalf of the student, which will then be forwarded to the Animal Sciences Degree Counselor (Graduate College) for finalization.
Any candidate who fails the final examination may, upon the recommendation of the major department and approval of the Graduate College, be granted a second examination after a time period of at least one semester. The report of successful completion of all requirements (Report on the Final Examination and the Completion of Requirements for the Master's Degree) must be made to the Graduate College at least four weeks before the date on which degrees are awarded and the student must be registered during the semester in which they graduate.
Admission Requirements

Admission to the M.S. (thesis option) depends on the completion of a Bachelor’s Degree. Typical students admitted have a GPA of a 3.0 or higher. A TOEFL score of 550 (paper-based) 79 (internet-based) and IELTS of 7 (overall band score) or higher is required for international students. Other requirements include:

- Graduate Record Examination (GRE) or RTIP option only: Graduate Management Admissions test (GMAT)
- Three Letters of Recommendation
- Statement of Purpose

Undergraduate preparation must include:

- 3 units of college level algebra (calculus recommended)
- 1 year of both with laboratories (8 units/course):
  - General biology
  - Organic Chemistry

Other preferred preparation includes:

- Advanced courses (300-400 lvl) in Animal Sciences (ie. Animal Behavior, Animal Nutrition, Meat Science)
- Anatomy and/or Physiology Courses
- Physics
- Analytical Chemistry
- Biochemistry

UA GradPath

Forms are completed and submitted electronically. GradPath is the Graduate College’s new nearly paperless degree audit process that will make submission and approval of all necessary forms much easier. Students fill-out and submit forms online through UAccess Student. Once a student is logged into UAccess from the main page of their Student Center, the student clicks the drop down menu (it reads other academics in the box) and scrolls down until they find “GradPath Forms”. After the student clicks the link it should bring them to this landing page:
To access GradPath the student must click on the GradPath Forms Link. One can check the status of particular forms at any time. GradPath lets students know what forms next need their attention (See below).

The following forms must be filled out by the Master’s Candidate via GradPath, unless otherwise noted:

1. Evaluation of Transfer Credit (If applicable)
2. Master's/Specialist Plan of Study
3. Master's/Specialist Committee Appointment Form--needs to be submitted by every Master's/Specialist student whether or not that student has a committee.
4. Master's/Specialist Completion Confirmation Form--Graduate Coordinators submit this form on behalf of the student
5. Exit survey

Forms have some automatic checking built-in that will prevent common errors (e.g., typos in course numbers, illegible faculty names, etc.). There is also some built-in logic to notify Students/Major
Advisors/Graduate program coordinators when there is a problem with a form, such as courses outside the time limit. Such messages include links to policy. Then the automated workflow engine will route the electronic forms to everyone who needs to see or approve them. The following diagram is an example of the routing approval path:

The timeline that these need to be submitted by can be found at Graduate College Website by going to Policies and Procedures>Important Deadlines.

**Course Requirements**

A minimum of 30 units of graduate credit are required. Of the 30 units, 24 of the units must be non-thesis units. All the units of coursework in the major field must be at the 500 level or above can be applied to the program of study. One half of the required units must be in courses in which regular grades (A, B, C) have been earned. Students must complete a minimum of 3 units of statistics coursework, 3 units of physiology coursework, a minimum of 1 unit of thesis and 2 units of presenting seminar (ANS 696). At least 5 graded units must be from courses offered by The School of Animal and Comparative Biomedical Sciences. Additional requirements for completion of the degree will be determined by the Major Advisor and The Graduate (Thesis) Committee.

Student transferring to the University of Arizona with graduate credits from other institutions can petition to apply up to 12 graduate credits to the major in this program. However, only graded courses are acceptable and the transfer credits must be approved by the Graduate Committee. If student is transferring courses student will need to fill out the **Evaluation of Transfer Credit Form** via GradPath.

**Major Advisor and Graduate (Thesis) Committee**

Upon acceptance each student is assigned a Major Advisor in the area of the student’s interest. The Major Advisor must be a tenure-track faculty member (Assistant Prof., Associate Prof., or Professor) and will assist the student in the selection of their Graduate (Thesis) Committee. The student’s Graduate (Thesis) Committee will consist of their Major Advisor and two other faculty members. The two additional committee members must meet the following qualifications:

- At least one member must be on the Animal Sciences Faculty
- At least one needs to be a tenure-track faculty member
If the one of the two additional members of the committee is not a current tenure track member, he or she must be approved by the Graduate College as a special member. If the student needs to get a Special Committee Member approved, they need to contact the Animal Sciences Graduate Program Coordinator as soon as possible. The Animal Sciences Graduate Program Coordinator will initiate the process and fill-out the necessary forms with the Graduate College for approval of the special member.

The Major Advisor and The Graduate (Thesis) Committee members will supervise curriculum development and thesis research. The Graduate (Thesis) Committee will also be responsible for the approval of the thesis and for the final examination. Once The Graduate (thesis) committee is selected, the student should submit the **Master's/Specialist Committee Appointment Form** via GradPath.

**Plan of Study**

In conjunction with his/her Major Advisor, each student is responsible for developing a Plan of Study during the first few months in residence, to be submitted to the Graduate College no later than the second semester in residence. All deficiencies must be satisfied before the Plan of Study is approved.

The Plan of Study identifies (1) courses the student intends to transfer from other institutions; (2) courses already completed at the University of Arizona which the student intends to apply toward the graduate degree; and (3) additional course work to be completed to fulfill degree requirements.

Once the Plan of Study has been agreed upon by the student and their graduate committee, the student should submit the **Plan of Study Form** via GradPath. After submission, The Plan of Study must have the approval of the following people in this order: The Animal Sciences Graduate Program Coordinator, The Major Advisor, The Animal Sciences Graduate Committee Chair and lastly the Graduate College (Degree Counselor). All approvals are completed in GradPath. Once the Graduate Program Coordinator has approved the Plan of Study, he/she will notify the student and it is their responsibility to notify their Major Advisor to do the same.

There is a **Fee** associated with the submission of your Plan of Study.

**Academic Performance**

The Graduate College Policies and Procedures states that “No student will be recommended for award of an advanced degree unless he/she has achieved a grade average of 3.0 or better on: (a) on all coursework taken for graduate credit and (b) on all coursework included specifically in his graduate program.”

It should be understood that any student who fails to achieve a GPA of 3.0 for two consecutive semesters is in very serious academic trouble. The graduate committee of such a student should meet at the earliest possible time to determine whether a student should be continued on in their degree program or withdrawn from the program.

**Teaching Component**

Teaching experience is an important part of graduate training in the Animal Science Graduate Program. All graduate students shall participate in the teaching activities of the department in one course per year, and all students must go through the University's TATO and FERPA Training.
**Thesis Requirements**

The Graduate College doesn’t require Master’s students to archive their Thesis with the University Library; however, some departments or Thesis chairs may require it. If the department or Thesis chair doesn’t require it then it is your choice whether or not to archive the Thesis. In the Animal Science Program, it is only required that you submit a copy to the Graduate Program Coordinator, upon completion of your degree.

If you would like to archive your Thesis with the University Library there is an additional charge billed to your Bursar's account. The Thesis must be submitted by the Master's Degree Requirements deadline in order to graduate in a specific term; However if you do decide to archive your Thesis, the Graduate College has provided **Sample Pages** for use in your Thesis. These samples represent the first two pages of your Thesis. Additionally, the Graduate College has **Dissertation and Thesis Formatting Guides** available in order to assist students with formatting their Thesis. Please review the manual prior to submitting your work to the UMI website. Please visit the Graduate College website to find guides for formatting and submitting your Thesis (Grad College Website> Policies and Procedures>Dissertations/Theses)

**Final Examination**

A candidate for the Master’s degree (thesis option) must present a seminar on their thesis and must pass a final oral examination administered by the student’s Graduate (Thesis) Committee. The examination will cover the thesis and general topics in the field of study. The result of the examination must be reported to the Graduate College within two weeks. In order to report the completion of a degree, the major advisor must first notify the Graduate Program Coordinator. The Graduate Program Coordinator will then submit a **Master's/Specialist Completion Confirmation Form** on behalf of the student, which will then be forwarded to the Animal Science Degree Counselor (Graduate College) for finalization.

Any candidate who fails the final examination, upon the recommendation of the major department and approval of the Graduate Council, may be granted a second examination after a time period of at least one semester. The report of successful completion of all requirements (Report on the Final Examination and the Completion of Requirements for the Master’s Degree) must be made to the Graduate College at least four weeks before the date on which degrees are awarded and the student must be registered during the semester in which they graduate.
M.S. Degree Program Timeline

YEAR 1

1. Develop a proposed PLAN OF STUDY in consultation with your major professor by the end of your first semester. This will establish a set of courses that are required for your program.

2. Submit the PLAN OF STUDY Form (via Gradpath) during your second semester.

3. Any courses that you plan on transferring should be transferred by the end of Year 1. (Using Evaluation of Transfer Credit Form via GradPath)

4. Elect your Graduate Committee (Advisory or Thesis), with the help of your major advisor. After you have selected your graduate committee members complete the Master’s/Specialist Committee Appointment Form in GradPath. This should be completed by the end of your first year.

5. Make sure you have one meeting with your Graduate Committee during Year 1.

6. If you have elected or the Graduate Committee has suggested lab rotations, meet with the 2 or 3 faculty members you have selected and design the goals of the rotation. Submit the completed lab rotation form upon completion.

7. Submit the Annual Progress Report in February (All student who are receiving funding must complete this by Feb 1st)

YEAR 2

1. Submit your Annual Progress Report in February (All student who are receiving funding must complete this by Feb 1st)

2. Make sure you have your 2nd committee meeting by the end of your 3rd semester.

3. Thesis should be completed by end of your second year. Once you have passed your final examination and completed your thesis with necessary revisions, your Major Advisor should notify the Animal Sciences Graduate Program Coordinator so he/she can fill out the Master’s/Specialist Completion Confirmation Form.

   a. At this time you should also have your major advisor complete the change of grade form for any K grade you may have (For either research (900) or thesis (910).

4. If you decided to archive your thesis, please see the deadlines on the Graduate College website.

   a. To archive a thesis you will need to submit a statement by author page signed by your major advisor declaring that you have passed your final exam.
Doctor of Philosophy

Admission Requirements

Students are usually admitted to the Ph.D. program after completing a Master’s Degree. Students with M.S. degrees from other universities are encouraged to apply. It is recommended that potential students have either a B.S. degree or a B.S. and M.S. degree in animal, biological, physical, or chemical sciences. The M.S. requirement may be waived for unusually qualified candidates, but a M.S. degree is strongly recommended. Students must have a GPA of 3.0 or higher (on a 4.0 scale) in their Master’s coursework.

Courses required for admissions include:
- One semester each of Biochemistry, general Physiology and Statistical Methods (3 units/course)
- One year of Organic Chemistry with laboratories (8 units total)

Other requirements include:
- Graduate Readiness Exam (GRE)
- Statement of Purpose
- 3 Letters of Recommendation

Students transferring to the University of Arizona with graduate credit from other universities can petition to apply up to 12 units of graduate credit to the major in this program. To submit a transfer credit evaluation request, use UAccess and GradPath to fill out the necessary forms and submit them electronically.

UA GradPath

Forms are completed and submitted electronically. GradPath is the Graduate College’s new nearly paperless degree audit process that will make submission and approval of all necessary forms much easier. Students fill-out and submit forms online through UAccess Student. Once a student is logged into UAccess from the main page of their Student Center, the student clicks the drop down menu (it reads other academics in the box) and scrolls down until they find “GradPath Forms”. After the student clicks the link it should bring them to this landing page:
To access GradPath the student must click on the GradPath Forms Link. One can check the status of particular forms at any time. GradPath lets students know what forms next need their attention (See below).

The following forms must be filled out by the Doctoral Candidate via GradPath, unless otherwise noted:

1. Responsible Conduct of Research Form
2. Evaluation of Transfer Credit (If applicable)
3. Doctoral Plan of Study
4. Comprehensive Exam Committee Appointment Form
5. Announcement of Doctoral Comprehensive Examination
6. Results of the Oral Comprehensive Examination for Doctoral Candidacy (submitted by committee chair)
7. Verification of Prospectus/Proposal Approval (submitted by Graduate Coordinator)
8. Doctoral Dissertation Committee Appointment Form
9. Announcement of Final Defense
10. Results of Final Defense (submitted by committee chair)
11. The Submission Process

Forms have some automatic checking built-in that will prevent common errors (e.g., typos in course numbers, illegible faculty names, etc.). There is also some built-in logic to notify Students/Major Advisors/Graduate program coordinators when there is a problem with a form, such as courses outside the time limit. Such messages include links to policy. Then the automated workflow engine will route the electronic forms to everyone who needs to see or approve them. The following diagram is an example of the routing approval path:

The timeline that these need to be submitted by can be found at Graduate College Website by going to Policies and Procedures>Important Deadlines.

**Course Requirements**

The equivalent of at least 6 semesters of full-time graduate study is required for the Ph.D. program. A minimum of 36 units of course work in the area of the major subject, 9 units in the minor subject and 18 units of dissertation must be completed. Graduate credit earned at other approved institutions, if accepted by the student’s major department and the Graduate College (see Transfer Credit Evaluation Request Form on GradPath) may be counted toward this degree.

You must meet the minimum requirements established for the Master’s degree in Animal Sciences. Additional required graduate courses are: three units of statistical design, three units of biochemistry) and two units of seminar (ANS 696). All required units of credit in the major must be at the 500 level or above at the University of Arizona (or in the case of transfer units, their equivalent at other institutions). At least 22 units must be courses in which regular grades (A, B, C) have been earned. A maximum of 10 units of individual studies (ANS 599, 699 or 900) will be allowed for use toward the Ph.D. degree. Additional requirements for completion of degrees will be determined by the student’s Major (Dissertation) Advisor and their Graduate (Dissertation) Committee but must include a minimum of six units from departmental graduate courses.

**Major (Dissertation) Advisor and Graduate (Dissertation) Committee**
The Major (Dissertation) Advisor serves as not only an advisor, but also a mentor for a Doctoral Candidate. An incoming student may be designated a temporary Major Advisor. However during the first year, the student needs to select a permanent Major Advisor that is approved by the Animal Science Graduate Committee. A student is allowed to change Major Advisors with the Animal Science Graduate Committee approval however a student must have a Major Advisor to maintain satisfactory academic progress.

The Graduate (Dissertation) Committee consists of at least 5 members: the Major Advisor, two graduate Animal Sciences faculty members and 2 members from the department of the minor area of study. Four out of the five committee members, including the Major Advisor must be a tenure track faculty member (Assistant Prof., Associate Prof., or Prof.). In appropriate instances, a faculty member from an outside department other than that of the minor area of study may be substituted for one departmental participant. Such an appointment requires approval of the Dean of the Graduate College via petition. Remember all committee member are expected to attend your final examination in its entirety. Once the Graduate (Dissertation) Committee members are selected, the Comprehensive Examination Committee Appointment Form must be submitted via GradPath before the student takes their Comprehensive Examination.

Qualifying Examination

A qualifying examination or diagnostic evaluation may be required to demonstrate acceptability to pursue the doctorate as well as to determine areas of study where further course work is necessary. It assists in developing the plan of study that is tailored to each student’s level as a Ph.D. candidate. The examination should be taken during the first semester of the student’s residence.

Plan of Study

In conjunction with the Major Advisor, the student is responsible for developing a Plan of Study in the first year in residence, to be filed with the Graduate College no later than the third semester in residence. The Plan of Study identifies: 1) Courses the student intends to transfer from other institutions 2) Courses already completed at the University of Arizona, which the student intends to apply toward the graduate degree and 3) Additional course work to be completed in order to fulfill degree requirements.

The Graduate (Dissertation) Committee helps the student plan the Doctoral Degree – Plan of Study. They help to determine what courses a student needs to take and are responsible for evaluating a student’s progress during all phases of training. Additionally, the qualifying exam that was previously mentioned helps the committee determine what courses will be in the Plan of Study.

Once the Plan of Study has been agreed upon by the student and their graduate committee, the student should submit the Plan of Study Form via GradPath. After submission, The Plan of Study must have the approval of the following people in this order: The Animal Sciences Graduate Program Coordinator, The Major Advisor, The Animal Sciences Graduate Committee Chair and lastly the Graduate College (Degree Counselor). All approvals are completed in GradPath. Once the Graduate Program Coordinator has approved the Plan of Study, he/she will notify the student and it is their responsibility to notify their Major Advisor to do the same.

Academic Performance

The Graduate Student Handbook
The Graduate College Policies and Procedures states that “No student will be recommended for award of an advanced degree unless he/she has achieved a grade average of 3.0 or better on: (a) on all coursework taken for graduate credit and (b) on all coursework included specifically in his graduate program.”

It should be understood that any student who fails to achieve a GPA of 3.0 for two consecutive semesters is in very serious academic trouble. The graduate committee of such a student should meet at the earliest possible time to determine whether a student should be continued on in their degree program or withdrawn from the program.

**Teaching Component**

Teaching experience is an important part of graduate training in the Animal Sciences Program. All graduate students shall participate in the teaching activities of the department in one course per year, and all students must go through the University's GAT orientation.

**Comprehensive Examination for Advancement to Candidacy**

Before admission to candidacy for the doctoral degree, the student must pass a written and oral Doctoral Comprehensive Examination in the chosen field of study. The comprehensive exam will be held when essentially all course work has been completed. The exam can be taken until 3 months before the final oral examination. This examination will test the student’s general knowledge of Animal Sciences and will test in greater depth fields of specialization within the major and minor subjects of study. Both the written and the oral exam will cover major and minor fields of study.

The oral portion must be taken within 2 month of completing and **passing** the written portion. It is recommended that the student arranges a committee meeting approximately six weeks prior to the proposed examination date. At this meeting the student’s general research interests, background and projected time table for the exam can be discussed. The committee can use this as an opportunity to inform the student of its general expectations and make suggestions on how to prepare (i.e. Suggested readings). Students must remember there is a difference between the Final Oral Examination (Dissertation Defense) and your Oral Comprehensive Exam, you need to pass the oral comprehensive exam to advance to your Final Oral Examination. Additionally, when students have decided on the date they will be completing their Comprehensive exam they must file an **Announcement of Doctoral Comprehensive Examination Form** via GradPath.

*Written Comprehensive Examination*

This portion of the Comprehensive Exam will consist of 1-3 questions from each Graduate (Dissertation) Committee Member. Each committee member will be allotted a three-hour block of time and all questions must be completed within a one-week period. Meaning if a student has 5 committee members one day he would complete member 1-3’s questions and the next day the student would complete member 4 and 5’s questions. Members submitting the questions will then grade them and determine if the student passed or failed the questions. The student must successfully answer questions from four of the five committee members in order to advance to the oral exam. If the student doesn’t pass on their first attempt they are allowed to re-take the written portion a maximum of 2 times with the approval of The Animal Sciences Graduate Committee.
Upon successful completion of the written portion of the Comprehensive Exam, the Oral Comprehensive Exam is conducted in front of the graduate committee. As stated previously, the oral portion of the comprehensive exam must be completed at the latest 2 months after the written portion. Oral Comprehensive exams are scheduled through the department.

This is where the faculty committee members have both an opportunity and obligation to have the student show their broad knowledge of the chosen field of study and sufficient depth of understanding in areas of specialization. Although, a discussion of the proposed dissertation research may be of importance, it can’t be the only topic that is discussed. In order to fulfill the requirements of the oral portion the student must be able to display to the committee that they have depth of knowledge in their area of study, not just in their research.

In order for a student to pass the oral portion, the student’s Graduate (Dissertation) Committee “must be able to attest that the student has demonstrated a professional level of knowledge expected of a junior academic colleague.” If the student has passed both the oral and written portions, The Graduate (Dissertation) Committee Chair (the Major Advisor) needs to submit the Results of Oral Comprehensive Exam via GradPath. If the student fails their first attempt the graduate college allows for only one more attempt. The Graduate College requires a four-month waiting period between attempts.

When the student has an approved doctoral Plan of Study on file with the Graduate Student Academic Services Office, has satisfied all course work, language, and residence requirements, and passed the written and oral portions of the Comprehensive Examination their bursar account will be billed the fee for candidacy, dissertation processing, and archiving. This is a one-time fee and the student will not be billed again if they change their anticipated graduation date. Copyrighting is optional and carries an additional fee.

At this time they shall also submit a Doctoral Dissertation Committee Appointment Form via GradPath. The Doctoral Dissertation Committee Appointment form reports the student’s planned dissertation committee, dissertation title (subject to change) and the expected graduation term. It requires approval from the dissertation director and the major and minor departments. The approval signature from the minor department on this form indicates both approval of the reported dissertation committee and confirmation that the student has satisfied all requirements for the minor. (This should be complete roughly 6 months prior to the scheduled Final Oral Exam (Dissertation Defense)).

The Dissertation Proposal/Prospectus

In the semester following the comprehensive exams, students should complete and present to The Graduate (Dissertation) Committee a proposal that provides compelling rationale and research plan for the dissertation topic. The dissertation proposal/prospectus is not part of the Comprehensive Examination, but it is a key requirement of the Animal Sciences Program. It will provide a valuable opportunity for students to develop grant-writing skills and to receive feedback from their committees at a relatively early stage of the experiments. The goal of this is to develop a rigorous and feasible experimental plan that will serve as a guide for the dissertation research, although the experiments may be modified if necessary as the work progresses. The proposal should be written in the USDA or NIH format but with the following page limitations (please note: pages should be single spaced):
Many students will have already initiated the dissertation project. Preliminary data are not required, but may be included in the background section of the proposal.

The completed draft of the proposal should be provided to The Graduate (Dissertation) Committee for comment and a meeting of the student and the committee should take place at which time the student will field questions about the rationale, design, and interpretation of the proposed experiments. Once the dissertation proposal has been revised to the satisfaction of all members of the dissertation committee, the chair of the committee is to notify the Animal Science Graduate Program Coordinator, who will submit the Dissertation Proposal Form (via GradPath) on behalf of the student. A copy of this proposal should also be submitted to the Animal Science Graduate Program Coordinator to keep on file, to be included in the student’s annual performance review.

**Ph.D. Dissertation**

Early in the dissertation process, each student should meet with his/her Graduate (dissertation) committee to discuss the scope and progress of the dissertation research. The candidate should meet with the committee each year to review this information and formulate any new plans that seem appropriate. All Ph.D. programs require the completion of a dissertation, which meets required standards of scholarship and demonstrates the candidate’s ability to conduct original research. **It is expected that dissertation research will result in AT LEAST two peer reviewed journal articles.**

After the submission and approval of the student’s dissertation proposal (before any actual research is conducted) the student needs to get the proper approval for research. Listed are the locations that needed to be contacted depending on what type of research you are conducting:

- Office for the Responsible Conduct of Research (Human Subjects and/or Vertebrae Animals)
- **Institutional Animal Care and Use Committee** (IACUC) (Vertebrae Animals. Students that are conducting research with animals must have an approved IACUC protocol before starting their research with animals.
- Human Subjects Committee (Humans)

Instructions relating to the format of the dissertation and required abstracts are included in the Dissertation Formatting Guide (including those that include previously published papers, papers accepted for publication, and/or papers with multiple authors). For more information, see the Graduate College website

**Upon completion of the dissertation, the student should submit a completed copy of the rough draft to each member of the graduate (dissertation) committee AT LEAST three weeks prior to the Final Oral Examination (Dissertation Defense).**

**Final Oral Examination (Dissertation Defense)**

The University of Arizona
After the submission of the dissertation, the student is ready to move on to the Final Oral Examination. The date, time, and location of the final examination must be scheduled with the Graduate College in advance using the Announcement of Final Oral Defense Form in GradPath. This form should be submitted far enough in advance of the examination that all approvers can grant their approval in time for the form to reach the Graduate College one week prior to the exam.

The Graduate College will place an announcement on the UA master calendar to invite the public to attend the candidate's presentation of his or her work. Final Oral Examinations should be scheduled during days when the University is in session and during normal business hours. Permission to hold examinations during University holiday closures or outside of normal University business hours may be granted by Graduate College.

The Major Advisor presides over the examination. The initial seminar portion during which the student presents the dissertation research and entertains questions is open to the public. The Graduate (Dissertation) Committee's deliberation is closed to the public.

There is no minimum time limit for the Final Oral Examination, but the entire proceedings may not exceed three hours. Members of the committee must ALL be present for the ENTIRE examination. Should special circumstances require a member to attend remotely, prior permission from the Graduate College is necessary.

If the committee requires revisions, those must be done in a timely manner, not to exceed one year. If the revisions are not completed by the dissertation submission deadline for the term when the student defends, the student will be required to register for the next semester and will graduate in the semester when the revisions are complete and approved. If revisions are not done by the end of the time to degree period, the student will have to re-take comprehensive examinations to demonstrate currency of knowledge.

Lastly, after the student successfully passes the Final Oral Exam, the committee chair (Major Advisor) must submit the Results of Final Defense Form in GradPath.

**Final Copies of Dissertation Document**

Following the successful completion of the Final Oral Examination, the candidate submits the dissertation electronically for forwarding to the Library of the University of Arizona and to University Microfilms, Inc (UMI). The Animal Science Program requires that 2 bound copies are provided; one copy is for The School of Animal and Comparative Biomedical Sciences and second one for the Major Advisor. Upon receipt of the finalized dissertation, the Dean of the Graduate College will recommend conferral of the doctoral degree by the Arizona Board of Regents. The student should have all necessary edits completed and use the formatting guide for dissertations provided by the Graduate College. For dissertation submission deadlines, please visit the Grad College website (Policies and Procedures>Important Dates and Deadlines).
Ph.D. Degree Program Timeline

YEAR 1

1. Develop a proposed **PLAN OF STUDY** in consultation with your Major Advisor. This will lay out a set of courses that are required for the program.

2. You must select your Graduate (Dissertation) Committee in consultation with your Major Advisor.
   a. Once your have selected a committee you need to complete the **Comprehensive Exam Committee Appointment Form** via Grad Path.  **(This form MUST be completed prior to your comprehensive exam)**

3. If you have elected or the graduate committee has suggested lab rotations, meet with the two or three faculty members you have selected to complete these with and design the goals of the rotations. Submit the complete lab completion form.

4. Submit the annual progress report in February (Student receiving funding **must** submit this form no later than **February 1st**)

YEAR 2

1. Schedule a meeting with your Graduate (Dissertation) Committee at the beginning of your second year to discuss and set a date for your comprehensive exam.

2. Submit the **Plan of Study Form** via GradPath **no later than your 3rd semester in residence**.

3. Submit your annual progress report in February (Student receiving funding **must** submit this form no later than **February 1st**)

4. Complete most of your course work by the end of your second year.

5. Complete the Comprehensive Exams (Written and Oral). Remember these forms need to be filed via GradPath:
   a. Submit the **Announcement of Doctoral Comprehensive Form** prior to taking Comprehensive Exam
   b. The **Results of Oral Comprehensive Examination for Doctoral Candidacy Form** needs to be submitted, by the committee chair, once a student passes their Comprehensive Exam
   c. Once both the Plan of Study and the Results of Oral Comprehensive Exam are on file with the Graduate College, you must then submit **The Doctoral Dissertation Committee Appointment Form** via GradPath.
YEAR 3

1. Meet with your committee early in the year to ensure progress to your degree.

2. Submit the annual progress report in February (Student receiving funding must submit this form no later than February 1st)

3. Dissertation Proposal should be completed by your 5th semester.
   a. Once it has received approval from your committee, your major advisor MUST notify the Animal Science Graduate Program Coordinator so they can submit the Verification of Prospectus/Proposal Approval Form to the Graduate College and a copy of the proposal should be provided to keep on file.

4. Your Dissertation should be completed mid-way through 6th semester. Penultimate copies of your Dissertation must be submitted to committee members at least three weeks prior to the scheduled final exam.

5. After your dissertation is completed and submitted, you and your committee need to determine the date that your Final Oral Exam will take place. When then specifics are decided and agreed upon, you need to file the Announcement of the Final Oral Exam Form with the Graduate College through GradPath. (Remember Grad College needs to approve the Date of Exam at minimum one week before the exam is to take place.)
   a. After you take and successfully pass your Final Oral Exam, your Major Advisor needs to submit the Results of Final Defense Form in GradPath.

6. Once you have passed your Final Oral Defense and you have made the necessary edits to your dissertation, the final step is to submit the dissertation electronically for forwarding to the Library of the University of Arizona and to University Microfilms, Inc (UMI).

**The Animal Science Program requires that 2 bound copies are provided. One copy is for The School of Animal and Comparative Biomedical Sciences and second one for the major advisor.**
Minor in Animal Sciences

The Ph.D. Minor in Animal Sciences requires eight graduate units (six of which must be A, B, or C grades). Specific courses will be determined by the Animal Sciences faculty representatives on the student’s graduate committee.
Program Administration

The School of Animal and Comparative Biomedical Sciences-Animal Sciences Program graduate committee and associated subcommittees will be responsible for the administering of all aspects of the graduate program, with the approval of the Director.

These responsibilities include:

- Recruitment and Admissions
- Graduate Student Funding
- Procedure and Policy
- Curriculum
- Graduate Teaching Assignments
- Graduate Student Progress

Recruitment and Admissions

Solicitation of applicants into the M.S. and Ph.D. program in Animal Sciences will be done by The School of Animal and Comparative Biomedical Sciences (ACBS) by building on the established reputations of the faculty and existing communication networks, including outreach and the ACBS web page. The graduate program will also be promoted by judicious use of advertisement, brochures, and posters.

The final selection of students to be admitted into the program will be made by the Animal Sciences Graduate Committee, and will be determined from the ranked order of applicants based on their prior academic performance, relevant experience, letters of recommendation, standardized test scores, statement of purpose, and other standard measures (but not including mechanism of financial support).

Student Admittance Procedures

Before additional students are admitted to the program, the current student roster is examined and predications are made regarding the number of students that will require funding (and at what level) for next year. A potential primary funding source is identified for each continuing student.

Based on projected program funding and the number of current students supported, the number of student to be admitted with funding is established. The graduate committee will identify both continuing and new students eligible for departmental support. The list will be submitted to the Director for approval. Modifications to the list should be approved by the graduate committee.

Graduate Student Funding Policy

The Graduate Student Handbook
The funding policy is designed to enable The School of Animal and Comparative Biomedical Sciences to accept and retain a sufficient number of students to maintain the viability of the Animal Science Program. Because of the intense nature of graduate study, students receiving funding from the department are strongly discouraged from seeking additional employment.

The funds, utilized by The School of Animal and Comparative Biomedical Sciences, to support graduate stipends are derived from Research Assistantships, Recruiting Fellowships, Teaching Assistantships, Scholarships (eg. Cowden Fellowships) and faculty contributions. In general, the total of these funds dictate the number of students supported and are viewed as the core budget of the program. Because of the diversity of these funding sources and requirements for accountability, a general fund cannot be established. Funds which have stipulations regarding the type of research training to be supported will be dispensed to students in qualifying disciplines at the discretion of the graduate committee.

Program financial support for graduate students shall be no more than two years (four semesters) for M.S. candidates and four years (eight semesters) for Ph.D. candidates entering the program with M.S. from another institution. Program financial support for students obtaining both an M.S. and a Ph.D. from the University of Arizona – Animal Science Program in succession shall be granted no more than five years total. Support for longer periods of time may be provided by major advisor/ professor from grant monies but not from the program’s funds. Program support will be provided for all qualified graduate students during their first year of study, except in some cases where a mentor wishes to fully fund the student in the first year, deferring to the one year of full program support.

Funding for students beginning their second year of study will become partially the responsibility of the Major Advisor. The portion of funding to be provided by the major professor in the second and subsequent years shall not exceed 50% of the total stipend to be received by the student. Major Advisors should develop the budgets with the exception of contributing 50% of the total stipend. The amount shall be established by the graduate committee in the spring semester when the number of incoming students has been established.

In the event that the student’s advisor suffers a loss of funding, an alternative source of funding from within the Animal Sciences Program should be sought. In the event, that alternative funding cannot be secured, the graduate committee, will attempt, but not guarantee, to provide support on an interim basis for that student.

The current funding procedures and policies of the Program are outlined below

**Stipend Levels**

A stipend level request is submitted to the Dean of the Graduate College in the fall semesters. Once stipend levels are established, regular funding sources are examined and applications are submitted to the Graduate College for recruiting and other fellowships.
Pre-Doctoral Fellowships

The Program also has a system to reward those students who personally enter in competitions for support (e.g., individual fellowships from outside agencies). In the event that a student is awarded at least 50% of funding from outside agencies, the program and/or mentor will continue to provide 50% of the student’s funding. Any funds awarded to the student by the outside agency, above the 50% of program support levels are to remain with the student as a “bonus,” upon approval of the Graduate College.

Graduate Stipend Requirements:

The graduate stipend provided by the School of Animal and Comparative Biomedical Sciences, The State of Arizona or the Cowden Fellowship is intended as a 12-month stipend. The responsibility of the student in accepting this stipend is to carry out their studies and research over the full 12-month calendar year. If the student accepts the full Program/State stipend he/she cannot supplement that stipend in a fashion that detracts from the full commitment to the School/Program. If the student receives only partial support from the Program/State that stipend can be supplemented (by the advisor) to the level to full support but not from receiving any payment of any kind (lump sum, hourly wages, etc.) from their advisor or other University faculty members in excess if the stipend level set by the program each year, unless the student has personally entered into the competitions outlined above.

Students on program stipends are expected to devote a minimum of 20 hour per week to research/teaching/extension activities assigned by the student’s major advisor or the School. This does not include the time in class and may not include time involved on thesis or dissertation research. Note: students are expected to work during time between academic sessions. The times between sessions are not holidays or vacation days. All requests for leave must be approved by the student’s major advisor at least two weeks prior to the absence. Normally, leave is accumulated at the rate of one day per month of employment. The policy does not apply to students who do not receive Department/State funds.

Residency

Because funding sources for graduate students are not constant, no guarantees can be made for out of state tuition waivers. As such, students should attempt to establish residency immediately after arriving to the state and continue to seek/maintain residency until the degree is received.

Funding for Students Enrolling in Interdisciplinary Programs (IDP):

Given the need to maintain a viable, quality Animal Sciences Graduate Program, The School of Animal and Comparative Biomedical Sciences will only consider funding graduate studies for a student enrolled in IDP’s for a single year. In those cases the following criteria must be met:

1) The student has exceptional qualities

2) The student carries out his/her research in the laboratory of a member of the School of Animal and Comparative Biomedical Sciences.
3) The research topic can be considered as an important contribution to “Animal Sciences” by the graduate committee.

4) Ultimately, the credit for the research contributions (publications, presentations at national meetings), will go to The School of Animal and Biomedical Comparative Sciences.

After one year of program funding, the major professor and/or IDP becomes responsible for funding the student. Students that are enrolled in the Animal Science program and want to transfer to another department must notify the graduate committee prior to initiation of the transfer. Upon transfer, funding becomes the responsibility of the other department and/or the advisor.

**Curriculum**

Graduate curriculum and requirements are established by the Animal Sciences Faculty members and must be consistent with the Graduate College requirements.

**Laboratory Rotations:**

A student may request a series of laboratory rotations (maximum of three laboratories). Laboratory rotations will be approved by their graduate committee and are not to exceed two semesters. When students complete a period in a single laboratory they must submit a laboratory report form to Program Committee Chair (see appendix V). The purpose of the form is to ensure a quality laboratory experience for the student.

**Graduate Teaching Assignments**

Teaching experience is an important part of the graduate training program in The School of Animal and Comparative Biomedical Sciences. All graduate students shall participate in the teaching activities of the School. A minimum of one course per year will be required and scope of responsibilities will vary depending on the graduate program you are completing (M.S. or Ph.D.).

All graduate students must go through the University of Arizona's GAT orientation. No teaching is to be assigned the first semester of a student’s program or the last semester for M.S. candidates / last year for Ph.D. candidates. Graduate student responsibilities will include exam proctoring, grading exams and homework, laboratory assistance with lab courses, limited lecture presentations (i.e. one or two lectures in course) and homework and test development.

Teaching assignments will be made by the graduate committee, in consultation with the Director and the School’s Curriculum Committee, prior to the beginning of fall semester for all graduate students in the program. Participation of the student in these activities is critical for continued departmental support. Graduate student performance will be evaluated annually by the appropriate Animal Science faculty and the Graduate Committee. Non-native English speaking graduate students should refer to the Graduate College policies in Appendix IV.
**Graduate Student Progress**

Annual reports will be provided by all graduate students to the graduate committee (form I in Appendix I). These reports, along with academic performance, will be the basis for establishing which students receive initial and continued financial support for the Animal Science Program. Upon review of the Graduate Committee and upon concurrence with the Director, students not making satisfactory progress will not receive continued funding from the program.
Appendix
Appendix I

Animal Science Graduate Student Annual Report & Study Program

Student Name:  Date Submitted:  
Degree Sought:  UA Start Date:  
Major:  Calendar Year:  
Minor:  Expected Grad Date:  
Thesis/Dissertation Title:  

Committee Members
  Major Advisor:  
  Faculty (Major):  
  Faculty (Major):  
  Faculty (Minor):  
  Faculty (Minor):  
  Additional:  

Previous Academic Institutions

<table>
<thead>
<tr>
<th>B.S.</th>
<th>M.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>School:</td>
<td>School:</td>
</tr>
<tr>
<td>Major:</td>
<td>Major:</td>
</tr>
<tr>
<td>GPA:</td>
<td>GPA:</td>
</tr>
</tbody>
</table>

Publications (from previous institutions):

Signatures

Student ______________________________________________  Date: ____________________

Major Advisor_______________________________________  Date: ____________________
Year 1

Coursework: List all courses in which you registered in (including drops and incompletes).

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Course Number</th>
<th>Number of Units</th>
<th>Grade Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Courses Taught: List all courses you assisted with.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Course Number</th>
<th>Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dates of Committee Meetings:

Qualifying Exam Completion Date (Ph.D. Only):

Scientific Meetings Attended:
Publications:

Grants:

Research Progress:
Year 2

Coursework: List all courses in which you registered in (including drops and incompletes).

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Course Number</th>
<th>Number of Units</th>
<th>Grade Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Courses Taught: List all courses you assisted with.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Course Number</th>
<th>Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dates of Committee Meetings:

Date of Final Exam (M.S.):

Date of Comprehensive Written Exam (Ph.D.):

Date of Comprehensive Oral Exam (Ph.D.):

Dissertation Proposal (Date of Completion- Ph.D.):

Scientific Meetings Attended:
Publications:

Grants:

Research Progress:
Year 3

Coursework: List all courses in which you registered in (including drops and incompletes).

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Course Number</th>
<th>Number of Units</th>
<th>Grade Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Courses Taught: List all courses you assisted with.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Course Number</th>
<th>Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dates of Committee Meetings:

Date of Final Exam:

Scientific Meetings Attended:
Publications:

Grants:

Research Progress:
Selecting a Mentor

Each student is expected to select a mentor by the end of their second semester in the program. A mentor is a faculty member who will serve as an advisor, supporter, tutor, master, sponsor and role model. A mentor is expected to interact with the student on a regular basis providing guidance, advice, and the intellectual challenge necessary for the student to complete the degree program. The following suggestions may be of assistance to graduate students in choosing a mentor. The first area has a professional basis and the second a personal basis. The choice of the mentor may be the single most important decision during your graduate career.

When considering the professional aspects of your selection of a mentor the following questions may prove helpful:

1. **What is this individual’s reputation OUTSIDE the University?** Remember, when you have completed your graduate degree and you are looking for a position, your mentor’s reputation will initially be your reputation.

2. **Does your prospective mentor have the funding available to support your research for at least three years?** This area is probably the most problematic for most graduate students. The money needed to fund your research project will most likely come from your mentor’s laboratory. Also, although your stipend money is relatively stable, the mentor is expected to contribute an amount equal to one half of your stipend to the Animal Science Program. Therefore, you will need to know not only the amount of money available for your research, but the stability of the funding.

3. **How does your prospective mentor’s lab operate?** You should critically evaluate the day-to-day operations of the lab and understand the goals of the lab and where you will “fit in”. You should also understand the role of your mentor in those operations. Some principal investigators have lab managers or research assistants who run the laboratory. You should know almost as much about these individuals as about your prospective mentor.

4. **What are the professional requirements of the prospective mentor on such issues as work habits, ethics, sharing of ideas, lab meetings, journal clubs and authorship on papers?**

On the personal side, the answers to the following questions may be extremely helpful:

1. **Is the personality of my prospective mentor compatible with my own?**

2. **Is this individual going to be responsive to my needs and just as important am I going to be responsive to his/her research needs?** When you join a lab, your mentor will have certain
expectations of you and these should be identified when evaluating a prospective mentor. By the same token, what are your expectations of your mentor?

3. **What do other students and faculty think about your prospective mentor?** The collegial relationship of your prospective mentor with others will influence your interaction with other laboratories.

Do not forget the importance of the choice of a mentor and do not make that choice without a great deal of thought. Talk to other people about your prospective mentor by asking probing but not inflammatory questions. Also, provide yourself with honest answers to both the professional and personal aspects of your decision. Once you have identified a mentor, the Program Chairperson must be informed of this selection in writing by you and your mentor.
Appendix III

The Faculty-Graduate Student Relationship

Introduction

Mentoring is an essential part of graduate education. In fact, in many ways, mentoring is the “heart” of graduate education. The mentor is responsible for ensuring the student becomes sophisticated in a discipline or field of study, is challenged intellectually, learns how to think critically and aspires to create new knowledge. In addition, the mentor is responsible for assisting the student in developing the interpersonal skills needed to succeed in the discipline. Mentoring is distinct from advising because it involves a personal relationship. This relationship includes faculty acting as close, trusted, experienced guides and advocates. The nature of the mentorship relationship is different for each student and depends on experience, personal needs and background (e.g. age, gender, ethnicity, and culture). It recognizes that graduate school includes socialization to the values, norms, practices and attitudes of a discipline. Mentoring gradually transforms the student into a colleague. It produces opportunity and growth for both the mentor and the student.

The task of mentoring is multifaceted. “Mentors are advisors, people with career experience willing to share their knowledge; supporters, people who give emotional and moral encouragement; tutors, people who give specific feedback on one’s performance; information about and aid in obtaining opportunities; models, of identity, of the kind of person one should be to be an academic.” (Zelditch, M., 1990, “Mentor Roles” Proceedings of the 32nd Annual Meeting of the Western Association of Graduate Schools). These characteristics of mentors combine to provide a broad-based nurturing of the professional and personal development of the graduate student.

The Graduate Council expects that each entering graduate student will be assigned, or will choose, a mentor soon after their arrival to the University of Arizona. Early stages of a program of study require many decisions on the part of the student, so it is important that the counsel of a mentor be available from the very beginning. The mentor is expected to interact with the student on a regular basis, providing guidance, advice and intellectual challenge necessary for the student to complete his or her program. It should be recognized that the specific mentor and role of the mentor may change over time. Thus, a student may have more than one mentor during the course of a degree program. In practice, a student may have more than one mentor at any given time. That is, although the student may choose a single faculty member as the primary mentor, other individuals may play significant mentoring roles for the student. Having multiple mentors is desirable.

Mentoring is essential to student retention and the quality of the student’s program of study. The Graduate Council expects that each degree-granting unit will have in place a well-defined and active mentoring program, and that it will be reviewed on a regular basis to ensure its effectiveness. New faculty
members should be instructed about the mentoring process during their new employee orientation. Recognizing that mentoring is such an essential part of faculty responsibility, the Graduate Council expects that it will be considered in all faculty merit evaluations and tenure-promotion decisions. Further, the Graduate Council acknowledges that although this position paper is geared mainly toward the mentoring of graduate students, faculty responsibilities for post graduate mentoring (i.e. for postdoctoral students) should follow many of the same principles.

Activities that are important components of the faculty-student mentoring relationships are discussed below. The Graduate Council recognized that the importance of each of these activities will vary with discipline, type of degree being pursued and time as the student progresses through his or her program of study. The activities described here are intended to be suggestions. They represent dimensions of a good mentoring program. However, in the final analysis, the role of the mentor as advisor, supporter, tutor, master, sponsor and model will be more than the sum of these activities and will be highly individualized.

The activities discussed are divided into three parts. The first considers some of the responsibilities of the faculty member and the Animal Science Program. The second considers some of the responsibilities of the student. The third considers the formal academic experiences that are relevant to mentoring. (For the purposes of this handbook, the responsibilities of the Animal Science Program have been omitted.)

**Responsibilities of the Graduate Student**

*Take Charge of the Program of Study*

The graduate student is an active part in the mentoring relationship. The student should keep in mind the responsibilities of the mentor and the Animal Science Program discussed above and at the same time takes final responsibility for tailoring his or her Program of Study. Thus, while seeking guidance from a mentor, the student should make sure the program of study meets his or her needs. The student should keep track of requirements and deadlines. In particular, the student should be well informed about the policies and procedures which can be located using the Graduate College Website. He or she should be self-motivated and take initiative to capitalize on education opportunities. It is important that the student strive to be as independent as possible, though recognizing that independence will increase over the course of the program of study. The student should consult often with student peers who have gone through the various stages of a program of study and seek options about the pros and cons of the various options available.

*Appraise Mentor of Progress and Problems*

Communication with the mentor is essential. The student should keep the mentor fully informed of his or her program status. It is important that the student tell the mentor as soon as problems arise. The student should be honest and open in sharing information. The mentor may have solutions for many of the student problems or know what resources are available to assist with problems.

*Contribute Knowledge*

Students tend to see themselves as on the receiving end in the mentoring relationship. It should be remembered, however, that the student has a great deal to offer to the mentor. The student should
contribute to the knowledge base of the mentor, peers and program. The act of contributing will boost self-esteem, gain additional respect and stimulate the surrounding intellectual environment. Good mentors envision that their students will ultimately surpass them. Thus, good mentors welcome contributions from students and value them as indication of their success as teachers.

Seek Multiple Mentors

It is unlikely that one mentor can fulfill all of the student’s needs. Therefore, the student shall seek out multiple mentors during his or her program of study. These may be chosen to fulfill different intellectual needs, provide specific training opportunities in various skills (e.g. certain laboratory techniques) and obtain emotional support. The search for appropriate mentors need not be restricted to faculty members. Other graduate students can provide significant mentoring experiences. Postdoctoral students, in particular, are often a rich resource for mentoring activities.

Change the Relationship if Necessary

For one reason or another, not every faculty-student mentoring relationship will be the best match. If the student believes the mentoring relationship is not satisfactory, then it may be appropriate to terminate the relationship and find another primary mentor. Or, in the case of where the student may change the area of emphasis in the program of study, it may be beneficial, or even necessary, to seek another primary mentor. There are perfectly good reasons for the entire program of study to be under a single mentor. However, when a change in mentors may seem appropriate, the student should discuss it with the primary mentor and those who might assume the role as the new mentor.

Formal Academic Experiences

Certain formal academic experiences fit well into the faculty-student mentoring relationship. Four are briefly discussed here as examples that mentor and departments may find them useful in the mentoring process.

Introduction to the Discipline

The introduction-to-the-discipline, or core, course is usually designed to bring together all the first year graduate students on a regular basis. Typically, it entails meeting at least once a week with one or two faculty members who supervise the course. Students may discuss with faculty the appropriate journals within the discipline and obtain insights concerning the evaluating and reporting of published literature. Student may make oral presentations, followed by critiques from faculty and other students. They may engage in generic discussions about various subdivisions of the discipline. Or, they may be involved in other activities that provide a broad understanding of the discipline.

Independent Study or Tutorial

An independent study or tutorial is designed to foster faculty-student interaction and to guarantee that the student obtains breadth of knowledge in a variety of areas within his or her discipline. Several independent studies may be completed prior to the preliminary examination. The student typically meets with the faculty member on a regular basis. Such meetings may be used for in-depth discussions of
designated topics. Independent studies may involve reading assignments, library work or other relevant activities.

*Presentation Seminar or Colloquium*

It is important in the preparation of students for professional activities that they gain experience in giving presentations of their own work in front of general audiences. Toward this end, it is a requirement many departments that each doctoral student (and in some cases master’s student) give at least one seminar each year after the first year in residence. The goal is to provide the student with an opportunity to learn how to present material publicly. As such, the seminar presentation prepares the student for presentations at professional meetings, job interviews, or other speaking situations in the discipline. Student seminars also foster collegiality.

*Laboratory Rotation*

In certain disciplines, the laboratory rotation is an important formal academic experience. In a laboratory rotation, the student spends an extended period of time conducting research in the laboratory of a designated mentor. The typical students will rotate through several laboratories during the course of a program of study, giving him/her a breadth of experience and providing information that may be useful in the task of choosing a thesis or dissertation director. The laboratory rotation is an important mechanism because it provides the student with hands-on experience and the opportunity to interact with several faculty members within the discipline.

*Summary*

The Graduate Council believes that every department should have in place a structured mentoring program and that this program should include an appropriate infrastructure (e.g. practices, procedures, courses) to integrate students into the discipline fully. Strong mentoring increases student satisfaction, improves student retention, decreases the time-to–degree and produces a higher quality graduate. Mentoring is at the heart of graduate education. The Graduate Council urges that it be encouraged, practiced and fostered at the University of Arizona.
Appendix IV

Doctoral Degree Checklist of Items to be Filed

1. Responsible Conduct of Research Form
2. Evaluation of Transfer Credit (If applicable)
3. Doctoral Plan of Study
4. Comprehensive Exam Committee Appointment Form
5. Announcement of Doctoral Comprehensive Examination
6. Results of the Oral Comprehensive Examination for Doctoral Candidacy (submitted by committee chair)
7. Verification of Prospectus/Proposal Approval (submitted by Graduate Coordinator)
8. Doctoral Dissertation Committee Appointment Form
9. Announcement of Final Defense
10. Results of Final Defense (submitted by committee chair)
11. The Submission Process (see following Pages)
Master's/Specialist Candidates

Submit **Masters/Specialist Plan of Study.** There are fees associated with this form.

<table>
<thead>
<tr>
<th>Degree Requirements</th>
<th>Graduation Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>All degree requirements must be met by this date (including comprehensive exam, submission of thesis if archiving, defense/revision of thesis, coursework, etc.)</td>
<td>2nd Semester in Residence or your departmental deadline, if earlier</td>
</tr>
</tbody>
</table>

Click for a more detailed timeline.

**Graduation Term**
- Spr '14: 5/16/14
- Sum '14: 8/13/14
- Fall '14: 12/19/14
- Winter '14: 1/13/15

---

**TIMELINE FOR MASTER'S / SPECIALIST CANDIDATES**

- **Submit Masters/Specialist Plan of Study.** There are fees associated with this form.
- **Transfer credit**
  - Submit **Evaluation of Transfer Credit**
  - By the end of first year
- **Graduation Term**
  - Spr 2014
  - Sum 2014
  - Fall 2014
  - Winter 2014
- **Degree Requirements**
  - All degree requirements must be met by this date (including comprehensive exam, defense/revision of thesis, coursework, etc.)
  - **OPTIONAL** in most departments. If archiving, your thesis is also due on this date.
  - May 16, 2014
  - August 13, 2014
  - December 19, 2014
  - January 13, 2015

---

The Graduate Student Handbook
Doctoral Candidates

**Last day suggested to take the Final Oral Examination/Defense** in order to meet the dissertation* submission deadline below. Defending after this date leaves less time for final revisions before the submission can be made. The **Announcement of Final Oral Defense** is due at least seven (7) working days prior to the date of the examination.

<table>
<thead>
<tr>
<th>Graduation Term</th>
<th>Spr '14: 4/21/14</th>
<th>Sum '14: 8/1/14</th>
<th>Fall '14: 11/24/14</th>
<th>Winter '14: 1/5/15</th>
</tr>
</thead>
</table>

**Last day to Submit Dissertations*** to the Graduate Student Academic Services Office.

Click for a more detailed **timeline**.

Dissertations or any other doctoral product such as recital or practice inquiry.

<table>
<thead>
<tr>
<th>Graduation Term</th>
<th>Spr '14: 5/5/14</th>
<th>Sum '14: 8/13/14</th>
<th>Fall '14: 12/8/14</th>
<th>Winter '14: 1/13/15</th>
</tr>
</thead>
</table>

**TIMELINE DOCTORAL CANDIDATES**

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submit Doctoral Plan Of Study. There are fees associated with this form.</td>
<td>3rd Semester in Residence or your departmental deadline, if earlier</td>
</tr>
<tr>
<td>Transfer credit Submit <em>Evaluation of Transfer Credit</em></td>
<td>By the end of first year</td>
</tr>
<tr>
<td>Schedule the Oral Comprehensive Examination with your department. The Results of Oral Comprehensive Exam for Doctoral Candidacy form must be returned to the Graduate College within 24 business hours of the exam. There are fees associated with this form.</td>
<td>As soon as your course work is completed</td>
</tr>
<tr>
<td>Submit Committee Appointment Form</td>
<td>as soon as COMPS are passed</td>
</tr>
<tr>
<td><strong>Graduation Term</strong></td>
<td>Spr 2014</td>
</tr>
<tr>
<td>Last suggested day to take the Final Oral Examination/Defense. The <strong>Announcement of Final Oral Defense</strong> is due at least seven (7) working days prior to the date of the examination.</td>
<td>April 21, 2014</td>
</tr>
</tbody>
</table>
FROM SUBMISSION TO APPROVAL

Checklist for Finishing Your Doctoral Requirements

1. Approval Page (before defense)
Use the sample at http://grad.arizona.edu/degreecert/samples-templates to prepare your approval page. Type the names of the members of your final committee – i.e. those who are actually participating in your defense. Use your defense date as the date for the signature lines.
   a. Copy and insert this page into your dissertation file as page 2. (Include typed names and dates only - no signatures.)
   b. Print out one hard copy to take to the defense and get the signatures of all committee members. Deliver the signed page to Administration 316.

2. Submit Your Dissertation
   b. Submit your dissertation via http://dissertations.umi.com/arizona. Your Graduate College degree counselor will do a format check and will e-mail you to let you know whether changes are needed. This e-mail will be sent to the account you use in the submission profile you establish – be sure to check the spam folder in case the message goes there.
   c. Note: If you elect to copyright your work, the $65 fee for filing the copyright will be charged to your Bursar’s account.

3. Distribution Rights form
You can access this form on the Graduate College web site at (https://grad.arizona.edu/gcforms/degree-certification-forms). This form should be signed and dated and submitted to the Graduate Student Academic Services office. Use the current date unless you are delaying release of your archived work to the public. You can bring the signed form to Administration 316 or fax it to (520) 621-4101.

4. Survey of Earned Doctorates (only for Ph.D and Ed.D candidates)
The ‘Survey of Earned Doctorates’ online survey should be completed when you submit your dissertation to the Graduate College.
   How to submit your Survey of Earned Doctorates:
   1. Please go to https://sed.norc.org/survey and take the survey.
   2. You will receive a PIN and password via email should you need to leave and return to the survey.

5. Graduate College Exit survey
Complete our survey at https://grad.arizona.edu/gcforms/degree-certification/graduate-exit-survey. Once you have completed both Surveys, please be sure to notify your degree counselor.

Requests for Technical Help while Submitting Your Dissertation
The Graduate College can only help with formatting questions. Technical questions such as how to upload files, combine files, change page numbers, etc., should be addressed to OSCR – Office of Student Computing Resources at http://www.oscr.arizona.edu/. Should you have trouble converting WORD to PDF, please contact ProQuest (who maintain the submission site) at etdsupport@proquest.com.
Appendix V

Laboratory Rotation

Student: _____________________________  Date: _____________________________

Before starting the rotation the student and mentor must submit to the Program Committee a brief outline of the anticipated timeline of the rotation, and the work to be performed. Upon completion of the rotation, the student and mentor should submit a one paragraph summary of the work and training accomplished. The student and mentor must also each submit, on separate forms, a confidential evaluation of the rotation.

Outline of the Evaluation:

Signatures

Major Advisor: _____________________________  Date: _____________________________

Student: _____________________________  Date: _____________________________
Appendix VI

Guidelines for Graduate Teaching and Research Assistants/Associates

As one of the leading research universities in the nation, with over 300 outstanding graduate programs, we employ nearly 3,000 graduate students each year. Graduate assistantship/associateship (GA) positions at the University of Arizona are very competitive and we encourage any student interested in a GA position to inquire. GA positions at the University of Arizona are designed to:

- Provide employment and employment benefits to our students while they work to complete their graduate degree.
- Recruit exceptional students to our many graduate programs.
- Provide support to various colleges and departments on campus in fields such as teaching, research, outreach, etc.
- Provide hands on learning which allows the student to develop various educational and professional skills.
- Allow the graduate student to gain an exceptional, varied, and valuable university experience.

Graduate assistants/associates may also have various job titles at the University of Arizona. Each title may have different duties and responsibilities associated with it. Please consult with the hiring department for further clarification of the duties and responsibilities associated with a particular job title. Please note that the title of Graduate Associate is reserved for doctoral degree seeking students only.

If you wish to apply for an assistantship/associateship position, please contact the department that you would like to work for regarding available positions. For academic departments, the best contact is usually the graduate coordinator. For non-academic departments, the best contact is usually the business manager. Unfortunately, there is no complete listing of available graduate assistant/associate positions although some positions are listed on the Wildcat Joblink.

All employees at the University of Arizona, including graduate assistants/associates, must undergo a pre-employment screening process in accordance with ABOR policy 6-709.

Board of Regents’ Mandate

At its October 1985 meeting, the Arizona Board of Regents (ABOR) adopted the following policy:

1. Each university will develop and maintain programs to provide training in basic teaching methods and skills for graduate teaching assistants/associates.

2. Each university will require an appropriate regular faculty member formally assess the teaching performance of each graduate teaching assistant and associate every semester and submit a written
3. Each university shall require the department chair or other appropriate administrator to certify in writing each graduate assistant or associate has clearly demonstrated a high level of oral and written skill in English necessary for effective classroom teaching.

**Status and Definitions**

**Primary Lecturer**: GAT is responsible for syllabus and materials design, course planning, and grading, under supervision.

**Discussion Leader**: GAT attends and participates in a large lecture course and is responsible for leading a small recitation or discussion sections.

**Assistant Lecturer**: GAT works in the classroom with, or under the close supervision of, a faculty member. He or she is responsible for a substantial portion of class lecturers.

**Grader or Scorer**: GAT has little or no contact with students but is responsible for scoring or grading assignments submitted to the primary professor.

**Lab Assistant**: GAT is responsible for instruction in a laboratory in fields such as science and engineering, or in a practical field such as music.

**Research Assistant/Associate (RA)**: Graduate student assists a faculty member with academic research.

**International Teaching Assistant/Associate (ITA)**: The Graduate Council Guidelines provides specific policies for training, supervision, and evaluation of GATs and RAs for whom English is not the first language.

**Terms of Appointment**

A Graduate Assistant must be currently enrolled in a graduate degree program at the University of Arizona and must maintain a 3.0 cumulative GPA for all University-Level Graduate courses. A Graduate Associate must be a student enrolled in a doctoral degree program at the University of Arizona and has either a Master’s degree or 30 units toward a doctoral degree, and must also maintain a 3.00 cumulative GPA for all University-Level Graduate courses. Students must be recommended by a department in order to receive an appointment. See “Academic Eligibility” for more information.

The workload hours range over five categories: ¼ time to ¾ time (20-60 hours/pay period). All assistants are required to carry a minimum of 6 units of graduate credit (for the Fall and Spring semesters) ranging around 10-16 hours depending on the number of hours of work. Non-residents of Arizona are eligible for non-resident tuition waivers. See “Enrollment Status and Limitations”

**Academic Eligibility**

Each student must meet specific eligibility requirements in order to be considered for and obtain a Graduate Assistant/Associate position. Each student must:
- Be admitted to a graduate degree seeking program (Certificate only programs do not satisfy this requirement. Furthermore, Law, Medicine and Pharmacy students are not normally eligible for GA positions unless concurrently enrolled in a regular degree seeking program).

- Have a minimum GPA of 3.0 (If a student is newly admitted, the admission GPA is considered for this requirement). A student must also maintain a minimum GPA of 3.0 during their employment.

- Be enrolled in at least 6 graduate level units for credit (Undergraduate, Outreach, or audited courses do not satisfy this requirement). Hiring departments may require a higher enrollment.

Graduate Associates must, in addition to the above:

- Be enrolled in a doctoral program with either a Master’s Degree or 30 units graduate level credit toward a Doctoral Degree at the University of Arizona.

- Retain associate status unless converted to a Non-Doctoral Degree Program as a Graduate Assistant or change hiring departments.

**Employment Status and Limitations**

Graduate Assistants and Associates are classified as student employees. As such, they are:

1. Limited to no more than 30 hours per week total campus employment (including supplemental compensation) during periods of enrollment to maintain student employee status. Employment for International Students on a F-1 or J-1 Visa must be limited to 20 hours per week while school is in session (summer session is voluntary and is not limited). This is a Federal regulation and the program is responsible for adhering to it. For any questions regarding this regulation, please contact International Student Programs and Services, 621-4627.

2. Exempt from deductions for Social Security taxes (FICA) during semesters or summer sessions when officially enrolled. Minimum enrollment for the exemption is six (6) units per semester for the fall/spring or three (3) units per summer session.

3. Not eligible for participation in the University of Arizona employee benefits program or the State of Arizona Retirement Program.

4. The maximum number of hours per week employment, within the 30 hours/week allowable, varies by enrollment status. Please see the chart on the following page for specific limits. Officially audited courses, dissertation, thesis, undergraduate courses, and supplementary registration are included in this total.

5. Students may hold appointments at GATs in a maximum of two (2) departments, simultaneously.

According to the Arizona Board of Regents’ policy, Graduate Assistants/Associates are not eligible for concurrent employment as faculty or staff. They may however, be eligible for additional compensation on Supplemental Compensation.
**Enrollment Limitations**

*Academic Year (Fall and Spring Semesters)*

Minimum enrollment: Graduate Assistants/Associates are required to enroll for and complete, a minimum of six (6) units of graduate credit each semester, or a higher number if required by the college. Undergraduate and/or official audited courses are not included in this total.

Maximum Enrollment: Maximum unit loads vary depending on the total hours of employment (salaries and supplemental compensation) as follows. Officially audited courses, undergraduate courses, dissertation, thesis, and supplementary registration are included in this total.

*Summer Session:*

Minimum enrollment: Graduate Assistants/Associates are not required to enroll during the summer session to maintain student employment. GATs who are not enrolled, or are enrolled for less than three (3) units per session will have social security (FICA) taxes withheld from their paychecks.

**Additional Requirements for Graduate Assistants/Associates in Teaching**

1. **No Commercial Activity:** The Graduate Council has ruled that GATs not be allowed to engage in any commercial activity relative to the course with which they are assisting at this University (e.g., by selling course materials or conducting paid review sessions for courses in which they are directly involved as a GAT).

2. **Assignment to Graduate Level Courses:** GATs may not be the instructor of record for classes giving graduate credit. Duties of GATs involved in graduate level classes should be restricted to non-subjective grading, lab setup, web site maintenance, and general advising.

3. **Training:** All GATs must complete training assignments before assuming direct instructional responsibilities at the University of Arizona. Any GAT who fails to comply with all the requirements will be violating the conditions of employment agreed in the Notice of Appointment for Graduate Assistants/Associates and may not engage in direct instructional contact.

**Minimum Training Requirement**

All Graduate Assistants/Associates with the title of “Graduate Assistant/Associate, Teaching,” must complete the following two mandatory trainings prior to the beginning of employment:

**Teaching Assistant/Associate Teaching Orientation (TATO):**

Teaching Assistant/Associate Training Online (TATO) is a collection of self-paced modules about teaching and learning. These modules are made available via D2L. All students who wish to be employed as Teaching Assistants/Associates (TAs) must complete "Staying Out of Trouble: UA Policies" and pass the test with a score of 95% or higher no later than two weeks after the start of classes.
After completing "Staying Out of Trouble: UA Policies", it is recommended that TAs review this information before the beginning of each semester. There are also additional duty-specific modules have been found to be very helpful in providing suggestions and tips for effective teaching. They can be accessed at any time.

For more information visit: http://grad.arizona.edu/financial-resources/ta/tato

**English Proficiency**

An international Graduate Assistant/Associate, Teaching, from a non-English speaking country must demonstrate fluency in spoken English. A passing score on any one of the approved tests is sufficient to qualify for a position. Please note that previous attendance at an English-speaking institution does not satisfy this requirement.

Tests that satisfy the requirement are listed below, along with their minimum passing scores. A passing score from any one of these tests will satisfy this requirement:

- TBEST- Minimum passing score is 6.8
- IBT TOEFL- Speaking section minimum passing score is 24
- TSE/SPEAK- Minimum passing score is 50

Please note that the TSE/SPEAK and TBEST exams are no longer administered, but will be accepted as long as the minimum passing score was met.

For more information on English Proficiency Evaluations please visit http://grad.arizona.edu/admissions/admissions-requirements/international-students/proficiency-in-english

**Departmental Reporting Requirements**

1. **TA Training Record:** Training records are due shortly after the beginning of each regular semester. This report provides the Graduate College with a list of the GATs’ class assignments, duties, and name(s) of the supervising professor(s). A sample, summary, and copy of the departmental training material must be submitted with the fall training record.

2. **TA Evaluation:** Evaluations are due at the end of each regular semester and notifies the Graduate College of the quality of the GATs’ performance and fitness for reappointment. GATs without a current evaluation on file are not eligible for rehire as a GAT. GATs receiving low evaluations are not eligible for rehire without prior Graduate College approval.

For any questions/concerns regarding GAT training, please contact Julie Treanor at jtreanor@grad.arizona.edu

**Supervision**

Each teaching assistant must be assigned to a faculty member who is responsible for his or her supervision. The faculty supervisor shall provide guidance and direction for the graduate assistant throughout the semester. Faculty supervisors are responsible for evaluating the teaching assistant’s performance and the
The University of Arizona classroom/laboratory environment where he or she teaches and for submitting a complete written evaluation to the Director of the School of Animal and Comparative Biomedical Sciences. Evaluations are then made available to the Graduate College.

Supervisors are committed to the creative and ongoing development of effective pedagogical teaching strategies and effective teachers. Supervision should include, but not be limited to:

1. Direct observation of the GAT in a classroom or laboratory setting
2. Review of his/her instructional responsibilities
3. Review of developmental and use of instructional methods
4. Scheduling follow-up meetings at regular intervals throughout the semester to discuss problem areas and ways to improve his/her teachings

**Evaluations**

Evaluation and feedback are crucial components of effective teaching and should include both faculty and student input based on the supervisor’s direct observation. Feedback from supervisors can serve to improve teaching skills. Faculty supervisors are responsible for evaluating the GAT’s performance and the classroom/laboratory environment where he or she teaches, as well as, the use of instructional materials. Faculty supervisors are responsible for submitting complete individual evaluation forms for each GAT to the departmental secretary, to be forwarded to the Graduate College with the Program report at the end of the semester when final grades are due. The supervisor’s evaluation shall include a summary of the student’s evaluations of the GAT.

GATs whose performance is scored “low” by their supervisors during the first semester are required to undergo additional training by the department of the UTC before the beginning of the second semester or very early in the second semester. GATs who show no improvement in their teaching by the end of the second semester will not be eligible to continue on a teaching assignment. Additionally, GATs whose graduate GPA falls below a 3.00 are also not eligible for further appointments.

GAT performance evaluations may be appealed to the Director and, if not resolved a this level, to the Dean of the Graduate College. Appeals will not be considered beyond the Dean’s level, except in any cases which allege unlawful discrimination. Such complaints must be filed in the Equal Opportunity and Affirmative Action Office.

For more information of Graduate Assistant/Associate positions, please see the GA Manual on the UA Graduate College website, [http://grad.arizona.edu/financial-resources/ua-resources/employment/ga-manual](http://grad.arizona.edu/financial-resources/ua-resources/employment/ga-manual).