

# Biology Graduate Brochure

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**I. Acknowledgement and Statement of Responsibility**

The Biology Department at Texas Woman's University has set guidelines and rules described in this handbook. These are complementary to and explanatory of University policies as they can be found in the Graduate Catalog. Some general rules may also be found in the Student Handbook.

The Graduate Handbook compiles rules in effect at this time (Fall, 2005). If discrepancies with practices arise, it is the student's responsibility to inquire in the departmental office about the correct interpretation of conflicting statements.

**II. Admission Requirements.**

*A. General Expectations*

A Bachelor's degree in Biology or its equivalent is expected; the grade point average on the last 60 hours of coursework toward that degree should be 3.0 or higher.

GRE requirements: The score in the verbal and quantitative portion are added together as a composite score. For admission to the M.S. program, a composite score

of 800 is expected. For admission to the PhD program, a composite score of 1000 is expected.

All applicants should have taken courses in General Zoology and General Botany (or a one year sequence in General Biology), General Microbiology, Genetics, Ecology, General Physiology, Cell and Molecular Biology, Organic Chemistry, Biochemistry and Physics prior to graduation with a Bachelor's degree. Students who lack courses in these areas as part of their undergraduate work will have these deficiencies listed on their admission letter and may be granted conditional admission. Students will be required to make up any course deficiencies and should consult with the Department Chair to determine the appropriate coursework.

Additional requirements have been established for admission to the PhD program: undergraduate courses in Organic Chemistry, Quantitative Analysis, Physics (2 semesters) and Calculus.

*B. U.S. applicants*

Application for admission to the graduate school must be made to the Office of Student Records Processing as shown on the application form. When all materials have been received by that office, the forms will be forwarded to the Biology Department for evaluation by the Graduate Admissions Committee, who will send their recommendation to the Dean of the Graduate School. Admission will be granted by the Dean of the Graduate School, who will notify the student.

*C. International applicants*

International student applications for admission to the graduate school must be made to the International Education Office, as detailed on their Web-site ([http://www.twu.edu/o-sl/international\\_ed/](http://www.twu.edu/o-sl/international_ed/)). When all materials have been received by that office and the transcripts have been evaluated, the application packet will be forwarded to the Biology Department for evaluation by the Graduate Admissions Committee, who will send their recommendation to the Dean of the Graduate School. Admission will be granted by the Dean of the Graduate School, who will notify the student.

*D. Provisional admission*

Provisional admission may be granted where the academic potential is evident but where specific preparations in certain areas of biology are lacking. Provisional admission may be granted in cases where some of the indicators for possible success (GPA, GRE) are satisfactory but where one or the other aspect may be marginal. A student provisionally admitted is eligible for appointment to a teaching or research assistant position.

*E. Transfer credit from other institutions.*

Master's students can normally transfer up to 6 hours of graduate work. These have to have been completed within the last six (6) years preceding the graduation date.

PhD students may transfer up to half their graduate credit hours (45 hours) from other institutions.

Acceptance of transferred courses is subject to approval by the student's Advisory Committee. These courses will be listed specifically in the degree plan. Coursework taken at one of the Universities in the Federation of North Texas Area Universities is not considered to be transferred.

#### *F. Part time study*

The PhD program and the Thesis Option in the MS program require full time commitment of the student to research for a minimum of one year. In preparation for the research projects, students may take coursework on a part time basis; similarly, students may register for part time study while they are in the writing phase of their thesis or dissertation.

Students in all degree options must observe the time limitations for the completion of their respective degree.

### **III. Advisor or Advisory Committee**

#### *A. Assignment of advisor*

At the time of entry into the program, the Department chair will assign a member of the graduate faculty as the student's interim advisor. In addition, a senior level graduate student will be asked to serve as a mentor for each incoming student. During the first semester in the program, the student will meet with the faculty members of the graduate faculty to learn about the research programs of each faculty. By mutual agreement, a student may be accepted into the research laboratory of an individual faculty member who has agreed to supervise the student's degree work. It is the responsibility of the student to notify the Department chair when the faculty member has agreed to accept the student.

At least by the end of two semesters, the student will identify to the advisor two or more additional faculty members. If these agree to serve on the student's advisory committee, they will meet with the student and the other committee members to propose a degree plan. With their signature on the degree plan, they indicate that they are willing to serve on the student's committee; the acceptance of the degree plan by the Department chair and by the Dean of the Graduate School constitutes the official appointment to the committee.

#### *B. Responsibilities of Advisor or Committee:*

The advisor becomes the director of the student's research project or professional paper. He/she will direct the initial exploration of a research project or topic for reading. The student will work in the Advisor's lab or in a lab of another committee member where he/she has access to special equipment and advice.

The advisor will see that the student completes the steps toward the completion of the degree according to the timetable proposed for each specific program. The advisor will, jointly with the other members of the advisory committee, assume responsibilities as outlined in detail in this handbook. They will be responsible for designing a degree plan with the student, in compliance with the requirements for a specific degree option. They will review and judge the prospectus and the Thesis or Dissertation and administer the examinations as specified for specific degree options.

*C. Responsibility of the student to Advisor or Advisory Committee*

The student will seek approval for semester course loads from the advisor. The student will discuss plans, changes in plans for specific projects with the Advisor. The student will register for Research courses with the Advisor during the semester in which he/she relies on advice and/or uses the laboratory facilities of the Advisor. The student will register for Thesis or Dissertation hours with the Advisor during the period of writing of the project.

The student must be registered for at least one hour of credit when he/she expects to use laboratory facilities in the department.

The student will prepare a prospectus of the research to be conducted, present results for the Thesis/Dissertation to the committee members and observe the timetable suggested for smooth transition through the program.

Since each of the major programs has specific requirements for completion of the degree, guidelines for each program follow in the next sections.

*C1. Requirements for the Degree of Master of Science in Biology Teaching – Professional Paper Option.*

*A. Admission*

Students admitted to the M.S. in Biology teaching program must have taken General Biology, Genetics, Ecology, Microbiology, Botany, and Zoology prior to admission to the graduate program, or they must make up deficiencies as a part of their graduate program. This option consists of 36 hours of graduate work, including 3 hours of Professional Paper and 6 hours of education or equivalent coursework selected with approval of the advisory committee. Students will comply with all university requirements as stated in the Graduate Catalog. If you have questions regarding these requirements, contact the Departmental Chair or your graduate advisor. In general, the order in which the requirements may be completed is:

1. Discuss a tentative schedule of graduate courses with your advisor.
2. After completion of no more than 12 to 15 hours of graduate work:
  - a) choose three professors under whom you have taken graduate course work; designate one as your major professor;

- b) in cooperation with this committee of three, file a formal degree plan for approval by the Departmental Chair;
  - c) consider the general area in which you will write your professional paper.
3. As soon as you have selected a subject for the professional paper, submit a tentative outline to the major professor who will obtain approval from the other committee members and the Department Chair.
  4. Complete all graduate coursework in your degree plan.
  5. Before you begin to write your professional paper, obtain the *Guide to the Preparation and Processing of Dissertations, Theses, and Professional Papers*, which is available on-line through the Graduate School (<http://www.twu.edu/o-grad/Guidelines.pdf>). This specifies the format in which your paper must be written. You should also consult the latest edition of the *CBE Style Manual* which will supply additional details.
  6. Prior to the semester in which you plan to graduate, obtain the detailed calendar of events prescribed for the semester in which you will actually graduate. These calendars are available on the Graduate School web page. **It is the student's responsibility to make certain that all prescribed forms have been filed and that fees have been paid.**
  7. When you establish the approximate date for the defense of your paper, make sure that your major advisor receives a complete version of your paper at least eight weeks prior to the date you expect to defend it (your advisor may be committed to a large number of candidates and may postpone your defense to a later time!)
  8. After your major professor approves your professional paper, obtain the approval of your committee.
  9. Schedule the oral presentation of your paper on or before the date that the Graduate School has specified as the date for deposit of theses and dissertations. The Department Chair and faculty will be invited to the oral examination.
  10. **IMPORTANT:** You must be registered as a student through the semester in which you file your paper.
  11. Return keys to university facilities before you leave the University.

12. File one bound copy of the approved paper with the Biology Department, give one unbound copy to each committee member and submit a copy of the title page to the Graduate School by the prescribed deadline for the semester's graduation date.

*C2. Requirements for the Degree of Master of Science in Biology – Research Thesis Option.*

A. The Department Chair will serve as academic advisor until a major professor and a Graduate committee have been selected. Students should read the appropriate graduate catalog and comply with all University requirements. The following requirements are listed in the order in which they should be met:

1. Contact the Department Chair to discuss your graduate course program.
2. Consult with professors in the area of biology in which you wish to conduct research.
3. When you have chosen the specific research area, write a letter of intent to the Department Chair. Include the name of the major professor with whom you will work and suggest names of two other members for the committee. This letter should be received no later than the beginning of your third semester as a graduate student.
4. Have your major professor call a meeting of your graduate committee to plan the remainder of your graduate course requirements and have a degree plan approved as soon as possible but not later than the end of your first full year in the program.
5. Submit two copies of your approved degree plan to the department. One copy will be forwarded to the Graduate School for approval by the Dean of the Graduate School.
6. You must write a thesis prospectus using the official form shown in Appendix A. The cover page is available on-line through the Graduate School. The prospectus should be prepared after the student has chosen an advisor and has initiated studies on a particular problem. This should be completed by the end of the second year.
7. After the prospectus has been approved by the members of the graduate committee, submit it to the Department Chair for approval and submission to the Dean of the Graduate School.
8. Complete your graduate research, course requirements, and any deficiencies designated by the Graduate Committee or by the Admission Committee.

9. Prior to the semester in which you plan to graduate, present to the committee a rough draft of research results written in manuscript form of journal(s) appropriate to the discipline in which your project falls. Material that will be in the thesis but that may not be incorporated in the publication(s) should be submitted separately to the committee members, at least 7 days prior to a meeting with the committee. In this meeting the committee will evaluate the research results and determine whether you have met the research requirements for the degree. The format of this meeting will be a 15-30 minute presentation of the project followed by questions from the committee on the research itself. If the data are approved, you will be authorized to write the Thesis.

10. When you schedule your defense, arrange for a meeting with your committee at least 30 days prior to the departmental defense. Submit the final draft of your thesis to each committee member at least 7 days before the date of the meeting. In this meeting you will discuss the thesis itself, i.e., format, style errors, grammar, etc. You are expected to make all proposed corrections before the defense is scheduled.

11. Submit a final copy of the Thesis to each committee member and to the Biology office one week prior to the defense.

12. The defense will be a public presentation of the findings, followed by questions from the audience. One object of the defense is to discuss the broad implications of the research and assess your ability to "think on your feet".

13. Prior to the semester in which you plan to graduate, obtain the detailed calendar of events prescribed for the semester in which you will actually graduate. These calendars are available on the Graduate School web-page.

14. At the beginning of the semester in which you expect to graduate contact the chair of the Biology seminar program and arrange a date, prior to your defense, to present your research findings at a regularly scheduled departmental seminar.

15. Two forms - one that certifies the successful defense of your Thesis and one that accompanies the Thesis when you file it in the Graduate School - must be prepared by you at the time of your defense. These forms are available on the Graduate School web-page.

16. After a successful defense and approval of your thesis, file two copies on bond paper and one on plain paper with the Graduate School. Give a copy to your major professor and to each committee member.

17. Return keys to university facilities before you leave the university.

**18. IMPORTANT:** You must be registered for Thesis (BIOL 5993) through the semester in which you file your thesis, in the Graduate School.

*C3. Requirements for the Degree - Doctor of Philosophy in Molecular Biology*

A. The Department Chair will serve as academic advisor until a major professor and a Graduate committee have been selected. Students should read the appropriate graduate catalog and comply with all University requirements.

B. Only in exceptional cases will a student be allowed to obtain a third academic degree in Biology at Texas Woman's University. To obtain this approval she/he must petition the Department's Graduate Affairs Committee for admission to the Ph.D. program.

Special GRE requirements and undergraduate course work prerequisites apply to admission into the Ph.D. program. A core of graduate courses is established for this program. The following requirements are listed in the order in which they should be met:

1. After you have taken courses for a full academic year (Fall and Spring semester) you must choose a member of the Graduate Faculty to direct your dissertation research. Ask this faculty member to call a meeting with the professors whose courses you took during the year. This group will discuss with you your performance and the option to proceed in the program in this meeting. When you have decided upon a professor with whom you will work, notify the Department Chair in writing. Include in your letter a brief summary of the research you plan to carry out. You and your major professor should recommend to the Department Chair four additional members for your graduate committee.
2. With the advice and approval of your graduate committee, prepare your degree plan for the Ph.D. degree using the official forms available online. File one copy of the approved degree plan in the Biology Office and submit the original to the Graduate School.
3. Notify the Biology Office of the completion of your research tool requirements (see the Graduate Catalog for options available to you). The Biology Department requires 8 hours of techniques, satisfied by BACT 6534 (Plasmid DNA Vectors) and BACT 6544 (Viral DNA Vectors).
4. Complete your required course work (see catalog). Each doctoral student will take at least 90 hours of graduate course work beyond the Bachelor's degree or 60 hours beyond the Master's degree. We propose the following sequence: Fall, Molecular Biology - BIOL 6513; Spring, Adv. Cell Biology - BIOL 6334; Summer – BACT 6534 and 6544; 2nd Spring, Adv. Genetics -

BIOL 6734. Biochemistry should be taken in the two semesters of the first year, as should other courses deemed necessary by the advisor and/or committee.

5. Qualifying examination: The qualifying exam You must complete the three core courses of Molecular Biology, Advanced Cell Biology, and Advanced Genetics with a grade of "B" or better in each course before taking the qualifying examination. These courses should be completed by the third year after initiating the core curriculum as a Ph.D. student. Failure to complete the core curriculum within this two year period can result in dismissal from the program. The written qualifying examination must be taken in May during the week following Spring commencement of the academic year during which you complete the core curriculum. Students with Masters degrees who have already taken core courses must take the qualifying examination no later than two years after acceptance into the Ph.D. program. Exceptions to this timetable are rare and must be approved by the Biology Graduate Faculty. The examination is given in one day, takes from 6-8 hours and consists of integrative questions. The exam will be prepared by a Biology Department Prelim committee, composed of at least three faculty, of which no more than two will be faculty involved in the core courses. The written exam will be graded by the student's graduate committee, in consultation with the Prelim committee. The results of the written portion of the examination will be communicated to the student by the student's major advisor. The oral portion of the exam must take place before August of the same year. This exam will cover all aspects of biological science as well as the written exam. A student who fails the qualifying examination cannot apply for admission to candidacy in the Biology Department.

6. Have your major professor notify the Department Chair who will inform the Graduate School of the results of the preliminary examination. After passing your examination you are admitted to candidacy only if all other requirements specified above have been fulfilled.

7. During the second year in the program, obtain the prospectus format from the Graduate School online. Prepare your prospectus and give a copy to each committee member to review. Arrange a meeting with the committee, present your prospectus orally and obtain the approval of your committee. The approved prospectus should be filed in the Graduate School.

8. When you plan to write your dissertation observe the following steps: Prior to the semester in which you plan to graduate, present to your graduate committee a rough draft(s) of research results written in manuscript form appropriate to a journal that publishes articles in your specialization. The manuscript as well as other material that will be in the dissertation but that is not incorporated into the publication(s) (lengthy introduction, descriptions of failed experiments, tables etc) should be submitted separately. This material

must be submitted to each committee member one week (7 days) before meeting with the committee. In this meeting the committee evaluates the research results and determines whether you have met the research requirements for the degree. The format of this meeting is a 15-30 minute presentation by the student followed by questions from the committee on the research itself. If the data are approved, you will be authorized to write the dissertation.

9. In planning your dissertation defense, arrange a meeting with your graduate committee at least 30 days prior to the departmental defense. Submit the final draft of your dissertation to each committee member at least 7 days before the day of the meeting. In this meeting you will discuss the dissertation itself, i.e., format, style errors, grammar, etc. You are expected to make all proposed corrections before the departmental defense is scheduled.

10. Submit a final copy of the dissertation to each committee member and to the Biology Office one week prior to the departmental defense.

11. The departmental defense is a public presentation of the findings, followed by questions from the audience. One object of the defense is to discuss the broad implications of the research and assess your ability to "think on your feet".

12. Prior to the semester in which you plan to graduate, obtain the detailed calendar of events prescribed for the semester in which you will actually graduate. Important details are specified each semester on this calendar such as when you must apply for graduation, when to pay fees, and when to deposit the dissertation in the Graduate School. The calendars are available on the Graduate School web page.

13. At the beginning of the semester in which you expect to graduate, contact the Chair of the Biology seminar program and arrange a date to present your departmental seminar. Your research seminar must be given no later than during the semester in which you expect to graduate.

14. Make sure that you have scheduled your defense for a time that satisfies the requirement in #13 above. The Biology Office must be informed of both the time and place of the defense.

15. Two forms - one that certifies the successful defense of your dissertation and one that accompanies the dissertation when you file it in the Graduate School - must be prepared by you at the time of the defense (these are online from the Graduate School).

16. When you have passed the oral defense examination and your dissertation has been approved by your committee, distribute copies as follows: the

original and two copies on bond paper to the Graduate School and one each to your major professor and committee members. The Graduate School is planning to implement electronic filing of theses and dissertations. Please consult the Graduate School web-page each semester to determine the route of submission.

17. Return keys to the university facilities before you leave the university.

18. As long as you continue research at the university, you must register a minimum of three semester hours per semester. During the semester of the defense of your dissertation you must be enrolled in Biology 6993, Dissertation.

#### **IV. Program of Study**

##### *A. Time limitations*

No absolute time period exists within which a master's degree must be completed, but credit hours older than six years cannot apply towards any master's degree. Under extraordinary circumstances, credit hours older than six years may be reinstated with the permission of the Dean of Graduate Studies and Research, upon recommendation of a student's advisory committee, chair of the department, and dean of the college. All requirements toward a doctoral degree, beyond the master's degree or its equivalent, must be completed within a period of ten consecutive calendar years from the date doctoral credit is first earned.

##### *B. Performance requirements*

1. Graduate students are expected to maintain a B average (a course for which a grade of 'C' is recorded cannot apply to the degree). Consistent failure to maintain a 'B' average results in dismissal from the Graduate School. When a student's cumulative average on graduate-level work falls below B or when a student receives a grade of D or F during any one semester or full summer session of twelve weeks, the student is automatically on academic probation and notified of this status. Failure to restore the cumulative average to B or above during the next semester or full summer session results in suspension from the Graduate School. It is not possible to improve the grade record at Texas Woman's University by attendance at another university. Students on probation are not eligible for assistantship appointments.

2. If a doctoral student earns grades below B in program courses, continuation in the degree program is reviewed by the student's advisory committee. A student is not allowed to continue in the doctoral program if there are two failing grades (F or WF) in the doctoral program.

### *C. Course Combinations and Sequences*

There is not set requirement of specific coursework for the Master's level preparation. Individual degree programs are arranged with the advice of the Research Advisory Committee (see IV.A).

Each Ph.D. program has a set of core courses required before the candidacy examination can be taken (see IV.C3). Courses that are tailored to the specific program will need the approval of the Advisory Committee (see IV.A and IV.C3).

### **Seminar rules**

Departmental seminars (BIOL 5681) offer the student the opportunity to learn about diverse fields of study in biology and to make preparations on biological topics to their peers.

- Attendance of the official weekly Seminars is expected.
- Participation in the discussion is expected.
- Graduate students who receive assistantship support for the department are expected to register every semester for Seminar 5681.
- Students may receive a letter grade for efforts made in making the semester a meaningful experience. Attendance, participation in discussion will be the main criteria for grading. Participants should find information about the topic ahead of time. Seminar titles will be posted one week before the presentation.
- Every student in the Thesis or Dissertation option may be asked to present a short (20-30 minute) topic to the departmental audience (selection may occur upon advice from the student's advisor, or follow a student's own interest). This presentation should be scheduled during the student's second semester in the program. Around the time of the defense of the Thesis or Dissertation, the student is expected to present a full scale departmental seminar. The seminar coordinator must be informed of the intention to present a seminar at the beginning of the semester for which the defense is scheduled.

### *D. Nature of examinations:*

The nature of the examinations is described in detail for each of the degree options in the check list for the different degrees, in section C of this handbook.

## **V. Degree plans**

These degree plans are offered in the Biology department.

Under the Master's Degree option, two plans exist:

(1) The M.S. with emphasis on Biology Teaching; This plan is providing a high degree of diversity of training in different aspects of biology. The student completes the program with the writing of a Professional Paper (see: detailed guidelines under IV.C1).

(2) The M.S. with a Thesis presentation. Emphasis in this plan is on the research project which must be written up in the form of a Thesis. The student will specialize in a research area under the guidance of the Thesis advisor and follow the guidelines provided under IV.C2.

The plan for the Ph.D. degree is detailed in guideline IV.C3.

Method of changing degree plans:

Admission to the M.S. degree option does not differentiate between the two plans. If a student wishes to change from one plan to the other, he or she must discuss the logistics with the major advisor and the department chair. If a degree program has been submitted at that time, a new program must be provided; a different committee may have to be selected to guide the student in the altered plan.

Changing from an M.S. program into the Ph.D. program requires a regular application procedure since different admission standards exist. Changing from a Ph.D. Program to the Master's program necessitates that the Departmental Chair be notified and a new degree program must be submitted. A student on an assistantship appointment must be aware that changing to a different program may affect the salary level paid for such an assistantship.

## **VI. Research Committee**

The Advisory Committee is the same as the Research Committee in the degree options in the Biology department. Selection procedures are detailed in the guidelines provided in IV.C.

Changes in committee membership after a degree plan has been approved, requires a written request from the major advisor to the Department chair, who will notify the Graduate School of the change.

## **VII. Scholarship and Grant Opportunities**

The department office maintains information on nationally advertised scholarships for graduate support.

## **VII. Teaching and/or Research Fellowships:**

### *A. Qualifications*

A student who has been admitted to a graduate program in the Biology Department and maintains good academic standing may be supported from various sources. Conditions vary for different types of awards. Outlined below are the benefits and expectations connected with each of the awards. Two levels of awards are made; these levels are determined by the degree sought and by the number of credit hours earned toward the degree.

Master's degree students receive the same level of award while they are in the program.

Doctoral degree students receive a Ph.D. level award if they enter the program with a completed Master's degree; a student entering the Program directly after receiving a B.S. degree will be paid at the M.S. level for the first two years in the program, and will receive the Ph.D. level award with the beginning of the third year. Graduate students on academic probation are not eligible for assistantship or fellowship appointments. (see: VB)

As in most academic appointments, assistantship appointments are awarded with the understanding that time outside of the contracted work - teaching preparation for labs and grading of lab exercises - is spent on other professional endeavors. For a student, the pursuit of formal classwork, studying and research toward a degree are among those. It is also expected that students with assistantship appointments maintain professional activities during their entire appointment period, from September 1 to January 15 and January 16 to May 31, even if there are no classes in session. Naturally, they are entitled to the official holidays, but Teaching Assistants are expected to assist in instruction related tasks and Research Assistants are expected to continue working on their projects outside of the periods when classes are in session.

Stipends will be paid on a monthly basis, at the end of the month. Upon receiving the first appointment contract, the student must go to the Personnel Office to complete the proper withholding forms.

### *B. Applications and Duties for various Awards*

1. Students who are interested in a Teaching Assistantship appointment must submit a Graduate Assistantship Application and two letters of recommendation to the Biology Department. Applications are accepted anytime during the year with starting dates of appointments coinciding with the beginning of each semester or summer term. A waiting list is normally developing during the academic year. Realistically, applications received after April 1 have little chance for being considered for the Fall semester of the same calendar year. Awards are determined by the following criteria:

- a. The student must be competent in teaching Laboratories in specialized areas of Biology.

- b. Lab sections must be available in the areas of competence.
- c. Funding must be available in the departmental budget. The source of support is faculty salary, provided by the State.

**Benefits are the following:**

M.S. level appointment, 9 months, \$7,245.00 (\$805 monthly)

Ph.D. level appointment, 9 months, \$8,514.00 (\$946 monthly)

Summer appointments are normally available for one summer session (1.5 months) only, at the equivalent monthly rate.

State paid health insurance; this insurance is paid through the summer whenever reappointment of the student in the fall is expected, regardless of whether the student receives a summer appointment.

Student is eligible for in-state tuition (approximate benefit: \$2,000.00)  
Appointments are made by the Chair of the Department, upon recommendations of the Lab Coordinators. Teaching Assistants should check with the Departmental Chair on desk or office assignments and request a key to the assigned office through the Biology Office.

**Expectations:**

The Assistant will normally teach two laboratories per week. (S)he will be supervised by the Lab Coordinator responsible for the respective course. Skills will be matched with the teaching needs of the department. Assistants will be "instructor of record" -- fully responsible for instruction in the assigned labs, grading and record keeping. A total time commitment of about 20 hours per week is expected: lab time, office hours (4 hours per week) and time for preparation and grading. Students in their first year of graduate training are expected to take BIOL 5111, Biology Lab Methods.

Assistants who are unfamiliar with a subject are encouraged to sit in with an experienced instructor teaching a lab section in the same course, before they teach their own section.

The Lab Coordinator or Lecturer of the accompanying lecture course will spot check the lab sections. Problems and recommendations for improvement that become apparent as a result of such visits will be discussed.

At the end of each semester, TA's will be evaluated according to the student evaluation system in effect at TWU. The written comments of the students will be evaluated by the Lab Coordinator and will be discussed with the TA.

Reappointment is contingent upon satisfactory performance. Master's students should not expect more than four semesters of support from this source, Ph.D. students should not expect more than eight semesters from this source.

## 2. Graduate Research Assistantship

These awards are made for students who have initiated a research project with an investigator who obtains external funding.

The source for this appointment is from research grants obtained by individual faculty members.

### **Benefits:**

M.S. level \$805 monthly

Ph.D. level \$946 monthly

The length of the appointment is determined by the duration of the grant, normally 12 months of the year.

Health insurance may be paid, if the grant includes this provision. The recipient is eligible for in-state tuition (approximate annual benefit \$2,000.00). The support allows the student to pursue a research project – within the confines of the grant – which will be the foundation of the thesis or dissertation required for the degree.

### **Expectations:**

(1) The appointment is closely linked to the project funded through the grant. Students are expected to make a full time effort in the pursuit of this research and their degree.

(2) Continuation of support is contingent upon funding available and satisfactory commitment and progress by the student.

(3) Appointments are made on a semester, academic year, or on the basis of summer session. The award letter will always clearly define the period of the appointment and the total stipend paid for this period.

In order to hold a full-time assistantship, the student must be a full-time student at TWU and a student with an assistantship must register for a minimum of 9 graduate hours of coursework and should not exceed 12 hours.

## 3. Multi-ethnic Biomedical Research Support (MBRS) Graduate Research Assistantship

These awards are made upon application to the Multi-ethnic Biomedical Research Support program, Ms. Anne Downing, Project Coordinator, (940) 898-3328 or email

ADowning@mail.twu.edu. A Board of Advisors for this program selects the award recipients from the applications received. Students who have initiated a research project with one of the investigators supported by the program increase their chances of being appointed. The source for these appointments is a federal grant primarily for members of minority groups. The amount of the award is determined by the salary limit set by the Graduate School of TWU.

**Benefits:**

M.S. level appointment (12 months) \$9,660 (\$805.00 per month)

Ph.D. level appointment (12 months) \$11,352 (\$946.00 per month)

These appointments are intended to be 12 month appointments but are subject to performance review every semester.

Health insurance is paid by the grant. The student's tuition is paid by the grant (this is an average \$3,000.00 annual benefit in addition to the monthly salary paid). The support allows the student to pursue a research project within the confines of the specific grant -- which will be the foundation of the thesis or dissertation required for the degree.

**Expectations:**

The appointment is closely linked to the project funded through the grant. Students are expected to make a full time effort in the pursuit of this research and their degree. Employment outside the University is not compatible with this expectation. Continuation of the support is contingent upon funding available, satisfactory commitment and progress by the student.