



**James Madison University**

**Biology Graduate Program**

**2009-2010 Handbook**

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# Biology Graduate Student Roster

August 2009

## First year students

<b>Name</b>	<b>E-mail</b>	<b>Advisor</b>
Arsenovic, Paul	arsenopt@gmail.com	Timothy Bloss
Heltzel, Sara	heltzesb@gmail.com	David Jaynes
Muletz, Carly R	craemuletz@gmail.com	Reid Harris
Saunders, Bryan	saundebl@jmu.edu	Chris Lantz
Silke, Kristina T	silkekt@jmu.edu	Roshna Wunderlich
Stutzman, Julia K	julia.stutzman@gmail.com	Conley McMullen
Wolf, Stephanie	wolfsa@jmu.edu	Roshna Wunderlich

## Second year (and above) students

<b>Name</b>	<b>E-mail</b>	<b>Advisor</b>
Lam, Brianna	lamba@jmu.edu	Reid Harris
Le, Nhut	lenp@jmu.edu	Justin Brown
Rasoul, Bareza	rasoulbx@jmu.edu	Alex Bannigan
Siderhurst, Leigh	siderhla@jmu.edu	Heather Griscom
Steidle, Elizabeth	steidlea@jmu.edu	Jon Monroe
Trumbo, Brad	trumboba@jmu.edu	Mark Hudy
Kyger, Chas	kygercd@jmu.edu	Mark Hudy
Denise Conley	conleyde@jmu.edu	
Horst, Ethan	horstek@jmu.edu	
Gehr, Erika	gehref@jmu.edu	

**Biology Graduate Faculty**  
August 2009

	Office	Telephone	Email
Dr. Alex Bannigan*	B042	84521	bannigax
Dr. Sharon Babcock	B301/HHS2153	87925/82669	babcocks
Dr. Marta Bechtel	B210	85524	bechtemk
Dr. Tim Bloss	B113	85522	blossta
Dr. Justin Brown	B306	87135	brown3jw
Dr. Corey Cleland	B308	83454	clelancl
Dr. Dean Cocking	B302	86566	cockinwd
Dr. Janet Daniel*	B215	82322	danie2jc
Dr. Jim Dendinger	B214	86651	dendinje
Dr. Judy Dilts	B242	86733	diltsja
Dr. Liz Doyle	B203	86020	doyleea
Dr. Mark Gabriele	B207/HHS3101D	86333/83258	gabrieaml
Dr. Katrina Gobetz	B310	83643	gobetzke
Dr. Heather Griscom	B204	85525	griscohp
Dr. Susan Halsell	B103	83909	halselsr
Dr. Reid Harris*	B209	86665	harrisrn
Dr. Jim Herrick*	B307	86653	herricjb
Mr. Mark Hudy	B14	82704	hudymx
Dr. Carol Hurney	B313	86906	hurneyca
Dr. David Jaynes	B305/HHS3101C	82857/83048	jaynescd
Dr. Erika Kancler	HHS1031F	82670	kancleem
Dr. Jon Kastendiek*	B212	86008	kastenje
Dr. Steven Keffer	B206	85659	keffersl
Dr. Chris Lantz	B110	82840	lantz2cs
Dr. Patrice Ludwig	B203	86020	ludwigpm
Dr. Conley McMullen	B202	83805	mcmullck
Dr. Jon Monroe	B304	86649	monroejd
Dr. Kit Murphy	B311	82880	murphycg
Dr. Mike Renfroe	B303	86617	renfromh
Dr. Terri Rife	B208	83343	rifetk
Dr. Chris Rose	B213	86666	rosecs
Dr. Kyle Seifert	B304A	82286	seiferkx
Dr. Kim Slekar	B309	86647	slekarkh
Dr. Louise Temple	B242	84415	templelm
Dr. Bruce Wiggins	B312	86196	wigginba
Dr. Roshna Wunderlich*	B108/HHS3101F	86930/82670	wunderre
Dr. Grace Wyngaard	B211	86668	wyngaaga

\* Graduate Committee Members

## Biology Graduate Program Calendar: 2009-2010

A complete calendar for the James Madison University Graduate Academic Year can be found at the following web site: <http://www.jmu.edu/cgop/current/calendar.shtml>

In addition, we include here the important deadlines for new and returning full time biology students.

### Summary of Important Dates for First Year, Full Time Students

Week Before Classes	Graduate School new student orientation: 17 Aug, 9-12 New Biology graduate student orientation: Aug 23, 4:00 p.m., followed by beginning of year picnic
August 24	Fall Classes Begin
September 11	Completed <i>Committee Approval Form</i> submitted to Graduate Director and The Graduate School (TGS)
January 11	Spring Classes Begin
January 22	Last date to submit <i>Thesis Proposal</i> to Advisory Committee for review/approval
February 8	<i>Application for Second Year Assistantship</i> submitted to Graduate Director
February 19	Second Year Assistantship decisions announced by Graduate Committee
Tentative: Fridays February 19 – Mar 12	Departmental Seminar Presentation of Research Proposals
April 21	Comprehensive exam results due to The Graduate School

## Summary of Important Dates for Second Year, Full Time Students

September and October	Departmental Seminar of Research Progress
<b>December Graduation</b>	
October 2	<i>Application for Graduation</i> due to The Graduate School (TGS)
November 20	Comprehensive Examination Results due to TGS
November 20	Completed Thesis received by TGS
December 12	Commencement
<b>May Graduation</b>	
January 22	<i>Application for Graduation</i> due at TGS
April 21	Comprehensive Examination results received by TGS Completed Thesis received by TGS
May 7	Commencement*
<b>Summer Completion</b>	
June 5	<i>Application for Graduation</i> due at TGS
July 10	Completed Thesis received by TGS
July 10	Comprehensive Examination results received by TGS

\*Students may walk in May Commencement *if* they submit an Application for Graduation by January 22 and have completed all coursework except the thesis

## **Introduction**

This handbook is intended as a program guide for both students and faculty. It is divided into three sections. The first section deals with issues of immediate concern to students, e.g., registration, admission status, assistantships, etc. The second section outlines programs of study. The third section includes forms and applications that the student will need during her/his tenure, as well as a copy of our catalog of graduate courses.

The graduate catalog can be accessed at <http://www.jmu.edu/grad>

Everyone is urged to give feedback throughout the year on both the handbook and the graduate program to the members of the graduate committee (noted on the faculty roster). Our program is a work in progress, and we depend on the active involvement of students and faculty to continue its development and improvement.

## **I. Immediate Concerns and General Information**

### **Transcripts**

Entering graduate students must have a final undergraduate transcript sent to the Graduate School, if you have not already done so. This transcript must show that you have, in fact, graduated. Your transcript must be received before the Graduate School can process assistantship contracts.

### **Transfer Credit**

You may transfer up to 9 credit hours from another graduate program. Submit your request for transfer credit to the Biology Graduate Director. In addition to a cover letter outlining your request, please include a copy of graduate course transcripts and syllabi for the courses you wish to receive credit. The Graduate Committee in consultation with Biology faculty whose expertise matches the course(s) for which the request is made will evaluate your request.

### **Registration for Classes**

It is important that students register for courses in a timely fashion. For spring semester, 2010 all students can begin registering for classes on October 26, 2009. Failure to register at the appropriate times may result in your being unable to register for desired courses and this may delay your graduation as well as your assistantship contracts.

Students on Graduate, Teaching, and Research Assistants (see “Assistantships” below for a description of the assistantships) who are receiving tuition remission will receive this remission for 9 hours of course credit per semester (see “Tuition Remission” below). If you are an out-of-state resident and have only been awarded in-state tuition remission, you will be responsible for the remainder of the tuition. In order to receive this remission, all Assistants must have registered for their 9 credit hours before the tuition refund date as outlined in the Schedule of Classes (Fall semester 2009: September 11; Spring semester 2010: January 29). Assistants who register for additional courses after this deadline will be held personally responsible for additional tuition and fees. As established policy provides, students who drop courses after the tuition refund date will be personally responsible for drop fees and will receive a grade of ‘W’ for each course. Exceptions are made only for documented extenuating circumstances, which will be handled on a case-by-case basis by the Graduate College.

Many upper level Biology classes are cross-listed at the 400 and 500 levels, in which case you register for the 500 level class. Additional assignments will be required for credit at the 500 level. A number of upper level (300 and 400) classes in other science departments, e.g., Chemistry, Geology, and

Mathematics, are suitable for graduate credit, but are not cross listed at the 500 level. In order to receive graduate credit for those classes, you may register for BIO 595. Professors in these departments have the option of offering their course for BIO 595 credit. Prior permission of the professor and the Biology Graduate Director is required.

### **Assistantships**

The Biology Department and College of Science and Mathematics currently support 9 graduate assistantships funded at \$12,000 each. These assistantships are awarded competitively. Students are eligible to receive assistantship for up to four semesters. Students in the Biology Department may also be funded on an assistantship through other sources such as faculty grant money. The funding level and terms of these assistantships vary.

### **Tuition Remission**

Some assistantships provide 18 credit hours of tuition remission per academic year. Students must take exactly 9 hours each semester to qualify for this remission. Registering for less than 9 hours will disqualify you from the tuition remission. Any credit hours over 9 per semester must be paid by the student. Some out-of-state students may have to pay the difference between in-state and out-of-state tuition for their 18 total hours.

Students will need to sign their assistantship contract prior to the beginning of the fall semester. Please make a copy of the contract for your files. Paychecks will be deposited directly into an account of your choice. It is important to fill out the paperwork associated with the direct deposit as soon as possible after you arrive at JMU. Ms. Sheila Santee, Biology Department Administrative Assistant, can answer any questions you may have about the paperwork and finances of the assistantships.

### **First Year Assistantship Responsibilities**

First year students on assistantship are considered Research Assistants (RA) or Graduate Assistants (GA). All students on an Assistantship are expected to devote 15-20 hours per week to the fulfillment of their responsibilities. The Graduate Director will relay specific assistantship assignments for the 2009-2010 year to students in the week before the fall semester begins. Their assigned faculty member sets the general duties for Research Assistants. The general duties for Graduate Assistants are summarized in the following table. During the Fall semester, a GA will assist with laboratory preparations and grading assignments. In the spring Graduate Assistants are responsible for teaching one laboratory section. They will have been trained to teach the laboratory through faculty mentoring (BIO 600 and BIO 601) the previous fall. Assistants will be supported at \$12,000 for the academic year (August through May).

Fall Semester – Year 1	Spring Semester – Year 1
Assist with lab preparation and grading for selected course(s)	Teach one laboratory section.

### **Application for Second Year Assistantships**

First year students who wish to be considered for an assistantship for the 2008-2009 academic year must submit an Assistantship Application (see Addenda) to the Graduate Director by February 8, 2010. **Having an assistantship in the first year is no guarantee that you will be awarded an assistantship in the second year.** To retain or reapply for an assistantship, a student must maintain an overall GPA of a 3.0 or higher (<http://www.jmu.edu/grad/current/assistfacts.shtml>)

The following criteria will be used to evaluate applicants for second year assistantships.

- Approved Graduate Advisory Committee Form (due September 11, 2009)
- Approved Thesis Proposal (due January 22, 2010)
- Performance in JMU coursework
- Advisor Evaluation
- Suitability for the proposed Teaching Assistantship or Research Assistantship
- Attendance at Biology department seminars

### **Second Year Assistantship Responsibilities**

The general responsibilities for a Teaching Assistantship (TA or GA) or a Research Assistantship (RA) each are summarized in the following table.

<b>Fall Semester – Year 2</b> Teach one or two laboratories (TA/GA) or Assist Faculty Research (RA)	<b>Spring Semester – Year 2</b> Teach two or one laboratory (TA/GA) or Assist Faculty Research (RA)
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Teaching (Graduate) Assistants are responsible for teaching three laboratory sections over the course of their second year. In consultation with their thesis advisor, they will decide which semester they will teach two sections and in which they will teach one section. To be eligible, they must have trained to teach the laboratory through coursework and faculty mentoring (BIO 600 and BIO 601) during their first semester. It is expected that the student will spend 15-20 hours per week fulfilling her/his teaching responsibilities. Teaching/ Graduate Assistants will receive \$12,000 stipend for the academic year (September through May) plus tuition for 18 credit hours.

Research Assistants assist a graduate faculty member in her/his research. It is expected that Research Assistant responsibilities will require 15-20 hours per week. Research Assistants will receive \$7,237 stipend for the academic year (September through May) and may receive tuition for 18 credit hours. The faculty advisor may contribute a stipend supplement from grant funds to support a student at a higher level. Research Assistants may also be funded entirely by faculty grants but do not usually include tuition. Other funding alternatives for research assistantships may also be possible.

### **Department of Biology Seminar Series**

All graduate students are required to attend scheduled Department of Biology seminars. Seminar attendance allows you to sample a variety of research programs and methodologies presented by JMU scientists, visiting scientists, and biology graduate students. Failure to attend seminars will be deemed evidence of unsatisfactory progress toward the M.S. degree and may result in termination of financial aid or dismissal from the program. Students who have a class or teaching assignment conflict with the weekly seminars should inform the Graduate Director at the beginning of the semester in which the conflict exists. Seminars are held on Friday, 12:20-1:20 pm in Burruss 031.

## II. Programs of Study

### General Requirements

The minimum coursework requirement for graduation is 30 semester hours of graduate credit in Biology. At least 15 hours must be taken at the 600-700 levels. 6 of those credits will consist of BIO 700 (Thesis). Note that BIO 697 (Biological Research), BIO 698 (Comprehensive Continuance) and BIO 699 (Thesis Continuance) cannot be applied to the 30 semester hours required for graduation.

The objectives of the thesis-based M.S. in Biology are two-fold. First, we aim to enrich the student's subject knowledge and give the student a rigorous experience in research and thesis writing. Second, students will acquire training and experience in effective scientific communication. Training in communication will be provided through coursework (BIO 500) offered in the Biology Department and seminar presentations throughout a student's training. In addition, students may acquire training and experience in teaching. Training in teaching will be provided through coursework offered in the Biology Department and the supervised teaching of biology laboratories. Thus, students in the program will not only gain research experience, they will also learn to be effective teachers and communicators.

A sample program of study for students entering beginning in fall 2009 is presented below. Included are important deadlines. If a student follows this program of study, she/he can expect to complete the degree in two calendar years. Both the sample program and the discussion following are geared towards full time students.

### Sample Program for Full Time Students

#### Fall, Year 1

- Enroll for 9 credits of coursework, including BIO 600 (Effective Teaching I, 2 cr) and BIO 601 (Mentored Teaching, 1 cr) if either you are on an assistantship and/or you are applying for a Teaching Assistantship for the second year. BIO 500 (Scientific Communication) is also recommended for the first semester.
- Identify program advisor and committee members. Submit Committee Approval Form to the Graduate Director and TGS by September 11, 2009.
- Select thesis topic and begin literature review of topic.
- Write Thesis Proposal and obtain committee approval.

#### Spring, Year 1

- Submit approved Thesis Proposal with the Thesis Proposal Cover Form to the Graduate Director by January 22, 2010.
- Enroll for 9 credits of coursework.
- Submit an Assistantship Application for the 2010-2011 year to the Graduate Director by Monday, February 8, 2010.
- Make a 20 minute Research Proposal Presentation at a Friday Departmental Seminar between February 19 and March 12, 2010.

#### Summer year 1

- Enroll in BIO 700 for 2 credits or BIO 697 for 1 credit. Note that this coursework is NOT covered by tuition remission. TGS sometimes has extra funds to support summer coursework; request for such funds needs to be done in the spring semester before registration for summer coursework.
- Conduct thesis research, begin writing thesis

## Fall Year 2

- Enroll for 9 credits of coursework, including BIO 700, 2 cr. and BIO 500, Effective Scientific Communication, if not yet taken.
- Make a 15-20 minute Research Presentation at a Friday Departmental Seminar.
- Finish thesis research, continue writing thesis

## Spring Year 2

- Enroll for 9 credits of coursework (including BIO 700, 2 cr., in order to have 6 credits total.)
- Submit a Graduate Degree form to The Graduate School by Graduate School deadline (January 22 for 2009-2010 year)
- Finish writing thesis

### **When your advisor and committee feel that you are ready:**

- Give a 1-hour departmental seminar based on your thesis work. Contact faculty member in charge of seminars to schedule it during the regular department Friday seminar or another time
- Defend your thesis before your committee.
- Make corrections to thesis and file copies with Graduate School, noting deadlines set by The Graduate School.
- Submit Official Degree Application and Address Form
- Graduate at end of Spring Semester

**Go to The Graduate School checklist to make sure you have done everything you need to do to graduate: <http://www.jmu.edu/grad/current/forms.shtml>**

## Summer Year 2 – if necessary.

- Enroll in BIO 697 for 1 credit
- Give a departmental seminar based on your thesis work.
- Defend your thesis before your committee.
- Make corrections to thesis and file copies with Graduate School, noting deadlines set by the Graduate School.
- File Program of Study and Request for Candidacy Form
- Submit Official Degree Application and Address Form
- Graduate at end of Summer Semester

## **Selection of Thesis Advisor and Committee**

You will select a thesis advisor during your first semester in the graduate program. The thesis advisor will be responsible for directing your thesis project. Considerable thought should be given to your choice of thesis advisor, as you will be working closely with this person for two years. It may be prudent to discuss selection of an advisor with current graduate students regarding their experiences. You should also select the members of your graduate committee in consultation with your thesis advisor. Your thesis advisor must be a member of the graduate faculty (not a graduate instructor) and you must have at least two other graduate faculty or graduate instructor members on your committee. Selection of a graduate committee member is to be based on the expertise of the faculty members and their ability to contribute in a meaningful way to the graduate research project. Once you select your committee, fill out the Committee Approval Form (see addenda and downloadable at <http://www.jmu.edu/cgop/forms.shtml>) and submit signed copies to the Graduate Director and The Graduate School by September 11, 2009.

## Thesis Proposal

You should prepare a thesis proposal that outlines the nature and scope of your project, the significance of the proposed research, and the methodological details of data collection and analysis. Your thesis advisor will supply details as to the specific format that she/he wants you to follow in preparing your proposal. The proposal must be reviewed and approved by your graduate committee. ***Proposals must be submitted to your committee members at least one week before a scheduled meeting with your committee to discuss your proposal.*** A Thesis Proposal, approved by your Graduate Advisory Committee, with a Thesis Proposal Cover Form (see addenda) must be submitted to the Graduate Director by January 22, 2010. Once the Director's signature has been added to the cover page, the proposal will be passed on to the Department Head for her review and final approval.

## Application for Assistantship

Students who wish to be considered for either a Teaching Assistantship or a Research Assistantship for the second year should submit an Application for Assistantship to the Graduate Director by February 8, 2010. The Graduate Committee will evaluate assistantship applications in the second week of the spring semester and decisions will be announced by February 19.

## Registration for Thesis and Research

Once you start thesis research activity you must register for BIO 700 Thesis. An approved thesis proposal is necessary before you can register for BIO 700. As outlined in the sample program (above), you would usually sign up for 2 credits of BIO 700 for each of three consecutive semesters, i.e., summer, fall, and spring. However, circumstances may also dictate that a student register for 3 credits of BIO 700 in the fall and spring semesters of a student's final year. If, at the end of your second spring semester you have not completed requirements for graduation, you must register for 1 credit of BIO 697 Biological Research in each of the subsequent semesters including the semester in which you graduate. In addition, you may register for BIO 697, Biological Research, which reflects time spent with your research project. Note that BIO 697 receives S/U grades. BIO 700 credits are not assigned a grade until the thesis is approved and submitted to the Graduate School. When registering for BIO 700, use your thesis advisor's section, which you can obtain from the Director of the Graduate Program.

## Seminars

You will present your research progress to the department three times. In the Spring of your first year, you will present your research proposal. In the Fall of your second year, you will present your research progress to date. The format will be 15 minute presentations in a time slot shared with your classmates. The Graduate Director will select Departmental Seminar dates for these two presentations. In your final semester, you are required to present your thesis results in a one hour oral seminar to the Department of Biology. Schedule this seminar in consultation with your advisor and the faculty member who is in charge of the seminar series early in your second spring semester.

## Comprehensive Examination

For your Comprehensive Examination you are required to defend your thesis in an oral examination. Your committee will be present, and all members of the graduate faculty will be invited. Three hours should be scheduled for this examination. ***You must submit your thesis to your committee members at least one week before the scheduled thesis defense date.*** Some faculty may require you to submit your thesis to them at least two weeks before the scheduled thesis defense date. This issue should be discussed with the faculty members of your advisory committee at the time you form your committee.

## Graduation

In the semester in which you intend to graduate, you must submit to the Graduate School the following:

- Application for a Graduate Degree form (obtained from the Graduate School)
- Copy of your corrected/approved, and **properly formatted** thesis (for formatting rules, there is a link to the Thesis and Dissertation Manual at: <http://www.jmu.edu/grad/current/thesis.shtml>)
- Address Form (half-page, paper form, obtained from the Graduate School)
- Program of Study and Request for Candidacy (see addenda).

**A copy of your Thesis must also be submitted to the Biology Graduate Director.**

Please consult the Schedule of Courses for the semester in which you intend to graduate for deadlines for submission of these forms.

## Part Time Students

Part time students are not expected to follow the programs outlined for full time students. Instead, part time students should devise a timeline for their programs in consultation with their faculty advisor and advisory committee. This timeline should include dates for the submission of the Graduate Student Advisory Committee Form, Thesis Proposal with cover form and an anticipated graduate date. This timeline should be submitted, in writing, to the Graduate Director by the end of the student's first year.

### III. Addenda

Committee Approval Form (download at <http://www.jmu.edu/grad/forms>)

Cover Page for Thesis Proposal (Thesis Concentration)

Application for Second Year Assistantship