



IOWA STATE UNIVERSITY  
Department of Entomology

# ENTOMOLOGY GRADUATE STUDENT HANDBOOK

**August 2008**

Department Chair: Dr. Les Lewis

Director of Graduate Education (DOGE): Dr. Joel Coats

Departmental Graduate Secretary: Kelly Kyle

## ENTOMOLOGY GRADUATE STUDENT HANDBOOK

**August 2008**

### **Disclaimer**

Entomology graduate students will receive a hard copy of this handbook upon entry into the graduate program. The handbook is also available on the web as a pdf file at:

<http://www.ent.iastate.edu/dept/grad/handbook.pdf>

The handbook will be updated annually during the summer. The updated version will be posted on the web, and a summary of key changes forwarded to students by e-mail.

*IMPORTANT: It is the responsibility of the student to be aware of revisions to this handbook that will affect their degree program.*

## FORMS

NOTE: The DOGE signature for Entomology, required on almost all forms, is that of Dr. Joel Coats, 110 Insectary, [jcoats@iastate.edu](mailto:jcoats@iastate.edu), 294-7400. Dr. Les Lewis as the Chair of Entomology also signs theses and dissertations.

### Add/Drop Slip (yellow half-sheet)

These forms are available at the Graduate College, 10 Pearson Hall and in the department office, 110 Insectary.

Use to add/drop courses after the first week of classes.

Use to add courses if registering for the first time for a particular semester and if you do not have a registration access code.

Graduate College Forms Page--all of the forms below are located on this web site:

<http://www.grad-college.iastate.edu/forms/forms.html>

### Request for Professional Advancement Grant (PAG)

You can request funds from the Graduate College and the Graduate and Professional Student Senate (GPSS) to attend and or present at conferences and symposia, or to conduct research outside of your thesis/dissertation requirements.

Information on these funds can also be found through the GPSS homepage:

<http://www.grad-college.iastate.edu/gpss/>

Checklist: Requirements for Completion of the Entomology Graduate Program  
(see pages 19-20 of this handbook).

### Recommendation for Committee Appointment with Instructions

Complete by the end of the first year of graduate study

### Request to Change Committee Appointment

As needed

### POS (Program of Study) with instructions

Should be completed by the end of the first year. Ideally all Entomology courses should be listed first.

### POS (Program of Study) Supplement

If you need more room to list your courses

### Modifications to the Program of Study

If you need to add or remove courses to your approved POS

### Request for Preliminary Examination (not available on the web)

Applies to Ph.D. students only.

Complete Preliminary Examination by the end of the first semester of your third year of Graduate study. This examination will include both a written and oral component. This form is available in the department office and Graduate College. This should be turned into the Graduate College 3 weeks in advance of your

preliminary examination. The Preliminary Examination form will be sent to Kelly Kyle who should then send it on to your major professor. Preliminary exam must be passed at least 6 months prior to taking your final exam.

## Graduation

The graduate college site provides the date deadlines by semester and the steps/forms necessary to graduate. <http://www.grad-college.iastate.edu/deadline/deadlines.html>  
The deadlines are critical. Missing a deadline can delay graduation by a full semester.  
Required forms include:

### Application for Graduation (Diploma Slip)

Must be filed in the first week of the semester in which you plan to graduate (or mid-May if you want to graduate during the summer semester).

Thesis—Information on Abstract, Preliminary Format Checklist, Final Submission Checklist and Thesis sample pages can be found through this web site:

<http://www.grad-college.iastate.edu/forms/forms.html>

See above graduation deadlines for due date

A copy of your thesis must be provided to each of your committee members at least two weeks prior to final oral examination.

### Request for Final Oral Examination (not available on the web)

This form is available at the Graduate College and in the department office.

See above graduation deadlines for due date.

Must be turned into Graduate College three weeks prior to final exam date.

### Final Examination Form

Will be sent to Kelly Kyle with the expectation that it will be sent on to your major professor. Check that your major professor has this form prior to your final exam.

**Approval Slip for Graduation** The Graduate College will send your department or major professor the Approval Slip with the "Report of Final Examination" form after your Request for Final Examination is received and approved.

### Thesis Final Submission and Graduation Checklist

Includes information on deadlines

<http://www.grad-college.iastate.edu/forms/files/FinalSubChecklist.doc>

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Iowa State University website: <http://www.iastate.edu>

Go to the ISU Index which is at the top of the page; just about everything you need to know is on-line.

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## INTRODUCTION

### THE DEPARTMENT OF ENTOMOLOGY: HISTORY AND DEVELOPMENT

Entomology developed as part of zoology at Iowa State University (ISU) in 1872. In 1880, entomology was offered as a separate course that was taught by Professor Herbert Osborn. Professor Osborn moved to The Ohio State University to continue his illustrious career after making a strong impact at ISU. Since the beginnings of entomology at ISU, the discipline has endeavored to uphold the motto of the University, "Science with Practice" through a tradition of basic scientific research with practical applications for Iowa agriculture. This commitment began with Osborn, the first entomologist at ISU, who was not only an internationally recognized authority on the Hemiptera but also contributed greatly to economic entomology. This commitment continued to the present focus of the department on integrated pest management.

From 1962-74, the department functioned partly through three sections, Zoology, Entomology, and Fisheries and Wildlife Biology, with a professor in charge of each section. On January 1, 1975, the Department of Zoology and Entomology was separated by action of the State Board of Regents into Departments of Animal Ecology, Entomology, and Zoology. Thus, the Department of Entomology has emerged from a long tradition of entomological teaching and research at Iowa State University.

Entomologists at ISU have always been among the leaders in the country in developing new knowledge about pest insects affecting crops, as well as human and animal health and in delivering this knowledge to citizens. For instance, the first Insect Physiology course in the US was taught at ISU. This campus had a world-renowned program in Insect Physiology in the 1930's - 1950's and was the recognized center in the world for insect circulatory system research. The first proof of the differences between insects and mammals in metabolizing organophosphorous insecticides was demonstrated by ISU researchers. One of the first identifications of an endogenous chemical factor from crop plants shown to confer resistance to insects (MBOA in corn) was identified by ISU entomologists and incorporated into commercial lines. The first course in the United States dedicated solely to insect population management was offered here in 1970, and the first interdisciplinary conference in integrated pest management in the US was held here in 1974. In 1982, ISU entomology researchers were the first to use air-parcel trajectory analysis to predict the arrival of insects and provide an early-warning system for growers against incoming crop pests. In 1992, ISU Entomology researchers were the first to incorporate the environmental costs of pesticide use into the classical economic injury level concept, to create a novel concept called the "environmental economic injury level."

### OVERVIEW

Entomologists at ISU have engaged in teaching, research, and extension for more than a century. Professor Herbert Osborn taught the nation's first entomology course in 1880, beginning a tradition of excellence in basic and applied entomology. The Department of Entomology faculty work to provide an excellent education, develop innovative research programs and supply a creative, highly visible problem-solving extension program. The department is part of the College of Agriculture at Iowa State, which is Iowa's land-grant university.

The department offers 24 entomology courses, spanning undergraduate and graduate curricula. Entomology faculty members also teach in the undergraduate biology program.

The department's research productivity, based on publications per faculty member, is the highest in the College of Agriculture. Faculty members have earned numerous local, regional, and national awards for their accomplishments in entomology.

Researchers collaborate with several affiliated groups on and near the campus. They include: USDA-ARS Corn Insects and Crop Genetics Research Unit, North Central Plant Introduction Station, The Leopold Center for Sustainable Agriculture, the Center for Crop Utilization Research, and other departments in the Colleges of Agriculture, Engineering, Family and Consumer Sciences, Liberal Arts and Sciences, and Veterinary Medicine.

Other activities within the department bring faculty and students together and provide opportunities for personal and professional interaction. These activities include a research seminar series, VEISHEA social events, Entomology Graduate Student Organization (EGSO) events, and the holiday party.

## ADMINISTRATION

The activities of the Department of Entomology are overseen by the chair and a variety of departmental committees.

<i>Chair:</i>	Dr. Les Lewis
<i>Director of Graduate Education:</i>	Dr. Joel Coats
<i>Departmental Graduate Secretary:</i>	Kelly Kyle

## UPON ARRIVAL AT IOWA STATE

When you first arrive, you may find yourself overwhelmed by the number of things you must do. Here is a list of some of the most important.

1. Visit the ENTOMOLOGY OFFICE in 110 Insectary. Introduce yourself to Kelly Kyle, the Program Coordinator; Kelly can help you find your way around the University administrative offices.
2. **Read this HANDBOOK.** It is especially important to read the section on ADMINISTRATIVE MATTERS during your first few days. This handbook is available on-line: <http://www.ent.iastate.edu/dept/grad/handbook.pdf>
3. Register for e-mail (Durham Hall) and plan to check it regularly. *E-mail is Entomology's most common means of communication.*
4. These references contain all the University regulations and requirements for graduation.

**Graduate College Handbook**

**Graduate College Thesis Manual**

They are available on the Web through the ISU Graduate College at <http://www.grad-college.iastate.edu/publications/homepage.html>

Iowa State Graduate College forms are available on the Internet at:

<http://www.grad-college.iastate.edu/forms/forms.html>

5. Other references you may wish to obtain include:
  - General Catalog: campus bookstore  
or on the web: <http://www.iastate.edu/~catalog/>
  - Schedule of Classes: ISU bookstore  
or on the web: <http://www.iastate.edu/~catalog/schedule/>
  - Iowa State University phone/e-mail directory (ISU bookstore)  
Contains two-year calendar of academic dates and deadlines  
Phone/e-mail directory on the web: <http://ph.iastate.edu/cgi-bin/phf>

Other References available on the web can be located through the Iowa State University Homepage: <http://www.iastate.edu> Note the alphabet at the top of this page; you can click through to many subject headings.
6. Other web sites of interest
  - Iowa State University forms are available on the Internet at:  
<http://www.adp.iastate.edu/forms.html>

**ISU University-wide POLICY LIBRARY:** <http://policy.iastate.edu/>

## GETTING STARTED - YOUR FIRST YEAR

### GRADUATE STUDENT ORIENTATION

For new graduate students, the academic year begins with an orientation period, which is designed to ease the transition to graduate study at Iowa State. It is a time to become acquainted with the entomology program and its members and to prepare for registration and the start of classes. Along with this handbook, you should have received a schedule of important orientation activities from entomology, as well as the Graduate College. Please refer to them for information about your responsibilities during orientation.

### LABORATORY SAFETY TRAINING

All new graduate students participate in OSHA Lab Standard Training. This Training can be conducted by the University Environmental Health and Safety Office (EHSO) (Karen Schoen, Training, 294-8338) or the student can complete this requirement on-line by following these instructions (see next page).

Environmental Health and Safety: <http://www.ehs.iastate.edu/cms/default.asp>

Click on: Learning Center Login:

LOGIN using your University ID card number and password

Click on: On-Line Courses:

Take the following:

Chemical Hygiene Plan and Personal Protective Equipment (new format-Audio)

Fire Safety and Extinguisher Training

ISU-EPA Hazardous Waste Generator Online Training

### STUDENT MENTOR

The vice president of the Entomology Graduate Student Organization (EGSO) will assign a student mentor for each new graduate student in Entomology. Your mentor will assist with procedures such as payroll, and acquiring a university ID card. See "Guidelines for student mentors" in the appendix.

### EVALUATING YOUR PERFORMANCE

Continued membership in the Entomology program and financial support is contingent upon satisfactory progress towards your degree. At the end of each fiscal year, your progress will be evaluated by the Chair. Reappointment is contingent on satisfactory performance based on:

- Grades: A cumulative GPA of at least 3.0 is required by the Graduate College for one-half tuition support by the Graduate College. If your overall GPA drops below 3.0 it is likely that you will have to pay this tuition yourself. The grading scale at ISU is: A (4.0), A- (3.67), B+ (3.33), B (3.0), B- (2.67), C+ ( 2.33), C (2.0), C- (1.67), D+ (1.33), D (1), and F (0). Research grades (699) do not count towards GPA.
- Progress in the initiation of your research project based on the recommendation of your major professor.

## ACCESSPLUS

AccessPlus is your secure and personalized online resource for accessing your important and confidential university information and web applications. AccessPlus is available to Iowa State University students and faculty/staff, day or night, seven days a week, from anywhere in the world.

To login to AccessPlus, all you need is your University ID, and your university PIN. Once inside AccessPlus, your tabs and menus are customized to meet your specific needs. For example, only registered students can view their current course schedule, and only faculty/staff can view their most recent pay information.

AccessPlus offers a wide range of services from changing your address and managing your CyCash account to viewing or even paying your university bill online. Some of the other many services available for **students** through AccessPlus include:

- class registration
- class schedules
- financial aid
- grade reports and transcripts
- job board
- residence halls and dining
- graduate student status
- university bill
- payroll and benefits

## WEB SITE

Contact John Van Dyk ([jvandyk@iastate.edu](mailto:jvandyk@iastate.edu)) about creating your web site to be added here: <http://www.ent.iastate.edu/dept/gradstudents/>

## ACADEMIC MATTERS

### DEGREES OFFERED

Entomology offers coursework and research experiences leading to the degrees of Master of Science and Doctor of Philosophy. An option for an emphasis in Molecular Entomology is available. The department also offers a minor in Entomology and participates in the Emerging Global Diseases minor. See the course catalog for full details. Because entomology is a research-based discipline, non-thesis Master of Science degrees are not offered.

### ADMISSION TO A GRADUATE DEGREE PROGRAM

The degree which a student may pursue in Entomology (that is, M.S. or Ph.D.) is normally determined and specified at the time of the student's admission to the program. Although a prior M.S. is not required for admission to the Ph.D. program, criteria for admission to the Ph.D. program are more stringent than to the M.S. program and excellent performance in a prior M.S. program is helpful.

Students wishing to enter a Ph.D. program in entomology after completion of an M.S. in entomology must re-apply to the program. Again, their application for admission is judged by the same criteria as students applying for admission to the Ph.D. program from other programs or institutions.

### REQUIRED PREREQUISITE COURSES

Completion of at least two years of zoological courses is required for students wishing to major or minor in entomology. Courses in closely allied biological sciences may be substituted. Specific course requirements for advanced degrees depend partly upon previous training and experience in the major field of specialization. If a student enters without a course in entomology then he or she must take Insect Biology (ENT 370) or Fundamentals of Entomology and Pest Management (ENT 376).

### REQUIRED GRADUATE COURSES

To assure that all our students are trained in key areas of entomology, all students are required to take certain courses and participate in certain activities. For core courses, students must attain a grade of B or higher.

Any student receiving the M.S. in entomology shall have at least one course in insect physiology, one course in insect systematics, two courses of ENT 590 (selected from topics A through D, F through I, M and N, inclusive), and at least one credit of ENT 600. Students seeking an M.S. degree must take a total of 32 credits. This includes the core curriculum, and research credits. M.S. students are strongly encouraged to attend departmental seminars.

Any student receiving the Ph.D. in entomology shall have at least one course in insect physiology, one course in insect systematics, four additional courses of ENT 590 (selected from topics A through D and F through I, M through N inclusive), and at least one credit of ENT 600. At least one 590 must be taken from each of these subgroups: Population,

Organismal, Suborganismal (see table below). In addition, Ph.D. students majoring in entomology shall have two semesters of teaching experience, taken as ENT 590K both semesters or ENT 590K one semester and ENT 590L the other semester.

Ph.D. candidates must take at least 72 credits, including the core curriculum, at least 3 research credits, and are expected to attend seminars. Additional course work may be selected to satisfy research interests, and expectations of your Program of Study (POS) committee. (See page 21 for information on your POS committee)

Ent 590. Special Topics. 1 - 3 credits each time taken. (See appendix for further information).

Population	Organismal	Sub-Organismal
C. Ecology and Pest Management	A. Biological Control and Pathology	G. Molecular Entomology
D. Evolution and Systematics	B. Chemical Ecology and Behavior	H. Physiology and Biochemistry
N. Population Genetics	F. Medical and Veterinary Entomology	I. Toxicology
	M. Immature Insects	

- E. Special Research Topics
- K. Teaching Experience
- L. Extension Internship

*A cumulative 3.0 (B) grade point average must be maintained by the student to remain in good standing.*

**SUMMARY TABLE FOR COURSE REQUIREMENTS BY DEGREE SOUGHT**

Requirement	Course No.	Course Name	Ph.D.	M.S.
Systematics	ENT 576	Systematic Entomology	X	X
Insect Physiology	ENT 555	Insect Physiology	X	X
Special Topics	ENT 590	Special Topics	4X	2X
Teaching Experience	ENT 590K ENT 590L	Teaching Experience Extension Internship	2X	
Seminars	ENT 600	Research Seminar	X	X
Research	ENT 699	Research	required	required
Minimum Number of Credits			72	32

### *Requirements for an Emphasis in Molecular Entomology*

Any student receiving the M.S. in entomology with an emphasis in molecular entomology is required to take Ent 555, Ent 590G, plus one other course of Ent 590 (selected from topics A through D, F, H, I, M, N), one additional course in molecular entomology, Ent 600 Seminar, BBMB 404, BBMB 542A, and one course from the following: Ent 576, Ent 525, or Ent 568.

Any student receiving the Ph.D. in entomology with an emphasis in molecular entomology is required to take Ent 555, Ent 590G, plus three other courses of Ent 590 (selected from topics A through D, F, H, I, M, N), one additional course in molecular entomology, Ent 600 Seminar, BBMB 542A, plus two other workshops selected from BBMB 542 B through E, an additional course with a molecular component, and one from each of the following two categories: Systematics (Ent 576, Ent 525, Ent 568), Biochemistry (BBMB 404, BBMB 405, BBMB 501). <http://www.ent.iastate.edu/molecular/>

### *Requirements for a Minor in Entomology*

A student can receive a PhD minor in Entomology by taking 3 Entomology courses 500 and above for a total of 9 credits as determined by the student's POS and approved by the Entomology Director of Graduate Education. One member of the student's POS committee (see below) must be in Entomology.

### *"Testing Out" of Required Courses*

If you feel that you already know the material covered in one or more of the required courses, you may petition to be excused from the requirement. To do this, first discuss the idea with your major professor, POS committee, and the course instructor. If they agree that you already know the material, at the time you submit your POS form to the DOGE for signature, include a memo, signed by your major professor and the course instructor, stating that you have taken an equivalent class and that you are knowledgeable on the subject. Be sure to specify the name of course that you feel substitutes for the entomology requirement, as well as the grade received, year taken, and institution.

**A word of caution:** If you are excused from an entomology course requirement, do NOT forget to review the topics covered by the course prior to your preliminary (PhD students) or final exam (MS students)! You will be expected to be as knowledgeable on this topic as all other students.

### *Transferability of Credits from other Institutions*

The transferability of credits from other institutions will be determined on a case-by-case basis by the student's POS committee and the entomology chair. To waive a course requirement, the student must send a memo signed by his or her major professor (on behalf of the POS committee) and the instructor of the course the student wishes to waive, to the entomology chair. The memo must state that the student has already received satisfactory instruction in the subject matter covered by the required course. Credits for seminars, workshops, and colloquia are not transferable.

## REQUIRED ACTIVITIES

As a part of your training, graduate students majoring in Entomology are required to participate in certain, non-course activities. Failure to fulfill these requirements may result in delay of graduation.

### *Graduate English Examination.*

- If you are a native-speaker of English pursuing an advanced degree at ISU, you are *not* required to take the diagnostic Graduate English Exam. International students should contact: Kristi Anderson  
104 Landscape Architecture  
(515) 294-3568  
[kanderso@iastate.edu](mailto:kanderso@iastate.edu)
- If your native language is *not* English and you did *not* receive your undergraduate degree from ISU, you must take the English Placement Test at the beginning of your first semester of enrollment.
- If your native language is *not* English, but you *did* receive your undergraduate degree from ISU, you must take the Graduate English Examination for International Students at the beginning of your first semester of graduate work.

### *Teaching Requirement.*

The intent of this requirement is to strengthen graduate student communication skills, reinforce subject matter learning, and form a sound base for achieving departmental teaching objectives. Teaching experience benefits students for future employment opportunities.

All PhD students are required to teach for two semesters during their PhD student career. MS students are also encouraged to participate. Students having had TA experience at another University, or as a Master's student at ISU, may petition to waive all or part of this rule. This teaching experience can either be in a classroom or a non-classroom situation that requires presenting information to an audience (extension, elementary schools, etc.). Preparation of teaching materials (e.g. insect specimens) may satisfy part of the requirement, but each of the two semesters must include actual teaching. Credit may be obtained through enrollment in either ENT 590K (Teaching experience), or ENT 590L (Internship experience in the techniques of organizing and disseminating applied entomological information). ENT 590L may be selected only once in satisfying this requirement.

Each teaching experience will be assigned one or two credit hours to be determined in consultation with the instructor. At least one of the semesters of teaching must be at the undergraduate level (100-300 level courses). *Courses selected and proposed semesters for satisfying the requirement should appear on the student's Graduate College Program of Study form.* Students will receive a higher stipend during the semesters when they teach if the funds are available.

Formal training in teaching may be required for specific courses. The additional requirement most likely is enrollment in the two-day college teaching seminar/workshop offered each August by the Center for Excellence in Learning and Teaching (CELT), which would be taken prior to enrollment in ENT 590K. <http://www.celt.iastate.edu/> A Teaching Assistant Handbook is also available on-line:

<http://www.celt.iastate.edu/teaching/TAhandbook.html>

Students whose first language is not English are required to take and successfully pass a Speak-Teach Test (administered by the Graduate College) before assuming teaching responsibilities, preferably in the first year of enrollment at ISU. This test is given in the weeks before the beginning of each Fall and Spring semester.

Teaching performance of students enrolled in ENT590K and ENT590L will be evaluated by the faculty member in charge of the course taught or the extension activity planned. An S/U grading system has been encouraged for these courses, but individual faculty may choose to assign a letter grade.

Entomology courses that require Teaching Assistants (590K) are:

				Offered
ENT 370	Insect Biology (multiple sections).	Fall	Jurenka	
ENT 376	Fundamentals of Entomology and Pest Management (multiple sections)	Fall/Spring	Tollefson, O'Neal	
ENT 675	Insecticide Toxicology	Alt. Fall	Coats	2007

Courses for which a TA is desirable:

ENT 425/525	Aquatic Insects	Alt. Spring	Courtney	2007
ENT 555	Insect Physiology	Spring	Jurenka	
ENT 573	Advanced Insect Pest Management	Alt. Spring	Tollefson	2007
ENT 576	Systematic Entomology	Alt. Fall	Courtney	2007

Students should contact the faculty member in charge of these courses for assignment of TA slots.

### *Scientific Ethics*

All students majoring in entomology are required to attend the Scientific Ethics Workshop during Orientation (August or early September). You will be introduced to the concepts of ethical behavior and good practice in science. Included in the presentation will be a discussion of proper research methods, ways to avoid self-deception in the practice of science, and scientific misconduct. Other courses that address scientific and bioethics include GDCB 565A Professional Practices in Research. Additional resource:

“On Being A Scientist: Responsible Conduct in Research” National Academy Press, Washington D.C. 1995. On the web at: <http://www.nap.edu/readingroom/books/obas/>

### OTHER ACTIVITIES

The activities listed below are not required, but are encouraged. Your participation helps Entomology do its job better and is thus appreciated.

### *Entomology Seminars*

Students are encouraged to attend the Entomology seminars held on Mondays at 4:10 pm. Attendance of these seminars will increase awareness of entomological research conducted both at Iowa State University and at other institutions. Graduate students generally have the opportunity to meet with visiting speakers informally over lunch.

### *Prospective Student Recruitment*

Occasionally, Entomology may ask you to meet for lunch or evening meals in an informal atmosphere with prospective graduate students. This is an opportunity for the prospective student to get the “real scoop” on graduate training at ISU. Entomology pays for the meals. Notices of meeting opportunities are made through e-mail to all of our graduate students.

### *Service on Departmental Committees*

Graduate students are encouraged to serve on departmental committees. A graduate student representative serves on each committee within the department.

### *Membership in Professional Societies*

Membership in professional societies such as the Entomological Society of America (ESA: <http://www.entsoc.org>) is recommended. There are many other professional societies. Consult with your major professor for societies relevant to your research area. There are multiple travel and other awards available to student members through these societies. See Appendix IV for student awards available through ESA.

### *Training in Grant Writing and Publishing*

The following are courses that offer training and experience in grant writing and publishing in research journals.

**English 509 Writing Proposals and Grant Applications.** If you are interested in learning from an expert how to write proposals for agencies such as NIH and NSF, honing your writing skills before entering the professional world, or in just making a good investment in your future, register for this class.

**Grant Proposal Writing FSHN 695.** Contact instructors prior to enrollment. Grant proposal preparation experiences including writing and critiquing of proposals and budget planning. Formation of grant writing teams in food science and/or nutrition. Offered on a satisfactory-fail grading basis only. One credit. Offered alternate falls (2008, 2010).

**Publishing in Plant Science Journals HORT 529.** Permission of instructor is required; evidence of a publishable unit of the student's research data. Process of preparing a manuscript for submission to a refereed journal in the plant sciences. Emphasis on publishing self-generated data from thesis or dissertation research.

*Preparing Future Faculty:* <http://www.celt.iastate.edu/pff/>

Preparing Future Faculty (PFF) is a national program for postdoctoral fellows and master's and Ph.D. students, which is designed to supplement your departmental preparation. It will help you better prepare for a faculty career through a combination of seminars, mentoring, and practical classroom and service experiences. As a result, PFF can help you increase your competitive edge in the academic market.

The Iowa State PFF program is designed to be flexible. You may enter the program for as few as one or as many as four semesters, and semester components can be altered to fit your individual circumstances.

**CHECKLIST FOR COMPLETION OF GRADUATE REQUIREMENTS  
FOR ENTOMOLOGY MAJORS**

Student: \_\_\_\_\_  
 Degree Sought: \_\_\_\_\_  
 Date Started at ISU \_\_\_\_\_  
 Major Professor: \_\_\_\_\_  
 Co-advisor (if any): \_\_\_\_\_  
 Major: \_\_\_\_\_ ENTOMOLOGY \_\_\_\_\_  
 Minor or Co-Major: \_\_\_\_\_

For each requirement in the following sections, list the term and year you met the requirement; for example, F07, S08, or SS08. If you have not completed a requirement yet, leave the line blank. Times when you should complete each requirement are indicated in parentheses.

**Academic Requirements**

English Requirement met: \_\_\_\_\_  
 (date)

POS Committee Formed/Approved by the Graduate College: \_\_\_\_\_  
 (by end of second semester) (date)

Research Plan and Program of Study Approved by the POS Committee/Graduate College:  
 \_\_\_\_\_  
 (by end of second semester)

Preliminary Exam (Ph.D. only): \_\_\_\_\_  
 (by the end of first semester of third year) (Note: The preliminary exam must include a written component.)

Yearly POS meeting: \_\_\_\_\_ (indicate date)  
 (recommended that this be in October of each school year following the Ph.D. Prelim; at least three committee members must be present. M.S. students are encouraged to meet yearly until final defense; at least two committee members must be present.)

Thesis Submitted to POS Committee: \_\_\_\_\_  
 (Note: Unless an exception has been approved, your thesis must include one or more first author papers written in a form suitable for submission to a journal. The thesis must be given to your POS committee at least two weeks prior to your defense.)

Manuscript requirement met: \_\_\_\_\_

Final Research Seminar: \_\_\_\_\_  
 (Note: the seminar should be given during the regularly scheduled seminar series.)

Defense: \_\_\_\_\_  
 (date)

Signatures: \_\_\_\_\_ Student \_\_\_\_\_ Major Professor (Please read both sides)

### Course and Training Requirements

(Note: All courses and non-course training taken during an M.S. program in Entomology counts towards the Ph.D. All core courses in which a student receives a B- or lower are not satisfactorily completed and must be repeated for graduation. The transferability of credits from other institutions will be determined on a case-by-case basis by the student's POS committee and the DOGE. To waive a course requirement, send a memo, signed by your major professor (on behalf of your POS committee) and the instructor of the course you wish to waive, to the DOGE. The memo should state that you have already received satisfactory instruction in the subject matter covered by the required course. Credits for seminars are not transferable.)

#### Core Courses (indicate semester/year and grade)

Insect Physiology  
ENT 555 \_\_\_\_, \_\_\_\_  
(semester/year, grade)

Systematic Entomology  
ENT 576 \_\_\_\_, \_\_\_\_  
(semester/year, grade)

Comments and Clarifications (course waivers, transfers, when courses will be repeated if B- or lower, etc.)

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#### Other Required Courses and Training (indicate semester/year)

ENT 590 \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_  
(Special Topics: 2 for MS, 4 for PhD)

ENT 590K/L \_\_\_\_, \_\_\_\_  
(Teaching Experience: 2 for Ph.D.)

ENT 600 \_\_\_\_  
(Seminar: 1 for M.S., 1 for Ph.D.)

#### Activities (indicate semester/year)

Scientific Ethics Training: \_\_\_\_\_

Conferences/Scientific Meetings (title, date, and note if poster or talk were presented)

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Publications (attach additional sheets if needed):

Note: **A draft of at least one manuscript is required prior to graduation** (see page 24)

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Awards or Fellowships received while at ISU

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## PROGRESSING THROUGH YOUR DEGREE PROGRAM

The Graduate College homepage is an excellent source of information for progressing through your degree requirements:

<http://www.grad-college.iastate.edu/homepage.html>

All of the forms listed in this section can be found on the web at:

<http://www.grad-college.iastate.edu/forms/forms.html>

Earning your degree:

<http://www.grad-college.iastate.edu/degree/earning.html>

Individual status of your graduate training as processed through the Graduate College can be found on ACCESS PLUS under the Student Tab under “**Graduate Student Status**”. This link will show members of your committee, and the various documents filed.

### COMMITTEE APPOINTMENT AND PROGRAM OF STUDY

You will, in consultation with your major professor, decide on a suitable program for completion of your graduate course work. It is then necessary to appoint a graduate Program of Study (POS) Committee. The composition and responsibilities of the POS committee will be in accordance with the Graduate College guidelines.

The POS committee should include faculty whose research interests can aid and complement your research interests, as well as faculty whose expertise will ensure that you graduate with a breadth of knowledge. The POS committee for a **doctoral** program must consist of at least five members of the Graduate Faculty. The committee must include at least three faculty, including the major professor, from within the entomology department. At least one faculty member must be outsideby your POS committee. This member of the POS committee should be someone who can provide relevant specialized knowledge, a different perspective helpful to the planning, execution, and reporting of research, or some aspect of intellectual diversity deemed important by the committee.

#### Entomology Majors: Graduate College Requirements for Composition of Program of Study Committees

Below are listed the current minimum requirements for the composition of Program of Study Committees. The rules are established by the Graduate Council and enforced by the Graduate College, but are listed below in terms of a student majoring in Interdepartmental Genetics. All individuals listed below must be members of the Graduate Faculty. See the Graduate College Handbook for a complete explanation and instructions on how to have co-major professors, additional members, *etc.*

		Ph.D.	M.S.
Major Professor	Inside Entomology	X	X
Committee Member	Inside Entomology	2X	X
Committee Member	Outside Entomology	X	X
Minimum Total		5	3

The POS committee for a **master's** student must consist of at least three members of the Graduate Faculty. It must include two members, including the major professor, from inside the ENTOMOLOGY department. One member of the committee must be outside the department.

Once the chosen members of the POS committee have agreed to serve, you should complete the Graduate College form "Recommendation for Committee Appointment" and submit it to the ENTOMOLOGY DOGE for approval. On the committee form, under major, print or type: Entomology. After official appointment of the committee, copies of the form will be returned to you and your major professor. A third copy is placed in your file in the department office.

The next step is to call your committee together (all committee members must be present), inform them of your research plans, and ask for their evaluation of your plans. This is also the time to complete your Program of Study (POS). The Graduate College Program of Study is one of the more important documents you will encounter while in graduate school. In essence, it is a contract between you and the graduate school indicating the minimum course work which must be taken to complete a Ph.D. or M.S. degree. No changes can be made in it without the mutual approval of yourself, your committee, and the Graduate College. No changes can be made to it without the approval of your committee, and the Graduate College. List the required courses for the Entomology major at the top of the form.

#### TRICKS OF THE TRADE - A better way to schedule POS meetings

All students, at several times during their graduate career, will be faced with the unpleasant task of scheduling a POS committee meeting. The following is some advice regarding this process.

Many students seem to start by picking a time (presumably convenient for them and for their major professor, but not always) and then checking to see if the other POS members are free then. They usually aren't. Several rounds of phone calls and/or e-mail ensue until a suitable time is found. Sometimes the process lasts for days, until finally the students are sick of the process and secretly vow to avoid ever getting their committee together again.

There is an easier way. Students need to realize that many professors have very full schedules. Hence, a better approach would be to pick a two-week interval in consultation with their major professor and then ask the POS committee members to list their free times during that interval. Following the advice of the major professor, the student should determine the amount of time required for the planned meeting. A minimum of 3 hours will be required for Preliminary and final exams. This value should be indicated in the initial message to the POS committee members. The two-week interval should be at least several weeks in the future for an initial POS meeting (which would only require one or two hours) and probably a month or more in the future for a qualifying/preliminary exam or a final defense, which would require a longer time slot. After the faculty respond, the student can select one time when everyone is free, and confirm the time slot by e-mail with POS committee members. This whole process needs to be completed in one or two days so that slots that were free during the initial inquiry remain free. E-mail is the preferred method of communication.

Once a time has been determined, the student should reserve a room for the appropriate amount of time. Suggested rooms are 5 Insectary (contact Kelly Kyle Tel: 4-7400), Genetics conference room (contact Judy Shoen, Tel: 4-9343), 109 Science I (Tel: 4-1630; Microbiology office), 114 Science II (Tel: 4-6148, NREM office), 541 Science II (Tel: 4-3317; GDCB office)

## DISSERTATION RESEARCH PROPOSAL

By the end of their first year in their major professor's laboratory, Ph.D. candidates majoring in entomology must present a description of their proposed dissertation research to their POS committees at or before the time they submit their proposed Program of Study to their POS committee. The proposal must include a written component submitted to the POS committee at least one week prior to the oral presentation. The length and formality of the written and oral components will be determined by the major professor. However, the written component must be self-contained and understandable independently of the oral presentation. All members of the POS committee must be present during the oral component.

After this initial proposal, a POS committee may require, if it so desires, a longer or more formal proposal; for example, a detailed written proposal as part of the Ph.D. preliminary exam.

Research proposal requirements, if any, for Master's degree candidates are determined by their POS committee.

## PRELIMINARY EXAMINATION

All graduate students must pass certain examinations before obtaining their advanced degrees. For a Ph.D. candidate, the first of these examinations is the preliminary examination (Master's degree candidates are not required to take a preliminary examination). ***This examination should be completed by the end of the first semester of the third year of graduate training.***

To initiate your preliminary exam, a Request-for-Preliminary-Examination form should be turned into the Graduate College at least two weeks prior to the date of your preliminary examination. Request-for-Preliminary-Examination forms are available in the departmental office and at the Graduate College. After processing your request, the Graduate College will forward the Preliminary-Examination form to Kelly Kyle who will give this form to your major professor. The results of the preliminary examination will be recorded on this form, signed by all committee members and returned to the Graduate College. All committee members must be present at this examination.

The purpose of the preliminary examination is to test:

- breadth of knowledge in the area of entomology
- depth of knowledge in a student's particular research area
- critical thinking skills especially as they pertain to the scientific method and hypothesis-based research

For this purpose, the preliminary exam must contain both a written and an oral component. The written component is to be administered before the oral exam and must include questions testing your knowledge of entomology. Every committee member must be given the opportunity to present written questions to be answered by the candidate in a manner determined by the committee member (e.g., take home exam, open book, time limit, length limit, etc.). Ideally, each committee member will respond to this invitation by providing his/her questions in a timely fashion. One of the written examination tasks, frequently asked for by the major professor, may be the preparation of an updated research proposal about the candidate's dissertation research plans. If applicable, this proposal should be shared with the whole committee before the oral component of the exam.

The oral component of the preliminary examination should cover additional areas of entomology as well as test the candidate's ability to solve problems and address scientific questions in an appropriate manner. For example, the oral section could be structured as follows: i) a short summary of research progress and proposed experiments given by the candidate; ii) a period of questions directly interrogating an understanding of the dissertation research project; iii) a period of questions targeting an understanding of entomology in its widest concept. This is a non-binding suggestion, and ***we very strongly recommend that each PhD student speak with all of his/her committee members well in advance of the preliminary examination to obtain a good concept of what will be expected.***

#### GUIDELINES FOR PREPARING FOR YOUR PRELIM

Do not underestimate the importance of this examination. Your committee will be particularly interested in your ability to communicate (i) experimental design and interpretation of data, (ii) knowledge of facts that are directly or only indirectly related to your presentation that may pertain to entomology or other fields related to your research, (iii) depth of understanding of material presented and associated information.

Your goal will be to demonstrate proficiency of knowledge and critical thinking skills at the level of a Ph.D. student. To prepare for this exam, you should systematically go through your research presentation and revise material related to it from the literature, textbooks and class notes. You should think about results (achieved or expected), interpretation of those results and subsequent experiments that you might carry out. You should understand the strengths and limitations of the experiments. What will the experiments tell you specifically about your hypotheses? You should understand what positive and negative controls are needed for interpretation of results. Understand the broad picture as well as the specifics.

You will be tested on your knowledge and research irrespective of what you ultimately intend to do (teaching, extension, research, other).

#### YEARLY POS MEETING

Each year, after the formation of your POS committee, you should set up a time to meet with the members of your POS committee. At least three committee members must be present. M.S. students are encouraged to meet yearly until the final defense; at least two committee members must be present. ***Students are required to give a research presentation at these meetings to facilitate discussion of research progress and feedback.***

## MANUSCRIPT REQUIREMENT

Before being awarded their degree, all graduate students majoring in Entomology must have submitted to the major professor one or more manuscripts for publication in scholarly journals based on their thesis or dissertation research.

## COMPLETION DEADLINES

Students approaching graduation should check appropriate deadlines. Applicable dates that apply for completion of your degree requirements and graduation can be found at: <http://www.grad-college.iastate.edu/deadline/deadlines.html>

## WRITING YOUR THESIS OR DISSERTATION

All students whose programs of study require a Thesis or Dissertation must comply with all Iowa State thesis requirements in order to graduate. Iowa State University requires all Theses and Dissertations to be electronically submitted. <http://www.grad-college.iastate.edu/thesis/homepage.html> A Signature Page should not be in your thesis! Thesis seminars are offered every semester to clarify Iowa State University's publishing requirements, submission procedures, and common problems for graduate theses and dissertations. Faculty and others involved in thesis preparation are also welcome to attend. <http://www.grad-college.iastate.edu/thesis/seminars.html>

Theses written for M.S. or Ph.D. degrees should be in the Journal Paper Format: [http://www.grad-college.iastate.edu/thesis/documents/Journal\\_Papers.pdf](http://www.grad-college.iastate.edu/thesis/documents/Journal_Papers.pdf), that is, they must include one or more papers designed for submission to a journal. Writing in Journal Paper Format will help you learn to write papers and, at the same time, shorten the time it takes for your thesis research to be published. If you are including research data from other students or researchers, follow the instructions in the ISU Thesis Manual describing co-authors roles in the research and/or preparation of the manuscript.

This checklist is what the Thesis Reviewers in the Graduate College will use to review a thesis after it has been submitted to ProQuest/UMI. <http://www.grad-college.iastate.edu/thesis/checklist.html>

## FINAL EXAMINATION

The Final Examination for the Ph.D. and M.S. degrees is an oral defense of the Ph.D. dissertation or M.S. thesis. All members of your POS committee must be present. This examination will review the dissertation or thesis and the candidate's knowledge of relevant subjects. You are required to give a formal seminar presentation of your research to the entomology faculty and students and other members of the Iowa State academic community (ENT600) some time prior to the final defense.

After the dissertation or thesis has been completed and all the other requirements have been met, you should fill out and submit to the Graduate College a "Request for Final Oral Examination". This form is available in administrative offices and at the Graduate College; it is not available on a web site. When the Graduate College receives this request they will

send a "Report of Final Examination" for reporting the examination result to your departmental secretary. The departmental secretary will provide the form to your major professor.

By midterm of the semester preceding the semester of graduation, you must submit to the Graduate College a diploma slip which shows the expected date of graduation, exact thesis or dissertation title and other data. If you do not graduate at the expected time, a new diploma slip must be submitted at a later time. Diploma slips are available by going to: <http://www.grad-college.iastate.edu/forms/forms.html> and clicking through to Application for Graduation (Diploma Slip).

## COMPLETED THESIS/DISSERTATION

*Entomology majors are required to submit a copy of their completed thesis or dissertation to the entomology department graduate secretary. This copy must be bound with a flat spine for filing purposes.*

## GRADUATION – LETTERS OF RECOMMENDATION

When you get to the point of needing letters of recommendation, make sure to give the faculty from whom you are requesting the letter: 1) plenty of advance warning, 2) a copy of the job/ad description, and 3) a copy of your C.V.

## ON GRADUATION

If you have completed an M.S. in entomology and wish to continue on to the Ph.D. program, you will need to re-apply to the program. If you would like to continue taking classes at ISU, you will need to apply for admission to another major, or apply for admission to a non-degree program through the Graduate College.

## EXIT INTERVIEWS

When you receive the "Graduate Student Approval Slip for Graduation" form from the Graduate College, schedule at least a 15 minute exit interview with the entomology chair. You will need the signature of the entomology chair on the Graduate Student Approval Slip.

## DISMISSAL CRITERIA

Continuing registration as a graduate student at Iowa State University is contingent on maintaining good standing in a graduate major. Entomology expects that students will complete their degrees in a satisfactory and timely manner. However, there are several situations that may require dismissal of a student.

### 1. Dismissal Criteria

A student may be dismissed, that is, removed from their degree program and not permitted to register as an entomology student, for the following reasons:

#### a) Failure to progress satisfactorily in his/her degree program

This may be evidenced by a lack of research progress, a lack of aptitude for entomology, or a failure to maintain a satisfactory academic standing, as defined by the Iowa State University Graduate College Handbook.

b) Lack of a major professor

Because graduate degrees in entomology at Iowa State are centered about a mentored research project, it is impossible to complete a degree without a research mentor [major professor]. To maintain good standing and earn a degree in entomology, a student must have an entomology faculty member serving as his or her major professor.

Occasionally, faculty who have previously agreed to serve as a major professor become unable or unwilling to serve. Faculty desiring to terminate their service as major professor may do so by notifying the student and the entomology chair in writing. A student who has lost his or her major professor has up to three months after the date the entomology chair is notified to identify another Entomology faculty member willing to serve. The entomology chair will help the student search for a new major professor, if the student desires.

c) Academic dishonesty

The proper conduct of science requires the highest standards of personal integrity. Because of this, dishonesty in the classroom or in the conduct of research is considered a serious offense by entomology and by the University. Students accused of academic dishonesty will be dealt with according to the procedures outlined in the University Catalog and the Faculty Handbook. Possible punishments can include dismissal from the program and expulsion from the University, depending on the severity of the offense.

## 2. Dismissal Procedures

A student's POS committee, or if the student has no POS committee, the student's major professor, can recommend the dismissal of a student for any of the reasons listed above. Recommendations for dismissal are made to the entomology chair.

Procedures for dismissal are as described in the Iowa State University Graduate College Handbook. Before a dismissal is decided, the entomology chair must give the student a written justification for why dismissal is being considered. The entomology chair must also discuss the situation with the student, as well as his or her POS committee, and major professor, in an attempt to find a satisfactory resolution. This discussion constitutes the "informal conference" as described in the Graduate College Handbook. If a satisfactory resolution cannot be reached and the chair decides to dismiss the student, either party may bring the issue to the attention of the Associate Dean of the Graduate College for a decision. The student may appeal the decision of the Associate Dean, as described in the Graduate College Handbook.

## 3. Responsibilities of Entomology and the major professor

It is the responsibility of entomology to counsel students who are having academic difficulties, or if students are unable to overcome these difficulties, to help the students identify and apply to other appropriate degree programs. It is the responsibility of the major professor and his/her department to seek funds for a student's assistantship and for the conduct of research.

#### 4. Relationship between Status in Entomology and Termination of Financial Support

Although students in entomology are normally supported on graduate assistantships, this is not a requirement for continued participation in entomology. Students not on assistantship will continue to have regular status in the major so long as they remain in good standing and are registered.

However, because assistantship support at Iowa State requires that a student be a member of a graduate program, dismissal from entomology requires that assistantship support be terminated.

Students with any doubt about their assistantship status should discuss their situation with their major professor, and the entomology chair. For further information on termination of assistantship appointments, see the Graduate College Handbook.

#### 5. Appeal Process

The University has established appeal processes for student grievances. These vary depending on the nature of the grievance, and are described in the Graduate Handbook. Generally, these procedures begin with the department chair. It is usually best for all parties if a satisfactory resolution can be reached without initiating a formal appeal process. The Associate Dean of the Graduate College is available to informally consult with students and faculty.

## FINANCIAL MATTERS

### YOUR APPOINTMENT

Almost all students in entomology receive some form of financial support. The source of the support, however, and the responsibilities associated with it, vary. Students entering entomology usually receive a research assistantship (RA) funded by grants and / or the entomology department. The responsibilities associated with your stipends depend on whether you have an RA or a teaching assistantship (TA). Information about these forms of support is available in the Graduate College Handbook. The stipend for PhD students in entomology increases by approximately \$1,000 on successful completion of the preliminary examination.

All graduate students on assistantships have signed a Graduate Assistantship Letter of Intent that lists the terms and conditions of their appointment. Generally, graduate assistantship appointments are on a "one-half time" basis. Appointments may be terminated by mutual consent or for cause as described in the Graduate College Handbook. If you have any questions regarding your appointment, see Kelly Kyle (110 Insectary or e-mail [kakyle@iastate.edu](mailto:kakyle@iastate.edu)).

Payday at the University is the last working day of each month. Your paycheck will be deposited directly into a bank of your choice. You will need to complete an authorization form available at the Human Resources Office for this. If applicable, deductions are made for Federal and State income taxes.

It is expected that MS students will complete their degrees within a period of 3 years, and PhD students within a period of 5 years. The major professor (not the student) is responsible for negotiating any extension of departmental funding beyond these time limits. Extension of a research assistantship under these circumstances is not guaranteed.

### GRANTS FOR RESEARCH

The Graduate and Professional Student Senate (GPSS) provides funds to support graduate student research. GPSS will provide up to a maximum of \$300 to each person submitting a research proposal. The projects for which you submit the proposals must be outside your thesis or dissertation requirements. "Request for Professional Advancement Grant" form is available on the web by going through <http://www.grad-college.iastate.edu/forms/forms.html> and clicking on Professional Advancement Grant (PAG).

### ENTOMOLOGY GRANTS FOR RESEARCH: RICHARDSON RESEARCH GRANTS

The purpose of the Henry and Sylvia Richardson Research Incentive Grant is to encourage research experiences beyond those available in the student's degree program. Research in a lab other than that of the major professor on a project that complements the student's degree program is particularly encouraged. Proposals to fund research beyond the student's degree program will be favored, but this criterion is not necessary for submission. The form of the award will be department operational support for the student's research. One

award of \$2,500 accompanied by a plaque, is available each year. All graduate students majoring in Entomology who have not yet completed their degree research, and who will remain as resident graduate students for the duration of the award are eligible to apply. A student may only receive the award once unless they enroll for a second degree at ISU.

The research proposals should be almost entirely a product of the individual student (i.e. not that of a faculty, committee or graduate advisor). Applications should adhere to the following format:

a. Title page:

- Title
- Full name
- School address and telephone
- Major department
- Last degree awarded and date
- Present degree objective
- Signature of contestant
- Signature of major professor.

b. Abstract (not to exceed 250 words).

c. Statement of significance of research and how the research complements the student's degree program

d. Introduction including review of relevant literature

e. Objectives (general and specific)

f. Methods

g. Literature cited (not more than 15 references)

h. Budget and Justification (not to exceed 1 page)

i. CV (not to exceed 2 pages)

Sections b-g should not exceed 6 pages (double spaced). All pages should be numbered.

Submit 1 copy and the full proposal as an e-mail attachment to the Chair of the Student Awards and Scholarships Committee by February 15. The award will be announced no later than March 15. A three-member committee of faculty outside the department will be appointed to review proposals. Criteria for evaluation will include experimental design, originality, feasibility, significance and clarity.

## GRANTS FOR PROFESSIONAL TRAVEL

Attendance and presentation of research results at professional meetings is an essential part of your training. All students should, if possible, attend at least one regional, national or international meeting during their degree program.

### *Biosystematics Travel Fund*

To apply for funding from the Biosystematics Travel Fund, applicants must write a letter to the current department chair describing the proposed travel, research objectives, and budget, including contributions from other sources.

## PAGs

Funds for Professional Advancement Grants (PAGs) are provided to graduate and professional students by the Graduate College and the Graduate and Professional Student Senate (GPSS) to help defray expenses related to travel to professional meetings.

<http://www.grad-college.iastate.edu/gpss/PAG/index.html>

### Travel PAGs

Travel PAGs may be granted to students who attend a professional meeting, defined as a gathering of an organized society of professionals for the purpose of presenting research. Travel PAGs may also be approved for attending professional workshops that provide hands-on experiences not available at Iowa State University (ISU). Travel PAGs will **not** provide funding for required academic activities as defined in [GSS Bill 93-06](#), including workshops, classes, or other events required for fulfillment of a student's degree requirements or program of study. Travel PAGs are divided into two categories depending on the student's involvement at the meeting: Presenters and Non-Presenters (attending only). To qualify for a Presenting Travel PAG, the student must present results of research performed at ISU at the professional meeting. These categories are described in detail in [GPSS Bill S07-01](#).

**Eligibility:** Any ISU graduate or professional student who is currently enrolled as a full-time student, who is not classified under "continuous registration" as defined in [GSS Bill 95-05](#), may apply for a Travel PAG. Travel PAGs will not be awarded until the student has registered for classes in the semester they are traveling. Each ISU graduate and professional student is eligible to receive one Travel PAG per fiscal year. The fiscal year extends from July 1 until June 30. There are no exceptions to this rule.

**Travel PAG Financial Support and Funding Availability:** Both the Graduate College and GPSS contribute money to Travel PAGs. Travel PAG applications are first reviewed for funding by the Graduate College and are then considered by the GPSS PAG Chairperson. The Graduate College awards \$100 to students who are presenting and \$50 to students who are not presenting (see Vet Med exception). Graduate College funding decisions neither ensure nor preclude GPSS support. Veterinary Medicine students who are not concurrently enrolled as graduate students are only eligible for funding from GPSS.

**Timeline for Travel PAGs:** Travel PAG funds will be divided accordingly to the following strategy: 50% Spring, 25% Fall, and 25% Summer. Requests for Travel PAGs can sometimes exceed available funds, so students should apply as early as possible, preferably 8-10 weeks prior to departure. Applications must be submitted to the Graduate College no later than 2 weeks prior to departure. *Without exception*, those applications submitted late will not be considered for funding. In no case will applications received after the departure date of a conference will be approved.

Incomplete applications will be denied. No appeals will be accepted.

If you have already received a grant for the current fiscal year, you may still apply during that year for travel that will occur during the following fiscal year.

**Note: Forms required for travel:** When you plan to travel to an out of state meeting, you need to enter the information in AccessPlus to receive travel authorization, even if you do not expect reimbursement. Contact Kelly Kyle or your major professor if you have questions about the procedure.

**Note: VERY IMPORTANT—This can cost you money!** If you pay for your own airline ticket, ISU may NOT reimburse you. If you find a good deal for an airline ticket you need to have it pre-approved by the University purchasing system FIRST before you purchase the ticket. You can order your airline ticket using the University System; contact Kelly Kyle for information on how to proceed.

Reimbursement and Receipts: Reimbursements must be completed within 3 months from the last date of travel or by the date provided on your approved [PAG application](#), whichever comes first. Reimbursements received after the deadline will be denied. Reimbursements will only be approved for actual expenses incurred. Prepayments for travel are not allowed. It is the awardee's responsibility to approve their travel reimbursement through [AccessPlus](#) by the 3-month deadline.

### *International travel grants from the College of Agriculture*

The following information can be found at:

[http://www.ag.iastate.edu/global/isu\\_funding\\_03.htm](http://www.ag.iastate.edu/global/isu_funding_03.htm)

#### **Global Funding for Graduate Students & Postdocs**

##### *Purpose*

The purpose of this program is to provide support for international agricultural research and education opportunities for graduate students and postdoctoral fellows. Awardees may utilize these funds to partially fund the cost of participating in research abroad (including laboratory attachments, collection of research materials, etc.), teaching or enrolling in short courses, workshops or regular courses at institutions abroad, or other activities abroad that are directly related to professional development in the awardee's field. Participation in an international conference is an acceptable activity but should be combined with other professional development activities while abroad to take maximum advantage of the international travel. Applications for travel to a country in which the applicant has already spent substantial periods of time will receive a lower ranking.

##### *Eligible Applicants*

Students enrolled full-time in graduate programs and postdoctoral fellows with appointments in the College of Agriculture are eligible to apply.

##### *Awards*

It is anticipated that 10 -15 grants will be awarded. Grants will not exceed \$600, must be spent by June 30, and may only be used to defray international travel costs. A minimum stay of 10 days engaged in professional activities in a foreign country is required. Grants may not be used to pay salaries or purchase equipment.

For Application Procedures, see: [http://www.ag.iastate.edu/global/isu\\_funding\\_03.htm](http://www.ag.iastate.edu/global/isu_funding_03.htm)

## BENEFITS

### *Group Hospital, Surgical, and Medical Insurance:*

<http://www.hrs.iastate.edu/sship/homepage.html>

Single student coverage under the ISU Student and Scholar Health Insurance Program is provided *free of charge* to all graduate assistants at ISU. For new to ISU students, an ISU

Insurance Program booklet should be mailed to you through campus mail as soon as you are entered on the payroll system. Students enroll for Health Insurance going on line to ACCESS PLUS <https://accessplus.iastate.edu/frontdoor/login.jsp>, clicking on the Student Tab and clicking through on Health Insurance and following the instructions provided for registration.

Newly employed personnel should not drop any other insurance they may have until they know the beginning date of the ISU insurance. The Student and Scholar Health Insurance Program is available for the spouse/domestic partner of students and the children of students. For details and enrollment cutoff dates on the ISU Student and Scholar Health Insurance Program, please contact the student insurance representative (515-294-4820).

All international students, whether on assistantship or not, are required to carry the ISU Student Health Insurance or to be covered by another health insurance policy. For more information, contact the International Education Services (IES) in 252 Memorial Union (294-1120).

#### *Prescription Drug Benefit Program*

Graduate students on assistantship receive single coverage free of charge in a prescription drug benefit program that reduces the cost of generic and prescription drugs available at the Student Health Center Pharmacy. Information on this benefit can be found at: <http://www.hrs.iastate.edu/sship/docs/PharmacyGradAssistsPostDocs.pdf>

#### *Health Service*

As a student, you are eligible to use the ISU Student Health Service. Thielen Student Health Center is a complete outpatient medical clinic located west of Beyer Hall. The health fee covers consultations with medical staff and subsidizes charges for services, such as laboratory tests, immunizations, x-rays, and pharmaceuticals. A range of services is offered, including medical exams (physicals), women's health care, sports medicine, physical therapy, STD testing and treatment, travel immunizations, and a full-service pharmacy. Specialty services offered at a reduced rate include psychiatry, orthopedics, and ear, nose and throat. A *mandatory* Student Health fee (2006-07 school year) of \$89.00 and an \$8.00 Health Facility fee per semester is assessed to all students registered for five or more credits (\$44.50 and \$4.00 for summer session). This health fee pays for some services offered at the Student Health Center. The health facility fee goes towards the payment of the building of the new Student Health Center. For students enrolled for under five credits, the health fee is optional. The Thielen Student Health Center is located at Sheldon and Union Drive on the northwest side of campus. <http://www.public.iastate.edu/~health/homepage.html>

Additional information on the student group plan medical insurance and the benefits of the mandatory health fee may be obtained at:

<http://www.grad-college.iastate.edu/finance/healthinsurance.html>

Dental Insurance is available for a fee:

<http://www.grad-college.iastate.edu/finance/healthinsurance.html>

### *Vacation and Sick Leave*

**Research assistants** with half-time appointments (C base) earn vacation at a rate of eight hours per month. Because you are half-time, this is equivalent to two calendar days. You can take vacation with the approval of your academic advisor and by notifying your departmental secretary. Accumulated vacation time is forfeited upon completion of your appointment. (See your Graduate College Handbook for detailed information.)

To obtain approval for vacation time you need to fill out an Absence Request card. Absence Requests will be handled by Kelly Kyle. Students on assistantships are employees of ISU and therefore are allowed off on university holidays with subsequent absences to be taken as vacation.

**Teaching assistants** are subject to the academic calendar and do not accumulate vacation time. However, they are not required by the University to work when classes are not in session. Graduate assistants on teaching assistantships should, nevertheless, get permission from their major professor before taking a vacation from their research responsibilities.

Graduate assistants of any type on half-time appointments accumulate six hours of sick leave per month. Since you are on a half-time appointment, this is equivalent to one-and-a-half calendar days. If you will be absent because of an illness, you should call your advisor or major professor as soon as possible on the day you are sick and must be absent. On your return, you will need to fill out an Absence Request form for sick leave. You should also use the form in advance when you have a planned absence for medical reasons. Maternity/Paternity leave can be taken as sick leave and/ or vacation. Accumulated sick leave is forfeited upon completion of your appointment.

### *Injuries and Injury Reports*

If you are injured while performing your duties as a Graduate Assistant, you must stop by the office of the department and fill out a Student's Report of Injury: <http://www.ats.iastate.edu/forms/uniform/stuacc.doc> as soon as you are able to do so. As a rule, the University's Worker's Compensation insurance carrier will pay for your medical care.

### *Student Counseling*

Student Counseling Service (SCS) provides a wide range of services to help students gain the most from their college experience. SCS offers career counseling, personal counseling, group counseling, and workshops. Most services provided by SCS are short-term in nature, and SCS can assist students needing long-term assistance with referrals to community services.

Some of the typical issues SCS assists students with include career decision-making, coping with relationship problems, low self esteem, stress, loneliness, depression, cultural differences, sexual assault recovery, trauma, childhood abuse, conflicts over sexuality, substance abuse, eating disorders, academic motivation, and other concerns. Other services include the Substance Abuse Prevention Program, Career Resource Center, Learning

Disabilities Screening, Placement Testing, and consultation and outreach wervices. SCS also provides consultation and training to faculty and staff to assist them in addressing the psychological needs of students.

A list of the current semester's groups and workshops is available:  
<http://www.iastate.edu/~stdtcouns/>

*Recreation Services Office:* [www.recservices.iastate.edu](http://www.recservices.iastate.edu)

*Legal Assistance:* [www.dso.iastate.edu/sls](http://www.dso.iastate.edu/sls)

*Student Organizations:* [www.sac.iastate.edu](http://www.sac.iastate.edu)

An Excellent Source of Information for all things graduate student—the Iowa State University Graduate Orientation Handbook: <http://www.grad-college.iastate.edu/gpss/>  
Look at "Orientation Handbook" link on the left menu.

## ADMINISTRATIVE MATTERS

### ADMINISTRATIVE ASSISTANCE

There are a number of offices on campus to help with the administration of your graduate program. The main one for entomology students is the entomology office. This office is managed by Kelly Kyle. Kelly can provide expert help with questions about all administrative procedures. Academic advice about courses will be provided by your major professor. (See "ACADEMIC MATTERS").

Kelly Kyle  
 Department of Entomology  
 110 Insectary  
 ☎ 515-294-7400  
 FAX 515-294-7406  
 E-mail: kakyle@iastate.edu

The entomology office is open 8 am to 5 pm Monday through Friday, and 7.30 to 4 pm during the summer. However Kelly may not be in the office the entire time.

### OFFICE AND HOME ADDRESSES

The entomology department needs to know your local address and telephone number and also needs to be informed of any changes in your address or phone number that may occur during your tenure in the program.

### COMMUNICATIONS

It is vital that you maintain good contact with entomology personnel throughout your graduate program. There are a number of ways to do this:

*E-mail.* E-mail should be checked daily during the work-week as this is the **primary means** of keeping entomology students informed about program activities.

The following e-mail addresses may be used to reach different groups of people within the department:

<a href="mailto:entgrads@iastate.edu">entgrads@iastate.edu</a>	(all graduate students)
<a href="mailto:entfaculty@iastate.edu">entfaculty@iastate.edu</a>	(all faculty members)
<a href="mailto:entpostdocs@iastate.edu">entpostdocs@iastate.edu</a>	(all postdoctoral researchers)
<a href="mailto:entstaff@iastate.edu">entstaff@iastate.edu</a>	(all staff)
<a href="mailto:entuqs@iastate.edu">entuqs@iastate.edu</a>	(all undergraduate students)
<a href="mailto:entall@iastate.edu">entall@iastate.edu</a>	(all personnel in Entomology)

*Mail Service.* You will be assigned a mailbox in the building that houses your lab. You should check for mail on a regular basis. The university mail service should *not* be used for personal mail.

*Telephone.* Local calls (phone numbers in Ames) may be made on most campus phones. Long distance calls must **not** be made on University phones without the prior approval of the person to whom the phone is assigned.

Internet homepage for entomology: <http://www.ent.iastate.edu>

*A significant amount of information that you may need is available on the web. Please check the web site first before asking Kelly.*

### *Department News*

The Entomology department issues a tri-annual newsletter providing information on academic activities within the department and an annual flier on "Who's doing what research in Entomology". Students also receive a copy of the annual Alumni newsletter. These documents are also available on the web.

### TRANSPORTATION:

Bicycles. ISU bicycling regulations are posted on the ISU Department of Public Safety site ([http://www.dps.iastate.edu/wordpress/?page\\_id=115](http://www.dps.iastate.edu/wordpress/?page_id=115)). You can park your bicycle at many locations on campus. Except for walks labeled as bike paths, bicycle riders must not use campus sidewalks. A bicycle used between sundown and sunrise must be equipped with a headlight, tail lights or an adequate reflector, and a warning device. All bicycles on the ISU campus must be registered. The City of Ames also recommends bicycle owners in the community to register their bikes. By registering your bicycle, you will help deter bike thefts and assist in returning recovered, stolen or lost bicycles to their owners. ISU and the City of Ames bicycle registration program is simple, free of charge and never expires. On-line registration is at [http://www.dps.iastate.edu/wordpress/?page\\_id=88](http://www.dps.iastate.edu/wordpress/?page_id=88)

Buses. The city of Ames has an excellent bus system called CyRide. During the school year the buses leave from most locations every 20 minutes. If you show a current, paid University fee card, you can ride for free. <http://www.cyride.com/>

Cars and Parking. A copy of the ISU Traffic and Parking Regulations can be obtained from Public Safety, Parking Division, 27 Armory. Consult the section covering students. <http://www.dps.iastate.edu/parking/>

### HELP IN PREPARING MATERIAL FOR RESEARCH PRESENTATIONS

The Instructional Technology Center office on campus provides services relating to visual and audio media. For example, slide projectors and video-tape players can be taken out on loan by departments. Although most of the equipment used in 1200 Communications Building is free to students, you will need to pay for some things, such as printed lettering. See <http://www.it.iastate.edu/>

### COMPUTER SHORT COURSES

Academic Information Technologies (AIT) offers Short Courses on the use of computers to prepare slides (Sapphire Film Recorder), computer to video tapes, and using a program to write your thesis (LaTeX), as well as beginning and advanced courses on the use of Project Vincent, Virtual Tour of Gopherspace, World Wide Web, and Microsoft Word for Windows and Macintosh. The Solution Center, 195 Durham (296-6000, email: [solution@iastate.edu](mailto:solution@iastate.edu)) can assist with questions regarding short course registration,

computers, software or the network. You can take the short courses without paying a fee because you have already paid a student computing fee. The *Computation Center Newsletter* is free if requested and can be sent to your campus mailing address. Computer Survival School courses can be found at: <http://www.it.iastate.edu/training/css>

#### DEPARTMENT OF PUBLIC SAFETY

<http://www.dps.iastate.edu/wordpress/> We at the Department of Public Safety (DPS) strive to help make your experiences at Iowa State enjoyable and productive. The DPS mission is to ensure the campus remains a safe place to live, learn, and work. The Police Division is the university's official law enforcement agency and employs 33 state-certified, sworn peace officers to respond to calls for service 24 hours a day. Officers are assisted by a compliment of state-certified dispatchers and civilian support staff. Community service and student officers are trained to provide safety escorts, unlock vehicles, conduct building security patrols, and assist with special events. If you witness any suspicious activity, please call the department immediately at (515) 294-4428; in the event of an emergency, dial 9-1-1.

## GRADUATE STUDENT INFORMATION

### THE GRADUATE AND PROFESSIONAL STUDENT SENATE

Information on the Graduate and Professional Student Senate, G44 Memorial Union, is located at: <http://www.grad-college.iastate.edu/gpss/>. The Entomology Department has a student elected representative on this council.

### PROFESSIONAL ETHICS

During orientation activities in August, you will be introduced to the concepts of ethical behavior and good practice in science. Included will be a discussion of proper research methods, ways to avoid self-deception in the practice of science and scientific misconduct.

It is imperative that you understand the ethical standards of science and conduct your scholarly activities accordingly. Scientists who commit unethical acts, whether from carelessness, ignorance, or malice, quickly lose the respect of the scientific community and/or are prevented from practicing science. Scientific misconduct includes such activities as: falsification of data, fabrication, deceptively selective reporting, purposeful omission of conflicting data with the intent to falsify results, plagiarism, representation of another's work as one's own, misappropriation of the ideas of others, the unauthorized use of privileged information, misappropriation of funds or resources for personal gain, and falsification of one's credentials. At ISU, these acts are taken very seriously and constitute "academic misconduct" (see ISU Graduate College Handbook). Individuals found guilty of academic misconduct may suffer a variety of penalties, up to and including expulsion from the university.

Occasionally, you may be faced with situations in which you are tempted to act in a manner you think might be unethical. If this occurs, we recommend discussing the situation with your major professor, or another professor whom you trust, to determine whether the actions you are considering are unethical. He or she should be able to suggest alternative actions that will be free of ethical questions.

Unfortunately, not all people understand or care about ethical issues and, at sometime in your career, you may be witness to an act you believe to be unethical. When the individuals committing the presumed unethical acts are members of your own laboratory, or worse yet, individuals with power over you, such as your major professor, the situation can be very awkward and you must proceed cautiously. You will find yourself torn between a fear of retribution and a desire to stop the unethical behavior before it hurts you and other members of your laboratory.

If you believe that unethical behavior is going on in your laboratory, we recommend that you first attempt to discuss the situation informally with the person whom you think might be behaving unethically. Sometimes friendly questions will resolve the problem, such as "This data looks almost perfect; how did you do this experiment?" or "Are you sure that you can omit that data point? Won't that prejudice your interpretation?" or, "This paragraph doesn't sound like your writing; are you sure you didn't unintentionally copy some of this?" If you feel uncomfortable in this approach, or if you have tried this approach and it didn't resolve the problem, we recommend that you discuss the situation informally with a professor whom you

trust. You may also go directly to the chair of entomology. All discussions with the chair will be confidential. You may also go directly to Associate Vice Provost for Research who is responsible for investigating charges of academic misconduct on campus. No matter what you chose to do, you should take great care to ensure the rights of the individual whose actions you are questioning. Frivolous accusations of misconduct and vicious spreading of rumors are just as unethical as fabrication of data or plagiarism.

## PROFESSIONAL DEVELOPMENT

During the course of your degree program, you will be required to maintain a laboratory notebook, present your research data in the form of a poster or as a seminar, and write at least one manuscript for publication in a scientific journal. Following is information for each of these activities, and resources for additional information.

### **Standard Operating Procedure for Maintaining a Laboratory Notebook**

Every graduate student within the department is required to maintain a laboratory notebook to keep a dated record of experimental procedures, results, analyses and conclusions. Ideally, entries should be made directly into the notebook to avoid loss of key information on miscellaneous scraps of paper

*Your laboratory notebook is a legal document.*

When we contact the Office of Intellectual Property and Technology about one of our inventions, the first question we have to answer is: where is this work written down? Which lab notebook? No kidding, if your project works, it is entirely possible that it is worth a great deal. But a patent, when it is filed, will be filed on the basis of the work you have written down in your notebook. They want page numbers, and they want pages in real notebooks with the dates written on the pages. When the patent lawyers show up, they are going to ask to see your notebook. If the description of the experiments is clear, and the results well documented, we are doing well. These pages should be dated because someone else may be doing the same thing too and dating their pages earlier than ours. Notebooks are cheap, don't worry about the writing space.

*Your laboratory notebook must remain in the laboratory.*

Because your notebook is a legal document, it is also the property of the University. This sets some real constraints on both you and the university. The notebook has to stay within the laboratory, or at least within the university. It will be stored at the university for at least 5 years after you have left. If you need to take notes in the greenhouse, take your notebook. If you are doing experiments in another laboratory, take your notebook. But when you move on, as we all do at some point, the notebook has to stay in the lab. You are welcome to photocopy all of the note book, take pictures, scan documents, do what ever it takes, to make sure that you have all of your notes for the next projects you undertake somewhere else. But the original notebook has to stay in the lab.

*When things suddenly go horribly wrong.*

It does, that's just part of life. The guy working next to you at the bench is a really great guy. Fun at parties, cute, smarter than all get out. Let's call him Ralph. So Ralph shines at all occasions. That doesn't bother you at first, but then slowly you realize that Ralph shines even when his experiments for the week seemed to go no where. You are suspicious, maybe you tell your advisor, maybe you don't. Don't worry, it is a matter of time. This squad from the dean's office will show up and start asking Ralph for his notebooks. Yep, they do that. Picture Melt-down from that point onwards. The only way you can stay out of any involvement with

that is by having really clean notebooks. This sounds like fantasy to many of you at this point, but everyone who has been in this business long enough has seen it happen.

### *Authorship*

In every lab there often arises the issue of authorship. Who should go on the paper? In what order? One of the deciding factors of authorship concerns the notebook. If you have a notebook full of pivotal experiments, you are definitely an author. If you want authorship based on chats over coffee and ideas suggested at lab meeting, with no lab note book pages devoted to any of the work, it will be a different matter entirely. That isn't to say you won't be an author, but don't be surprised if you are not the first one.

### **Ownership of Intellectual Property and Data**

ISU subscribes to the general principle that the intellectual property created by a student is generally owned by that student. However, student work often owes much to faculty initiative. In addition, the provisions of sponsored research grants funding research appointments may affect the ownership of intellectual property derived from work on grants. Students must be aware of these restrictions on ownership of intellectual property as provided by university policies on patents and copyrights. Graduate students will be given a fair opportunity to use data resulting from sponsored research grants; however, that opportunity is subject to the university's obligations with respect to those grants. The university has a general obligation to publish the results of scientific investigation. Consequently, the student's right to control data collected under sponsorship is not exclusive. If you wish to continue your research at another location, materials or other university resources may only be transferred with the permission of your major professor and may require completion of a Materials Transfer Agreement.

### **Poster Preparation**

The easiest way to construct a poster these days is by using Powerpoint.

1. Start new presentation and under page set-up choose "custom slide". The slide cannot be higher than 38 inches (this is the width of the printer) but the poster can be any length. A typical size is 38 x 56 inches.
2. High quality figures can be inserted as Microsoft Excel items and tables can be inserted as Microsoft Word items.
3. The printer produces a high-resolution output and therefore any photographs used on the poster should be of high quality.
4. The poster should be printed on high quality paper. This only adds a couple of dollars to the overall cost, but makes laminating the final version easier.
5. *Poster Printing:*

(1) Posters can be printed and laminated in the Graphics lab, Room 132 on the first floor of the Technical and Administrative Services Building (TASF). Cost for a 38 × 56 inch poster is \$125 (\$2.25 per inch) and requires an intramural purchase order (white and yellow copies. Forward pink copy to department). Contact Dennis Sailsbury (4-7933; sailsbury@ameslab.gov). You can send the poster as an e-mail attachment, and collect the poster a couple of days later. Enter TASF on the lower level.

(2) Posters can also be printed in N031 Lagomarcino Hall at the Center for Technology in Learning and Teaching, at much less expense (\$12 for 3 x 4 ft poster, or \$24 if it is laminated). You must take (i) your university ID, (ii) your presentation (PC format only) on a memory stick, with you. You will print the poster yourself with assistance from student

employees. You can specify a width of 2 or 3 feet, and can have the poster laminated (Note: Let the laminator warm up for at least 45 minutes before you run your poster inside its sleeve through the rollers). The downside is that payment is BY CASH ONLY. Ask for an ISU Sales Ticket Receipt if you want to arrange for department reimbursement. Also, the larger size posters do not roll well if you are planning to transport them in a poster tube.

(3) Baker lab costs and instructions are as per their web site

[http://www.agron.iastate.edu/service\\_labs/bakerlab/posters.aspx](http://www.agron.iastate.edu/service_labs/bakerlab/posters.aspx)

For further information on poster preparation see:

Science Forum: Today's Solution to all your Scientific Poster Development, Production and Delivery Needs! <http://www.scifor.com/Guidelines.htm> The Scientists Guide to data presentation, 1998 <http://svl.la.asu.edu/ubep99/PDFfiles/posters.pdf>

### **Seminars**

All graduate students majoring in Entomology are required to enroll in ENT600 and present their research results as part of the departmental seminar series. Guidelines for preparation and presentation of your seminar will be provided as part of the Ent600 course. Information is also available on the web. (E.g. Google "seminar preparation").

### **Manuscripts**

All graduate students majoring in Entomology are required to submit one or more manuscripts for publication in scholarly journals to their major professor, prior to graduation. Following are some useful resources to assist you in this endeavor:

Guidelines for Writing a Scientific Paper

<http://www.sci.sdsu.edu/~smaloy/MicrobialGenetics/topics/scientific-writing.pdf>

Writing a scientific research article

<http://www.columbia.edu/cu/biology/ug/research/paper.html>

### **Other Resources**

Victoria E. McMillan, Writing Papers in the Biological Sciences, Bedford Books, Boston, 1997  
Robert S. Day, How to Write and Publish a Scientific Paper, 5th edition, Oryx Press, Phoenix, 1998.

William Strunk, Jr. and E. B. White, The Elements of Style, 3rd ed. Macmillan, New York, 1987.

McMillan, V 1988. Writing Papers in the Biological Sciences. Bedford Books, NY.

### **DISCRIMINATION AND HARASSMENT POLICY**

Complete information can be found at: <http://policy.iastate.edu/policy/discrimination/>

Selections from Iowa State University Discrimination and Harassment Policy follow:

Iowa State University prohibits discrimination, which can include disparate treatment directed toward an individual or group of individuals based on race, ethnicity, sex, pregnancy, color, religion, national origin, physical or mental disability, age (40 and over), marital status, sexual orientation (including gender identity), status as a U.S Veteran (disabled, Vietnam, or other), or other protected class, that adversely affects their employment or education.

Iowa State University also prohibits harassment, which can be a form of discrimination if it is unwelcome and is sufficiently severe or pervasive so as to substantially interfere with a

person's work or education. Harassment may include, but is not limited to, threats, physical contact or violence, pranks, jokes, epithets, derogatory comments, vandalism, or verbal, graphic, or written conduct directed at an individual or individuals because of their race, ethnicity, sex, pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation (including gender identity), or U.S. veteran status. Even if actions are not directed at specific persons, a hostile environment may be created when the conduct is sufficiently severe, pervasive or persistent so as to unreasonably interfere with or limit the ability of an individual to work, study, or otherwise to participate in activities of the University.

It is the University's goal to prevent the occurrence of discriminatory and harassing activity and to promptly stop such conduct. While grounded in state and federal non-discrimination laws, this policy may cover those activities which, although not severe, persistent, or pervasive enough to meet the legal definition of harassment, are inappropriate and unjustified in an educational or work environment. This policy will be interpreted so as to avoid infringement upon First Amendment rights of free speech. The University must be mindful of the tradition of academic freedom that includes the free exchange of ideas inherent in an academic community. A determination as to whether discrimination or harassment has occurred will be based upon the context in which the alleged conduct occurs.

### Complaint Resolution

In an effort to prevent or stop discriminatory or harassing behavior, the University has adopted specific avenues through which an individual can make his or her complaint known. With issues of discrimination and harassment, it is important to identify and remedy the situation as soon as possible. For this reason, the University has adopted two complaint resolution mechanisms for discrimination and harassment concerns - informal and formal resolution. Claims of discrimination and harassment must be brought either as an informal complaint or a formal complaint to ensure that appropriate action can be taken right away. An informal complaint may, but need not be made before filing a formal complaint; however, once a formal complaint has reached resolution, the same complaint cannot be brought as an informal complaint.

To best remedy a situation, complainants are urged to promptly share concerns or complaints rather than risking their well being or negatively affecting the University's ability to investigate their case due to the passage of time and potential departure of witnesses. If a formal complaint contains incomplete information, the Office of Equal Opportunity and Diversity will promptly seek to gather the needed information from the complainant. In the event that such information is not furnished to the Office of Equal Opportunity and Diversity within 30 days from the date of the request, the case may be closed. Consistent with federal regulations governing the filing of complaints, the Office of Equal Opportunity and Diversity may decline to investigate claims in which none of the alleged discrimination or harassing action occurred within the preceding 300 days.

Any employee, student, visitor, applicant, or program participant of Iowa State University may file a complaint alleging discrimination or harassment in violation of the University's policy prohibiting such conduct. In most cases, complaints against affiliates or contractors of Iowa State University must first proceed through the affiliate or contractor before Iowa State University may intervene. Information about the University's policy and resolution procedures may be found in several offices, including the Dean of Students Office, the Student Counseling Service, the Women's Center, the Employee Assistance Program, and the Office of Equal Opportunity and Diversity. As described at the above web site, the

University has designated and trained certain individuals, called Sexual Harassment Assistors, to assist a potentially injured person in deciding if and how to proceed and in carrying out that decision.

## DIVERSITY AT IOWA STATE UNIVERSITY

The Office of Equal Opportunity and Diversity (EOD) is located at 3210 Beardshear Hall. <http://www.hrs.iastate.edu/diversity/>

ISU defines diversity as that quality of its physical, social, cultural and intellectual environment which embraces the rich differences within the multiplicity of human expression and characteristics including age, culture, ethnicity, gender identification and presentation, language and linguistic ability, physical ability and quality, race, religion, sexual orientation, and socioeconomic status. "In order for affirmative action or diversity to work, there has to be an environment that welcomes it, not just tolerates it", Carla R. Espinoza, Associate Vice President, Human Resources Services, Director, Equal Opportunity & Diversity, January, 2006.

On-line training for courses such as Diversity, Harassment and Discrimination and Drug Free Workplace are now available through ACCESS PLUS.

"Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, gender identity, sex, marital status, disability, or status as a U.S. veteran. Inquiries can be directed to the Director of Equal Opportunity and Diversity, 3210 Beardshear Hall, (515) 294-7612."

## FELLOWSHIP OPPORTUNITIES

Graduate students are strongly encouraged to look into securing their own funding. This process provides good experience in grant writing, and will provide you with a *competitive advantage* when you come to apply for positions later on. Here are a few fellowship opportunities that you might consider.

**Graduate Research Fellowship Program (GRFP)** Brief overview is below; please go to the website for complete details. <https://www.fastlane.nsf.gov/grfp/>

Synopsis of Program: The National Science Foundation aims to ensure the vitality of the human resource base of science, technology, engineering, and mathematics in the United States and to reinforce its diversity by offering approximately 1,000 graduate fellowships in this competition. The Graduate Research Fellowship provides three years of support for graduate study leading to research-based master's or doctoral degrees and is intended for students who are at the early stages of their graduate study. The Graduate Research Fellowship Program (GRFP) invests in graduate education for a cadre of diverse individuals who demonstrate their potential to successfully complete graduate degree programs in disciplines relevant to the mission of the National Science Foundation.

The three eligibility requirements for the Graduate Research Fellowship Program -- citizenship, degree requirements, and field of study -- are described. Applicants are advised to read the entire program solicitation carefully to be sure that the requirements are interpreted properly. Applicants must exercise judgment in assessing eligibility. Applicants

must be United States citizens or nationals, or permanent resident aliens of the United States. Fellowships are intended for individuals in the early stages of their graduate study. Applicants must have completed no more than twelve months of full-time graduate study at the time of their application. Fellowships are awarded for graduate study leading to research-based Master's or doctoral degrees in the fields of science, technology, engineering, and mathematics supported by the National Science Foundation (See NSF-Supported Fields of Study). The NSF welcomes applications for interdisciplinary programs of study and research.

### **NIH Minority Fellowship**

<http://grants1.nih.gov/grants/guide/pa-files/PA-00-069.html>

The National Research Service Award Predoctoral Fellowship for Minority Students will provide up to five years of support for research training leading to the Ph.D. or equivalent research degree; the combined M.D./Ph.D. degree; or other combined professional degree and research doctoral degree in the biomedical, behavioral sciences, or health services research. These fellowships are designed to enhance the racial and ethnic diversity of the biomedical, behavioral, and health services research labor force in the United States. Accordingly, academic institutions are encouraged to identify and recruit students from underrepresented racial and ethnic groups who can apply for this fellowship. Support is NOT available for individuals enrolled in medical or other professional schools UNLESS they are also enrolled in a combined professional doctorate/Ph.D. degree program in biomedical, behavioral, or health services research.

### **Department of Homeland Security (DHS) Scholarship and Fellowship Program Graduate Fellowships:** <http://www.orau.gov/dhsed/Grad2006.htm>

US Citizens. You must be pursuing a doctoral or master's degree with a thesis requirement in the physical sciences, mathematical sciences, computer and information sciences, life sciences, social sciences, psychology, selected humanities, or engineering. If you are enrolled in the first year of a PhD program as of the application deadline, and prior to fall 2006 you had completed no more than two graduate courses since completion of a bachelor's degree, you are eligible.

**GEM:** <http://www.gemfellowship.org/> Graduate Fellowships for Minority Students

The mission of The National GEM Consortium is to enhance the value of the nation's human capital by increasing the participation of underrepresented groups (African Americans, American Indians, and Hispanic Americans) at the master's and doctoral levels in engineering and science. We prepare technical leaders for advanced careers in industry, academia, and government agencies by identifying and selecting highly qualified GEM Fellows to complete a program of graduate study and internships. Through our university and employer members, and other [strategic partners](#), GEM develops funding to award fellowships and builds mentor networks to support Fellows in achieving academic and professional success.

On-Line availability of funding resources:

[www.vpresearch.iastate.edu/funding/homepage.html](http://www.vpresearch.iastate.edu/funding/homepage.html)

The office of Sponsored Programs (OSP) located at 1138 Pearson Hall (294-5225) assists students seeking fellowships and research funding from sources outside the university (state, federal, and private agencies). OSP maintains a library of directories and other materials on fellowships and grants and publishes listings of funding opportunities in each edition of the University Newsletter.

## APPENDIX I

**ENTOMOLOGY GRADUATE STUDENT ORGANIZATION (EGSO)**

The members of the EGSO would like to cordially invite you to join our organization. This is an organization formed and governed by graduate students in the department of entomology. The purpose of this organization is: 1) to formally voice the interests and concerns of the graduate students in the department of entomology, 2) to promote the professional development and educational enhancement of graduate students in the department through formal and informal seminars, meetings, discussions, and dissemination of literature, and 3) to serve as a peer group for information for incoming and currently enrolled graduate students with respect to academic and non-academic requirements.

In addition to these three objectives, the EGSO also functions as a vehicle for social interactions between students and faculty. The EGSO sponsors events such as spring and fall picnics, golf outings, and intramural sports teams. We also do fundraising to support these activities and for charitable work such as assembling and donating insect reference collections for local schools, supporting a spring speaker, and volunteering with the insect zoo and at events like VEISHA (a university-wide celebration).

Another important function of the EGSO is to mentor new students. When you arrive at ISU you should be assigned a mentor by the EGSO vice-president. If you are not, please bring this to the attention of one of the EGSO officers or the departmental secretary, Kelly Kyle, and a mentor will be assigned to you immediately. Check the entomology student handbook for a check list of items that your mentor should go through with you.

EGSO meetings are typically held on the first Friday of every month at 4:00 PM in room 5 of the Insectary building. However, the meeting time is subject to change depending on the schedules of the current members. Therefore, contact one of the following officers to check on the next scheduled meeting and feel free to ask them any questions you have about the EGSO.

2008-2009

President

Vice President

Treasurer

Secretary

GPSS representative

Nina Schmidt

Kevin Johnson

Jon Oliver

Matt Wihlm

Mike McCarville

Please feel free to come to a meeting or two and see what the organization is all about. If you think it will benefit you and would like to officially join, dues are \$5 per year. We hope you will join and help keep the EGSO a great student run organization!

## APPENDIX II

**EGSO Mentor Check List**

The mentor should cover the following items within the first few weeks that the student arrives and be available for the student at any point during their tenure to answer questions and give advice.

- Take the student on a tour of the entomology buildings (4<sup>th</sup> floor Science II, Insectary, and Genetics Laboratory). Introduce them to any professors or students that are present. If there are professors or students around that you do not know, introduce yourself as well.
- Make sure the student knows where to go to:
  - Get signed up for payroll (Human Resource Services – 1031 Wallace Rd Office Building, Room 100).
  - Get their university ID (0530 Beardshear Hall – 8:00 AM – 4:30 PM make sure the student has a photo ID with them).
  - Get signed up for e-mail (Solution Center, 195 Durham Center).
  - Get keys (Get request slips from Kelly, then take them to the General Services Bldg.; usually takes 24 hrs to get the keys ready)
  - Turn in their health care enrollment form (Thielen Student Health Center, Sheldon and Union Drive)
  - Pay bills (on-line via access plus or Treasurer's Office, 122 Beardshear Hall)
- Go with them to these places if you can.
- Show the student around the Union (the bookstore, also mention the bookstore across the street, food available in the union, the post office, etc...).
- Make the student aware of the following:
  - English test requirements (see graduate student handbook)
  - Assist orientation day
  - Graduate student handbook
  - Parking options – Commuter parking at Iowa State Center and Lot 29
  - How the bus system works (get them a bus schedule). Especially note the orange line that takes students from the stadium/commuter lot to campus. All busses free with student ID
  - How to register for classes using Access Plus, phone, or in person at the Registrar's Office at 214 Alumni Hall. Be sure to register before classes start or extra paper work will be needed (see handbook for details)
  - The Lied Recreation Center
  - Group fitness card – must acquire this card at 2220 State Gym each year if you want to participate in group fitness activities on campus such as aerobics, spinning, and yoga. It is free
  - Resources in the department like: slide maker or scanner, student laptop and projector, coffee room computers, and the 433 teaching lab computer
  - The Entomology Graduate Student Organization (EGSO) and take them to at least one meeting
  - Other campus organizations like: Graduate and Professional Student Senate (GPSS) or other clubs
  - Library resources

- The Entomological Society of America ([www.entsoc.org](http://www.entsoc.org)) and other professional societies
  - How to make long distance calls (see Kelly if you have questions)
  - How to sign up for research credits with their professor's research credit code (see Kelly for appropriate code)
  - How to use copy machine (get copy code from Kelly)
  - Forms – For example, Professional Advancement Grants (PAGs), intramurals, out of state travel forms, University Book Store charge, travel expense voucher, committee selection forms, and program of study forms. These forms should be in the graduate student handbook
- Talk to the student about course requirements, especially 590s (they can be confusing). Show them the Entomology website.
  - Answer any additional questions that student may have about the department, the university, or the community at large.

## APPENDIX III

**Entomology 590: Special Topics**

One Ent590 class is offered each semester. Check the web for the schedule at:  
<http://www.ent.iastate.edu/dept/courses/ent590/>

**590A Biological Control and Pathology.** Bonning. Offered alternate fall semesters. 1 credit, one meeting per week. Aims of the course are to review contemporary topics in biological control and insect pathology, and to discuss current issues in these fields. Students will be expected to (1) give formal presentations of journal articles, (2) lead round table discussions, and (3) actively participate in discussions. Grading will be on a pass/fail basis. There are no prerequisites for this class.

**590B Chemical Ecology and Behavior.** (subject to availability of instructor) 1 credit, one meeting per week. This course investigates the broad disciplines of chemical ecology and insect behavior (semiochemical associated). Major emphasis will be placed upon chemical ecology of insects and their interactions in managed and natural ecosystems. Methods of related semiochemical analyses and their applications for pest management will also be discussed. The course will also cover the most recent advances in chemical ecology, particularly in technology transfer for sustainable agriculture. Grading will be on a pass/fail basis. Required reading materials will be provided in class. There are no prerequisites for this class.

**590C Ecology and Pest Management.** Tollefson. Offered alternate fall semesters. 1 credit, one meeting per week. Each time the course is offered, the instructor will select a topic that deals with the ecology and management of pests. The topic will be one that is currently being debated, and registered students may offer suggestions for discussion topics. The instructor will arrange for guest lecturers that are appropriate, and they and the instructor will provide background information concerning the basis of the topic. The students will choose an aspect of the current topic, research the subject, and report their findings to the class in an oral presentation. The presentation style may be lecture, discussion, or debate. Grades will be assigned based on the report provided by each student and on their participation in class discussions. There are no prerequisites for this class, and students that have not declared a Pest Management emphasis are encouraged to enroll to expand the opinions presented. Faculty are welcome to participate and some may be specifically invited to strengthen the discussion of specific topics.

**590F Medical and Veterinary Entomology.** Bartholomay / Holscher / Beetham. Topics and course format vary, and have included explorations of forensic entomology, insect interactions with medically significant parasites, and the ecology of malaria. The instructor, topic and format for a given semester will be announced in advance. 1 credit course.

**590G Molecular Entomology.** Bonning. Offered alternate fall semesters. 2 credits, one meeting per week. Students will review the principles of molecular biology and molecular techniques, discuss recent literature in a journal club style format, and give a presentation to the class. Topics may include reduction of vector competence, insect resistant transgenic plants, genetic engineering for optimization of insect natural enemies, risk assessment of GMOs. Grading will be on a pass/fail basis. There are no prerequisites for this class.

**590H Physiology and Biochemistry.** Jurenka.

**590I Toxicology and Biochemistry.** Coats. Offered alternate fall semesters. 1 credit, one two-hour meeting per week for half the semester. The course will address current topics in insect toxicology or biochemistry, with one a focus on one topic each semester. Students will be expected to (1) give formal presentations on a topic, (2) lead the discussion which will be based on the presentation and journal articles assigned by the student, and (3) actively participate in discussions. Grading will be on a pass/fail basis. There are no prerequisites for this class.

**590J/M Immature Insects.** Rice, Courtney 2 credits. Schedule is flexible, but a 6-hour/week commitment is expected. This course will be lab- and field-oriented, with an emphasis on hands-on recognition and biology of local major and minor crop pest species and aquatic insects. Live immature insects will be collected and correctly identified, using taxonomic keys. Students will be expected to maintain a detailed laboratory and field notebook and to submit a collection of immature insects.

## APPENDIX IV

## STUDENT AWARDS

See <http://www.ent.iastate.edu/dept/scholarships/grads.html>

ESA awards: <http://www.entsoc.org/awards/index.htm>

NCB ESA awards: <http://esa.ent.iastate.edu/awards>

## HERBERT OSBORN AWARDS FOR PROFESSIONAL PERFORMANCE

Herbert Osborn was internationally recognized as an authority on Homoptera and made significant contributions to the field of Economic Entomology. In 1880, he became the first professor to teach a course in Entomology at Iowa State University. Osborn Cottage and Osborn Drive on campus were named after him.

The purpose of the Herbert Osborn Awards for Professional Performance is to recognize and encourage the development of professional skills beyond academic achievement. Applications will be reviewed by the Student Awards and Scholarships Committee excluding the student representative on that committee. Performance while working on the student's current degree only will be considered. Applications will be evaluated on overall professional performance using the following criteria (1) Research progress, manuscripts and presentations and (2) Service including contributions to professional societies, university, department (including teaching beyond TA requirements), and outreach.

Awards are available for one M.S. student and one Ph.D. student each year. Awardees receive \$100 toward ISU costs and will have their names engraved on the Herbert Osborn Award plaque, which is displayed outside 432 Science II.

**Eligibility:** Students within the department of Entomology may apply during the year of their graduation (prior to graduation), or the year before expected graduation. A student may only receive the award once for each degree.

Applications should include

1. *Curriculum vitae* including a description of professional contributions achievements beyond academic requirements. Ph.D. students should include details of teaching experience.
2. A description of the student's research (one page maximum).
3. A letter from the student's major professor in support of the application including expected graduation date, and appraisal of professional attributes such as leadership qualities, interpersonal and organizational skills. The major professor should specifically address the productivity of the student and the significance of the research.

Applications should be sent to the chair of the Student Awards and Scholarships Committee. Applications must be received by 5 pm on November 1. Awards will be presented at the Holiday Party in December.

## APPENDIX V

**INFORMATION FOR MINORITY STUDENTS**

Web site for minority students: <http://www.iastate.edu/~catalog/2001-03/geninfo/minority.htm>

Financial opportunities available to Minority students include the following:

**Graduate Minority Assistantship Program (GMAP)** located, 1137 Pearson Hall

*Student Eligibility*

Students must be U.S. citizens and a member of an ethnic minority group to qualify for GMAP funding. International students are not eligible. GMAP funding is available to students at the beginning of any term.

For information on types of funding available (graduate assistantships and tuition awards) see:

<http://www.grad-college.iastate.edu/finance/gmap.html>

**George Washington Carver Doctoral Fellowship Program**

See [www.grad-college.iastate.edu/forms/files/GWCform.doc](http://www.grad-college.iastate.edu/forms/files/GWCform.doc)

The George Washington Carver Doctoral Fellowship is named to honor George Washington Carver, Iowa State University's first minority student and faculty member. Through this program the Graduate College provides funding to ethnic minority students admitted into Ph.D. programs across all graduate areas of study.

*Eligibility*

To be nominated for the fellowship, a student must be an ethnic minority (African American, Native American, Hispanic), a U.S. citizen, admitted as full into a Ph.D. program, and nominated by that program of study using the GWC Doctoral fellowship Nomination Form (attached). International students are ineligible. Currently enrolled graduate students or postdoctoral research candidates are ineligible to receive the fellowship; however, if a student completes the requirements for the master's degree and is admitted into a Ph.D. program (even in the same program), he/she is eligible to receive the fellowship.

## APPENDIX VI

**GUIDELINES FOR INTERNATIONAL STUDENTS**

1. Check in with International Students and Scholars before classes begin. [http://www.iastate.edu/~internat\\_info/](http://www.iastate.edu/~internat_info/) During check in you'll be required to carry the necessary documents such as your I-20, I-94, and passport.
2. Make sure that your immunization records are up to date
3. Attend screening for TB and Measles
4. Enroll in the ISU health care plan. Otherwise you won't be treated if you are taken ill.
5. Apply for social security number – otherwise you won't be paid your stipend.
6. If on assistantship, visit the Payroll office (100 Wallace Street) ASAP so that your pay check can be processed.
7. In addition to your TOEFL scores, arrange to take the English Placement Examination soon after arrival (you'll be told the dates during orientation). If you are a Ph.D student, you must also take Speak/Teach English Exam, as this will be required for you to TA
8. In consultation with your major professor, register for classes. Make sure you register for at least 9 credits. Otherwise, you'll be considered **out of status** and may be deported! In the summer you may register for a minimum of 5 credits (if on assistantship)
9. Resources:
  - a. For housing enquiry: Call 294-5360 or e-mail [apartments@iastate.edu](mailto:apartments@iastate.edu)  
See also <http://www.rentiowa.com/>
  - b. Speak with other students in the Department, ask questions!
  - c. International Students and Scholars [http://www.iastate.edu/~internat\\_info/](http://www.iastate.edu/~internat_info/)  
Tel; 294-1120. They have answers to all immigration related questions.

## APPENDIX VII

## DEPARTMENTAL RESOURCES

## Computing and Information Technology Resources

The department of entomology is committed to supporting the work of graduate students by providing them with a computing environment that is stable and secure. You should work with your major professor if you need to get access to a computer for your own use (i.e., on your desk) during your stay at Iowa State. John VanDyk has a limited number of older computers that may be available if your project is unable to supply you with a computer.

Department-supplied computers are kept up-to-date with security patches and virus protection.

Supported operating systems in the department are Mac OS X and Windows XP Professional.

There are three resources that are of particular interest to graduate students:

1. *The entomology network.* After you have received an Iowa State net ID (i.e., an ISU e-mail address), please contact John VanDyk in 411 Science II to establish a departmental network account. This will give you access to departmental computing resources.

2. *Entomology computing facilities.* These include hardware and software as follows:

a. **Student Computer Laboratory**, 418 Science II. This room has 100 base T ("fast") ethernet service. As of July 2006, this facility includes two Windows computers and one Mac OS X computer.

Hardware and software are as follows:

*Power Macintosh G4/two 1.42 GHz G4 processors/1.5 gigabytes of RAM*

Burns CDs and DVDs

Hooked up to flatbed scanner

Microsoft Office

Adobe Photoshop 7

Adobe Acrobat 7

iMovie (for creating and editing digital video)

QuickTime Pro (for importing/exporting digital video)

iDVD (for preparing and burning DVDs)

JMP (statistical package)

iPhoto (for downloading pictures from digital cameras)

*Dell OptiPlex GX270/one Pentium 4 processor/1 gigabyte of RAM*

Burns CDs

Microsoft Office

SAS

*Dell OptiPlex GX280/one Pentium 4 processor/1 gigabyte of RAM*

Microsoft Office  
SAS  
Adobe Creative Suite Pro CS2 (Photoshop, Illustrator)  
Adobe Acrobat 7  
Endnote 9  
Lucid Player (used by systematics class)  
AutoMontage Pro

b. **Entomology Teaching Laboratory**, 433 Science II. This room has 100 base T ("fast") ethernet service. Video input from the microscope feeds into the computer through a Sony media converter which takes analog video and converts it to digital video. Video from the computer screen is mirrored to the video projector attached to ceiling.

Macintosh iMac/one G4 processor/1 gigabyte of RAM  
Virtual PC running Windows 2000 with Microsoft Office  
Microsoft Office 2004 for Macintosh  
iMovie (for creating and editing digital video from microscope)  
iDVD (for preparing and burning DVDs)  
BTVPro (for capturing time-lapse video and other special video needs)  
QuickTime Pro (for importing/exporting digital video)

c. **Laptop** available for checkout from John VanDyk, 411 Science II. The laptop runs Windows XP.

d. **Portable video projector** available for checkout from John VanDyk, 411 Science II. This projector supports any computer with a standard VGA video port.

e. **Canon digital video camera** available for checkout from JohnVanDyk, 411 Science II. Saves data on Sony MiniDV tapes. Exports to digital video on a computer.

3. *The DropBox* is a shared space on the departmental network. Any computer within the departmental network can place files into and retrieve files from the DropBox. The DropBox is meant as a waystation for files on their way from one computer to another. The data on the DropBox is NOT backed up.

**Insect Colonies Maintained within the Department (excluding the insect zoo)**

Common/Scientific Name	Contact Person	Phone
<b>Hemiptera</b>		
Bird cherry-oat aphid, <i>Rhopalosiphum padi</i>	Liljana Georgievska	4-1815
Pea aphid, <i>Acyrtosiphon pisum</i>	Nina Schmidt	4-1815
Soybean aphid, <i>Aphis glycines</i>	Sijun Liu	4-1815
Soybean aphid, <i>Aphis glycines</i>	Kevin Johnson	4-8663
Green peach aphid, <i>Myzus persicae</i>	Sijun Liu	4-1815
<b>Lepidoptera</b>		
European corn borer, <i>Ostrinia nubilalis</i>	Jean Dyer	4-2005
Black Cutworm, <i>Agrotis ipsilon</i>	Jean Dyer	4-2005
Greater wax moth, <i>Galleria mellonella</i>	Jim Robbins	4-6833
<i>Helicoverpa zea</i>	Jim Robbins	4-6833
<b>Coleoptera</b>		
Lady beetles, <i>Coleomegilla maculata</i>	Keith Bidne	4-9039
Maize Weevil, <i>Sitophilus zeamais</i>	Paluch / Behrens	4-9823
Lesser Grain Borer, <i>Rhyzopertha dominica</i>	Paluch / Behrens	4-9823
Saw-toothed Grain Beetle, <i>Oryzaephilus surinamensis</i>	Paluch / Behrens	4-9823
Red Flour Beetle, <i>Tribolium confusum</i>	Paluch / Behrens	4-9823
Drug Store Beetle, <i>Stegobium paniceum</i>	Paluch / Behrens	4-9823
Western corn root worm, <i>Diabrotica virgifera</i>	Mike Dunbar	4-7623
<b>Diptera</b>		
<i>Culex pipiens</i>	Brad Tucker	4-4387
<i>Aedes aegypti</i>	Brad Tucker	4-4387
<i>Aedes albopictus</i>	Brad Tucker	4-4387
<i>Aedes triseriatus</i>	Brad Tucker	4-4387
<i>Anopheles stephensi</i>	Brad Tucker	4-4387
<i>Toxorhynchites amboensis</i>	Brad Tucker	4-4387
<i>Culex quinquefasciatus</i>	Brad Tucker	4-4387
<i>Armigeres subalbatus</i>	Brad Tucker	4-4387
House fly, <i>Musca domestica</i>	Gretchen Paluch	4-9823
<b>Hymenoptera</b>		
Braconidae: <i>Binodoxys communis</i>	Matt O'Neal	4-8622
<b>Blattaria</b>		
American Cockroach, <i>Periplaneta americana</i>	Gretchen Paluch	4-9823
German Cockroach, <i>Blattella germanica</i>	Gretchen Paluch	4-9823
Madeira Cockroach, <i>Rhyparobia maderae</i>	Gretchen Paluch	4-9823
<b>Isopoda</b>		
Pill bug, <i>Armadillium vulgare</i>	Nick Behrens	4-9823
Sow bug, <i>Porcellio scaber</i>	Nick Behrens	4-9823
Sow bug, <i>Trachelipus rathkii</i>	Nick Behrens	4-9823
<b>Acari</b>		
Tick rearing equipment, but no colony	Brad Tucker	4-4387
<b>Annelida (Oligochaeta)</b>		
Earthworm, <i>Eisenia fetida</i>	Ashley Jessick	4-9823
<i>Lumbriculus variegates</i>	Ashley Jessick	4-9823

## APPENDIX VIII

**VOUCHER SPECIMEN POLICY**

Graduate students should be aware of their responsibility to deposit in the Iowa State University Insect Museum (or another institution) voucher specimens of the insects they research (Yoshimoto, C.M. 1978. Voucher specimens for entomology in North America. ESA Bulletin 24(2):141-2).

- a. Individuals embarking on studies that call for voucher specimens should plan carefully before the work is initiated. Such planning should involve direct consultation with entomologists knowledgeable in collection, identification, preservation, and storage of such specimens. When in doubt if vouchers are needed, individuals should check with the Curator of the ISU Insect Collection.
- b. For each species studied a short series of specimens, perhaps 10 of each sex; is preferable to a single specimen or to hundreds of duplicate specimens which take up valuable space in a collection. Each specimen must be correctly prepared and bear a special voucher label (available from the Curator, ISU Insect Collection) clearly linking it to a specific research project, as well as an identification label and all the standard collection data (country and locality, date, collector or researcher, and such information as the host, etc.).
- c. Once a year persons maintaining laboratory cultures used for research must preserve a few vouchers of all cultures in the NCSU Insect Collection.
- d. Theses and research manuscripts for publication must indicate where vouchers have been deposited and the names of specialists who have identified material. Referees and Graduate Advisory Committees should insist that authors include such statements in their works, except in the case of very well-known species which are unlikely to be misidentified. Even in the latter case, however, voucher specimens must be preserved so that future entomologists can substantiate results.

## APPENDIX IX

**QUICK REFERENCE**

The following are some quick internet references that will help you get adjusted to life in Ames, and your graduate program here at Iowa State University (ISU).

**Information on Ames**

[http://www.city.ames.ia.us/student\\_info.htm](http://www.city.ames.ia.us/student_info.htm)

This page contains information on housing such as landlord and tenant responsibilities and information on things to do in Ames such as bike trails, disc golf, parks, pools and the community center. It also has links to Cyride, the police and fire departments, and much, much more.

**Renter's Information**

<http://www.rentiowa.com/>

This page is a great resource for finding off campus housing or a roommate.

**Thielen Student Health Center**

<http://www.public.iastate.edu/~health/homepage.html>

Basic information about ISU's health services can be found on this page.

**International Students**

[http://www.iastate.edu/~internat\\_info/homepage.html](http://www.iastate.edu/~internat_info/homepage.html)

This page contains information on all aspects of international student life including an orientation handbook for international students.

**Graduate College**

<http://www.grad-college.iastate.edu/>

All graduate students should investigate this page! It has links to all the necessary graduate forms and also a link to the graduate student handbook.

**ISU student webpage**

<http://www.iastate.edu/students/>

Has links to access plus and webmail plus links to just about everything else you could need.

**Entomology web site**

<http://www.ent.iastate.edu/>