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I. PROGRAM OVERVIEW

Nationwide, there is a need for scientists who understand modern molecular biology in the context of integrated systems and can apply this understanding to human and animal health. The College of Veterinary Medicine at Michigan State University is addressing this national need with an interdepartmental graduate program in comparative medicine and integrative biology (CMIB). The CMIB program offers graduate students the understanding of how molecular and cellular events integrate into whole-animal systems, knowledge of how appropriate animal models can be used to study human and animal disease, and understanding of how species differences and similarities can be used to investigate basic biology and disease. The program emphasizes development of a firm scientific background in clinical and basic biomedical sciences and the conduct of in-depth original research.

Graduates of the master's and/or the doctoral program in comparative medicine and integrative biology will find employment opportunities in academia, governmental research and regulatory agencies, and in pharmaceutical industry research. They will become leaders in discovery and problem-solving research in medical science and will play an instrumental role in the translation of new knowledge to address current issues in human and animal health and well-being. The overall program is designed to develop an integrative approach to research in clinical, cellular, and molecular problems in comparative medicine and integrative biology. It emphasizes development of a firm scientific background in clinical and basic biomedical sciences and the conduct of original research.

The CMIB program faculty members recognize the importance of interdisciplinary and collaborative approaches to solving critical problems in comparative medicine as well as the need for awareness of the societal and cultural factors that affect our ability to institute measures to improve health and well-being. Most of the problems faced have important global implications. We therefore view the presence of a diverse student and faculty body to be critical to achieving the goals of the program. Creative thinking and collaborative and inclusive approaches are encouraged. In addition to the formal coursework and research program, we expect each student to be an active participant in seminars and symposia available across the campus and to foster a collegial atmosphere of vibrant intellectual exchange.

The members of the CMIB faculty are drawn from all units of the College of Veterinary Medicine and have diverse research programs in clinical and basic sciences, including comparative medical genetics and genomics, comparative ophthalmology, comparative orthopedics, emerging infectious disease and food safety, microbial evolution, neuroscience, pharmacology and toxicology, population medicine and epidemiology, pulmonary biology and disease, reproductive biology, and virology. A list of faculty may be viewed at the following website: http://cvm.msu.edu/research/graduate-education-programs/cmib/faculty
II. PROGRAM COMPONENTS/PLAN OPTIONS

The CMIB graduate programs are designed to develop an integrative approach to research in clinical, cellular, and molecular problems in comparative medicine and biology. The program emphasizes development of a firm scientific background in clinical and basic biomedical sciences and the conduct of in-depth original research.

CMIB offers the following programs:
- Master of Science: MS Plan A (indicating a degree with a thesis)
- Master of Science: MS Plan B (indicating a degree without a thesis)
- Doctor of Philosophy: PhD (indicating a doctoral degree with a dissertation).

In addition, students may qualify for additional certificate programs available throughout the university. The requirements of certificate programs must be completed in addition to those required by the CMIB degree programs.

At this time, the following certificate programs are available:

<table>
<thead>
<tr>
<th>Environmental Science and Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Safety</td>
</tr>
<tr>
<td>Teaching</td>
</tr>
<tr>
<td>Business Communication</td>
</tr>
</tbody>
</table>

**Training in Responsible Conduct of Research**

Training in responsible conduct of research is a critical component of all degree options in the CMIB program. Michigan State University has recognized that continued training in responsible conduct of research must be part of the training of all scholars, at all levels. With this recognition, the Graduate School and the training community as a whole have engaged in development of extensive resources and workshops to facilitate training in Responsible Conduct of Research, RCR. The CMIB program utilizes these resources and requires formal and informal; group and one-on-one training in responsible conduct of research throughout the graduate education program as follows:

- **Attendance at RCR Workshops Sponsored by the Graduate School:** Students should complete these series before they graduate; students are encouraged to do so during their first year.
  - Six interactive workshops, each two-hour long, comprise this series. The titles of the workshops are presented below. Current year dates can be found at the Graduate School website:
    - [www.grad.msu.edu](http://www.grad.msu.edu)
  - Current year workshops include the following:
    - Investing in Responsibility & Integrity for a Productive Career,
    - Responsible Decision-making in Academic Research: Ethical & Moral Perspectives
    - Maintaining a Productive & Responsive Environment for Conducting Research
- Personal Responsibility in Conducting Research & Advancing Your Career
- Responsibility to the Subject of Research: Humans,
- Responsibility to the Subject of Research: Animals,
- Objectivity & Conflicting Interests in Academic Research
  - Attendance at each workshop is documented through registration and on-site procedures.
  - The Graduate School provides the attendees who complete the series with a certificate and provides a copy of the names of such trainees to each program director.
- Training in Human Research Protection Program (HRPP) and Institutional Animal Use and Care (IACUC) Programs
  - Regardless of the nature of each trainees project, she/he will be expected to complete both HRPP and IACUC training
  - HRPP training includes an online tutorial through the Collaborative Institutional Training Initiative (CITI). Access to CITI is provided through MSU.
  - IACUC training is provided through online tutorials through MSU.
  - Documentation of completion of each program and tracking is available and will be monitored by program directors. Refresher sessions will be completed yearly.
- Discussion of topics, one topic selected by mutual agreement with student and mentor, covering one chapter from the book “On Being a Scientist” per semester. Topics discussed should be reported by the student/mentor at each committee meeting. Review of RCR training is an important mission of all guidance committee meetings.
- Participating at Program Book Club, where trainees, graduate students, fellows and faculty meet to discuss a book of choice and its relevance to current issues in RCR. Questions priming the discussion will be distributed in advance. Food will be provided. Master’s students are expected to participate in one journal club, and PhD students are expected to participate in two journal clubs during their training period.
  - A different book will be selected every year. Suggestions will be solicited from all CMIB members.
  - Examples of suitable titles would be “Great Feuds in Medicine: Ten of the Liveliest Disputes Ever” by Hel Hallman, “The Immortal Life of Henrietta Lacks” by Rebecca Skloot, “The Animal Research War” by P.M. Conn and J.V. Parker, or “The Art and Politics of Science” by Harold Varmus and other titles that may offer rich grounds for discussion and community-wide understanding of RCR issues.

Components of the MS Programs

The College of Veterinary Medicine offers a master of science program in comparative medicine and integrative biology. Plan A consists of (1) prescribed course work to develop an understanding of major concepts in comparative medicine and integrative biology as well as to acquire comprehensive knowledge of a major field and related subjects, (2) original research of an important problem in human and animal health or biology, (3) a thesis, and (4) a final oral examination. Plan B consists of (1) prescribed course work, and (2) a final oral examination. All
students (both in Plan A and in Plan B) are required to complete the Training in Responsible Conduct of Research (p. 5).

**Components of the PhD Program**

The doctor of philosophy degree program in comparative medicine and integrative biology consists of: (1) course work to develop an understanding of major concepts in comparative medicine and integrative biology as well as to acquire comprehensive knowledge of a major field and related subjects, (2) a comprehensive oral and written examination, (3) original research of an important problem in human and animal health or biology, (4) a dissertation, and (5) a final oral examination. All students are required to complete the Responsible Conduct of Research training as described on p. 5. The program of study is planned by the student and the major advisor in consultation with the guidance committee.

The doctoral program is divided into two phases.

**Phase I (Culminating in a Comprehensive Examination)**

Expectations during Phase I include the following, which are explained in detail under “Two Phases of the PhD Program: Phase I.”

1. Completion of Rotations
2. Completion of 80% of the required coursework
3. Maintenance of a 3.0 or greater cumulative grade-point average
4. Attendance and active participation in all CMIB seminars and attendance to other pertinent seminars and symposia on campus
5. Development of good scientific writing and presentation skills
6. Successful completion of a comprehensive oral and written examination

**Phase II (Culminating in Completion and Defense of a Dissertation)**

Expectations during Phase II include the following, which are explained in detail under “Phases of the PhD Program: Phase II”:

1. Completion of remaining course requirements
2. Conduct of original research of an important problem in human and animal health or biology
3. Presentation of research progress in local, national and international forums as appropriate.
4. Publication of research papers.
5. Attendance and active participation in all CMIB seminars and attendance at other pertinent seminars and symposia on campus.
7. Successful completion of a final oral examination.

**III. DEGREE REQUIREMENTS**

**Master of Science Plan A (with Thesis)**

All students are required to complete the 1) course requirements; 2) research and thesis requirements; and Training in Responsible Conduct of Research as described above (p. 5).
Course Requirements

Course requirements include a minimum of 30 approved graduate course credits, including at least 18 credits of non-research courses, at least 12 of which are at the 800 level or above. A minimum of 10 credits in master's thesis research (course number VM 899) is required for students in Plan A. In addition, all students are required to take EPI 828: The Responsible Conduct of Research; and VM 820: Current Topics in Comparative Medicine and Integrative Biology.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPI 828*</td>
<td>The Responsible Conduct of Research</td>
<td>Sum; every year</td>
<td>1</td>
</tr>
<tr>
<td>VM 820</td>
<td>Current Topics in Comparative Medicine and Integrative Biology</td>
<td>Spr; every year</td>
<td>2</td>
</tr>
</tbody>
</table>

*Students can request waiver of this requirement if they complete all of the Training in Responsible Conduct of Research requirements (p. 5).

To develop a depth of understanding across disciplines, all Plan A students are also required to take at least one approved course in statistics (STT 421, STT 422, or PHM 830) and at least 1 course from 2 of the following 3 major areas: 1) molecular life sciences, 2) integrative biology, and 3) pathology.

Suitable courses for each area are indicated below. Other courses may be included in each area as they are developed or as deemed appropriate by the guidance committee. NOTE: Information about course #, title, when offered, and # of credits are subject to change; therefore, it is the student’s responsibility to check the university’s schedule of courses regarding these details when planning which courses to take.

Molecular Life Sciences

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMB 801</td>
<td>Molecular Biology</td>
<td>Fall; every year</td>
<td>3</td>
</tr>
<tr>
<td>BMB 802</td>
<td>Metabolic Regulation and Signal Transduction</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
<tr>
<td>BMB 831</td>
<td>Physiological Biochemistry</td>
<td>Spr; every even year</td>
<td>4</td>
</tr>
<tr>
<td>BMB 960</td>
<td>Selected Topics in Biochemistry</td>
<td>Fall, Spr; every year</td>
<td>1-2</td>
</tr>
<tr>
<td>MMG 825</td>
<td>Cell Structure and Function</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
<tr>
<td>MMG 835</td>
<td>Eukaryotic Molecular Genetics</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
</tbody>
</table>
### Integrative Biology

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSL 828</td>
<td>Cellular and Integrative Physiology</td>
<td>Spr; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 511</td>
<td>Veterinary Physiology</td>
<td>Spr; every year</td>
<td>5</td>
</tr>
<tr>
<td>PHM 830</td>
<td>Experimental Design and Analysis</td>
<td>Sum; Fall; every year</td>
<td>3 (on-line course)</td>
</tr>
<tr>
<td>PHM 819</td>
<td>Principles of Drug-Tissue Interaction</td>
<td>Sum, every year</td>
<td>1-2</td>
</tr>
<tr>
<td>PHM 821</td>
<td>Principles of Systemic and Integrated Pharmacology and Toxicology</td>
<td>Spring; every year</td>
<td>2</td>
</tr>
<tr>
<td>KIN 812</td>
<td>Cardiovascular, Respiratory, and Metabolic Responses to Exercise</td>
<td>Spr; even years</td>
<td>3</td>
</tr>
<tr>
<td>KIN 813</td>
<td>Neuromuscular and Endocrine Responses to Exercise</td>
<td>Spr; odd years</td>
<td>3</td>
</tr>
<tr>
<td>PSL 827</td>
<td>Physiology and Pharmacology of Excitable Cells</td>
<td>Fall; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 839</td>
<td>Systems Neuroscience</td>
<td>Spring; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 841</td>
<td>Advanced Endocrine Physiology and Pharmacology</td>
<td>Fall; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 885</td>
<td>Vertebrate Neural Systems</td>
<td>Spring; odd years</td>
<td>3</td>
</tr>
</tbody>
</table>

### Pathology

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANS 807</td>
<td>Advanced Food Toxicology</td>
<td>Fall, even years</td>
<td>3</td>
</tr>
<tr>
<td>HNF 840</td>
<td>Human Nutrition and Chronic Diseases</td>
<td>Fall, odd years</td>
<td>3</td>
</tr>
<tr>
<td>HNF 891</td>
<td>Topics in Human Nutrition</td>
<td>Fall, Spr, Sum, every year</td>
<td>variable</td>
</tr>
<tr>
<td>MMG 461</td>
<td>Molecular Pathogenesis</td>
<td>Spring, every year</td>
<td>3</td>
</tr>
<tr>
<td>MMG 813</td>
<td>Molecular Virology</td>
<td>Spring, even years</td>
<td>3</td>
</tr>
<tr>
<td>MMG 851</td>
<td>Immunology</td>
<td>Fall, odd years</td>
<td>3</td>
</tr>
</tbody>
</table>
Pathology

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMG 861</td>
<td>Advanced Microbial Pathogenesis</td>
<td>Fall, even years</td>
<td>3</td>
</tr>
<tr>
<td>PTH 812</td>
<td>Advanced Clinical Chemistry</td>
<td>Spr, even years</td>
<td>2</td>
</tr>
<tr>
<td>PTH 820</td>
<td>Advanced Human Hematology</td>
<td>Fall, even years</td>
<td>2</td>
</tr>
<tr>
<td>PTH 851</td>
<td>Advanced General Pathology</td>
<td>Fall, even years</td>
<td>3</td>
</tr>
<tr>
<td>PTH 852</td>
<td>Advanced General Pathology Laboratory</td>
<td>Concurrently with PTH 852</td>
<td>1</td>
</tr>
<tr>
<td>PTH 854</td>
<td>Advanced Clinical Pathology</td>
<td>Spring, even years</td>
<td>3</td>
</tr>
<tr>
<td>PTH 856</td>
<td>Concepts in Toxicologic Pathology</td>
<td>Sum, odd years</td>
<td>2</td>
</tr>
</tbody>
</table>

Electives

Electives, including non-research and seminar courses, will be determined by the guidance committee.

Research and Thesis Requirements

The student is expected to conduct comparative biomedical research, and to complete and defend a master's thesis. Research credit requirements will consist of at least 10 credit hours of master's thesis research. The written thesis must be based upon original scholarly research. It must contribute new knowledge to the scientific community and result in, or be deemed by the student's advisory committee to have sufficient data for, one or more research papers in peer-reviewed scientific journals. It is the student's responsibility to meet calendar schedules and regulations established by Michigan State University and provide members of the guidance committee ample time, no less than 4 weeks, for a review of the thesis prior to the defense.

Guidelines for the preparation of the thesis are outlined in The Graduate School's booklet entitled “A Formatting Guide: Master's Theses and Doctoral Dissertations,” which is available on the web at: [http://grad.msu.edu/etd/docs/formattingguide.pdf](http://grad.msu.edu/etd/docs/formattingguide.pdf). All guidelines outlined in this booklet must be followed. In addition, the guidance committee may require a specific method for organizing a thesis. The student will submit a bound copy of the completed thesis to each committee member and to the CMIB program director.

Master of Science Plan B (without Thesis)

All students are required to complete the course requirements; and training in Responsible Conduct of Research as described on p. 5.

Course Requirements

Course requirements include a minimum of 30 approved graduate course credits with least 18 of these credits at the 800 and 900 levels. VM 899 credits cannot be counted toward the
30 required credits. All Plan B master’s students are required to take EPI 828: The Responsible Conduct of Research; and VM 820: Current Topics in Comparative Medicine and Integrative Biology.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPI 828*</td>
<td>The Responsible Conduct of Research</td>
<td>Sum; every year</td>
<td>1</td>
</tr>
<tr>
<td>VM 820</td>
<td>Current Topics in Comparative Medicine and Integrative Biology</td>
<td>Spr; every year</td>
<td>2</td>
</tr>
</tbody>
</table>

*Students can request waiver of this requirement if they complete all of the Training in Responsible Conduct of Research requirements (p. 5).

To develop a depth of understanding across disciplines, all Plan B students are also required to take at least one approved course in statistics (STT 421, STT 422, or PHM 830) and at least 1 course from 2 of the following 3 major areas: 1) molecular life sciences, 2) integrative biology, and 3) pathology.

Suitable courses for each area are indicated below. Other courses may be included in each area as they are developed or as deemed appropriate by the guidance committee. NOTE: Information about course #, title, when offered, and # of credits are subject to change; therefore, it is the student’s responsibility to check the university’s schedule of courses regarding these details when planning which courses to take.

**Molecular Life Sciences**

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
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<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMB 801</td>
<td>Molecular Biology</td>
<td>Fall; every year</td>
<td>3</td>
</tr>
<tr>
<td>BMB 802</td>
<td>Metabolic Regulation and Signal Transduction</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
<tr>
<td>BMB 831</td>
<td>Physiological Biochemistry</td>
<td>Spr; even years</td>
<td>4</td>
</tr>
<tr>
<td>BMB 960</td>
<td>Selected Topics in Biochemistry</td>
<td>Fall, Spr; every year</td>
<td>1-2</td>
</tr>
<tr>
<td>MMG 825</td>
<td>Cell Structure and Function</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
<tr>
<td>MMG 835</td>
<td>Eukaryotic Molecular Genetics</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
</tbody>
</table>
**Integrative Biology**

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSL 828</td>
<td>Cellular and Integrative Physiology</td>
<td>Spr; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 511</td>
<td>Veterinary Physiology</td>
<td>Spr; every year</td>
<td>5</td>
</tr>
<tr>
<td>PHM 830</td>
<td>Experimental Design and Analysis</td>
<td>Sum; Fall; every year</td>
<td>3 (on-line course)</td>
</tr>
<tr>
<td>PHM 819</td>
<td>Principles of Drug-Tissue Interaction</td>
<td>Sum, every year</td>
<td>1-2</td>
</tr>
<tr>
<td>PHM 821</td>
<td>Principles of Systemic and Integrated Pharmacology and Toxicology</td>
<td>Spring; every year</td>
<td>2</td>
</tr>
<tr>
<td>KIN 812</td>
<td>Cardiovascular, Respiratory, and Metabolic Responses to Exercise</td>
<td>Spr; every years</td>
<td>3</td>
</tr>
<tr>
<td>KIN 813</td>
<td>Neuromuscular and Endocrine Responses to Exercise</td>
<td>Spr; odd years</td>
<td>3</td>
</tr>
<tr>
<td>PSL 827</td>
<td>Physiology and Pharmacology of Excitable Cells</td>
<td>Fall; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 839</td>
<td>Systems Neuroscience</td>
<td>Spring; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 841</td>
<td>Advanced Endocrine Physiology and Pharmacology</td>
<td>Fall; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 885</td>
<td>Vertebrate Neural Systems</td>
<td>Spring; odd years</td>
<td>3</td>
</tr>
</tbody>
</table>

**Pathology**

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANS 807</td>
<td>Advanced Food Toxicology</td>
<td>Fall, even years</td>
<td>3</td>
</tr>
<tr>
<td>HNF 840</td>
<td>Human Nutrition and Chronic Diseases</td>
<td>Fall, odd years</td>
<td>3</td>
</tr>
<tr>
<td>HNF 891</td>
<td>Topics in Human Nutrition</td>
<td>Fall, Spr, Sum, every year</td>
<td>variable</td>
</tr>
<tr>
<td>MMG 461</td>
<td>Molecular Pathogenesis</td>
<td>Spring, every year</td>
<td>3</td>
</tr>
<tr>
<td>MMG 813</td>
<td>Molecular Virology</td>
<td>Spring, even years</td>
<td>3</td>
</tr>
<tr>
<td>MMG 851</td>
<td>Immunology</td>
<td>Fall, odd years</td>
<td>3</td>
</tr>
</tbody>
</table>
Pathology

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMG 861</td>
<td>Advanced Microbial Pathogenesis</td>
<td>Fall, even years</td>
<td>3</td>
</tr>
<tr>
<td>PTH 812</td>
<td>Advanced Clinical Chemistry</td>
<td>Spr, even years</td>
<td>2</td>
</tr>
<tr>
<td>PTH 820</td>
<td>Advanced Human Hematology</td>
<td>Fall, even years</td>
<td>2</td>
</tr>
<tr>
<td>PTH 851</td>
<td>Advanced General Pathology</td>
<td>Fall, even years</td>
<td>3</td>
</tr>
<tr>
<td>PTH 852</td>
<td>Advanced General Pathology Laboratory</td>
<td>Concurrently with PTH 852</td>
<td>1</td>
</tr>
<tr>
<td>PTH 854</td>
<td>Advanced Clinical Pathology</td>
<td>Spring, even years</td>
<td>3</td>
</tr>
<tr>
<td>PTH 856</td>
<td>Concepts in Toxicologic Pathology</td>
<td>Sum, odd years</td>
<td>2</td>
</tr>
</tbody>
</table>

Electives

The program director and the guidance committee determine the suitability of courses as electives counting toward the degree requirement.

Master of Science Plans A and B

Master of Science Examination

A master of science degree candidate is required to pass a final oral examination that covers course work in the major and supporting fields (Plans A and B), and a defense of the thesis (Plan A). The examination for the master's degree is administered by the guidance committee. The thesis defense will consist of a public lecture followed by an oral examination in which the student will defend the thesis and knowledge of related scientific areas. A notice inviting all faculty members in the CVM and participating departments to attend the defense seminar will be circulated by the program director one week prior to the examination date. The form, scope, and time of the examination will be determined by the guidance committee. Results of the examination will be determined by the guidance committee by simple majority vote.

Academic Standards

Each student must adhere to the university and college regulations regarding his or her graduate program as outlined in the university's academic programs catalog. A 3.00 cumulative grade-point average for all courses counted toward the master's degree is required. In addition, three grades below a 3.0 in courses counted toward the master's degree will remove the student from degree candidacy.
**Unsatisfactory Progress**

If a student does not show satisfactory progress toward meeting academic, research, or thesis requirements, his or her performance will be reviewed in a meeting with the guidance committee. This committee may recommend a change in the student's program or recommend that the student be dismissed from the degree program. Dismissal recommendations will be forwarded to the CMIB program director.

**Time Limit**

While the CMIB program expects most students to complete their degree requirements within 2-3 years, Michigan State University allows up to 6 calendar years (from the beginning of the first semester in which credit was earned toward the MS degree) for students to complete all requirements.

**PhD Program**

The doctor of philosophy degree program in comparative medicine and integrative biology consists of: (1) course work to develop an understanding of major concepts and in comparative medicine and integrative biology as well as to acquire comprehensive knowledge of a major field and related subjects, (2) completion of seminars and activities focused on training in Responsible Conduct of Research as described on p. 5, (3) a comprehensive oral and written examination, (4) original research of an important problem in human and animal health or biology, (5) a dissertation, and (6) a final oral examination. The program of study is planned by the student and the major advisor in consultation with the guidance committee.

**1. Course Requirements**

A minimum of 18 credits of non-research courses is required, with at least 12 of these credits at the 800 level or above. All students are required to take the following two courses. VM 820 must be taken at least twice.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPI 828</td>
<td>The Responsible Conduct of Research</td>
<td>Sum; every year</td>
<td>1</td>
</tr>
<tr>
<td>VM 820</td>
<td>Current Topics in Comparative Medicine and Integrative Biology</td>
<td>Spr; every year</td>
<td>2</td>
</tr>
</tbody>
</table>

* With permission from the program director, this requirement can be waived if the student completes all aspects of the training on Responsible Conduct of Research as described on p. 5.

To develop a depth of understanding across disciplines, all students are required to take at least one course from each of the 4 major areas as defined below as well as a set of elective courses as recommended by their guidance committee. Suitable courses for each area are indicated below. Other courses may be incorporated into each area in the future as they are developed or as deemed appropriate by the guidance committee.
### Molecular Sciences

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMB 801</td>
<td>Molecular Biology</td>
<td>Fall; every year</td>
<td>3</td>
</tr>
<tr>
<td>BMB 802</td>
<td>Metabolic Regulation and Signal Transduction</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
<tr>
<td>BMB 831</td>
<td>Physiological Biochemistry</td>
<td>Spr; even years</td>
<td>4</td>
</tr>
<tr>
<td>BMB 960</td>
<td>Selected Topics in Biochemistry</td>
<td>Fall, Spr; every year</td>
<td>1-2</td>
</tr>
<tr>
<td>MMG 825</td>
<td>Cell Structure and Function</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
<tr>
<td>MMG 835</td>
<td>Eukaryotic Molecular Genetics</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
</tbody>
</table>

### Integrative Biology

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSL 828</td>
<td>Cellular and Integrative Physiology</td>
<td>Spr; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 511</td>
<td>Veterinary Physiology</td>
<td>Spr; every year</td>
<td>5</td>
</tr>
<tr>
<td>PHM 830</td>
<td>Experimental Design and Analysis</td>
<td>Sum; Fall; every year</td>
<td>3 (on-line course)</td>
</tr>
<tr>
<td>PHM 819</td>
<td>Principles of Drug-Tissue Interaction</td>
<td>Sum, every year</td>
<td>1-2</td>
</tr>
<tr>
<td>PHM 821</td>
<td>Principles of Systemic and Integrated Pharmacology and Toxicology</td>
<td>Spr; every year</td>
<td>2</td>
</tr>
<tr>
<td>KIN 812</td>
<td>Cardiovascular, Respiratory, and Metabolic Responses to Exercise</td>
<td>Spr; even years</td>
<td>3</td>
</tr>
<tr>
<td>KIN 813</td>
<td>Neuromuscular and Endocrine Responses to Exercise</td>
<td>Spr; odd years</td>
<td>3</td>
</tr>
<tr>
<td>PSL 827</td>
<td>Physiology and Pharmacology of Excitable Cells</td>
<td>Fall; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 839</td>
<td>Systems Neuroscience</td>
<td>Spring; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 841</td>
<td>Advanced Endocrine Physiology and Pharmacology</td>
<td>Fall; every year</td>
<td>4</td>
</tr>
<tr>
<td>PSL 885</td>
<td>Vertebrate Neural Systems</td>
<td>Spring; odd years</td>
<td>3</td>
</tr>
</tbody>
</table>
## Pathology

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANS 807</td>
<td>Advanced Food Toxicology</td>
<td>Fall, even years</td>
<td>3</td>
</tr>
<tr>
<td>HNF 840</td>
<td>Human Nutrition and Chronic Diseases</td>
<td>Fall, odd years</td>
<td>3</td>
</tr>
<tr>
<td>MMG 461</td>
<td>Molecular Pathogenesis</td>
<td>Spring, every year</td>
<td>3</td>
</tr>
<tr>
<td>MMG 813</td>
<td>Molecular Virology</td>
<td>Spring, even years</td>
<td>3</td>
</tr>
<tr>
<td>MMG 851</td>
<td>Immunology</td>
<td>Fall, odd years</td>
<td>3</td>
</tr>
<tr>
<td>MMG 861</td>
<td>Advanced Microbial Pathogenesis</td>
<td>Spring, odd years</td>
<td>3</td>
</tr>
<tr>
<td>PTH 812</td>
<td>Advanced Clinical Chemistry</td>
<td>Spr, even years</td>
<td>2</td>
</tr>
<tr>
<td>PTH 820</td>
<td>Advanced Human Hematology</td>
<td>Fall, even years</td>
<td>2</td>
</tr>
<tr>
<td>PTH 851</td>
<td>Advanced General Pathology</td>
<td>Fall, even years</td>
<td>3</td>
</tr>
<tr>
<td>PTH 852</td>
<td>Advanced General Pathology Laboratory</td>
<td>Concurrently with PTH 851</td>
<td>1</td>
</tr>
<tr>
<td>PTH 856</td>
<td>Concepts in Toxicologic Pathology</td>
<td>Sum, odd years</td>
<td>2</td>
</tr>
</tbody>
</table>

## Statistics and Epidemiology

The list below serves as a general guide and other courses may be appropriate to include in this section. Students should check with the program director for suitability of other options for this section.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>When Offered</th>
<th># of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STT 421</td>
<td>Statistics I</td>
<td>Fall, Spr, Sum; every year</td>
<td>3</td>
</tr>
<tr>
<td>STT 422</td>
<td>Statistics II</td>
<td>Fall, Spr, Sum; every year</td>
<td>3</td>
</tr>
<tr>
<td>PHM 830</td>
<td>Experimental Design and Analysis</td>
<td>Sum; Fall; every year</td>
<td>3 (on-line course)</td>
</tr>
<tr>
<td>LCS 829</td>
<td>Design and Conduct of Epidemiological Studies and Clinical Trials</td>
<td>Spr; every year</td>
<td>3</td>
</tr>
<tr>
<td>EPI 810</td>
<td>Introduction to Descriptive and Analytical Epidemiology</td>
<td>Fall; every year</td>
<td>3</td>
</tr>
<tr>
<td>VM 533</td>
<td>Veterinary Epidemiology</td>
<td>Fall; every year</td>
<td>3</td>
</tr>
</tbody>
</table>
Electives
Electives, including non-research and seminar courses, will be determined by the guidance committee.

Phases of the PhD Program
The doctor of philosophy degree program in comparative medicine and integrative biology is conducted in the following two phases.

Phase I

Completion of Rotations
Rotations through at least 2 laboratories help in the selection of a suitable mentor and increase the breadth of research experience of the student. The program director guides each student in the identification of appropriate mentors for the rotation periods. It is the responsibility of the student to make appointments with the program director to discuss a potential mentor. Upon identification of 2 –3 potential mentors, the student should contact each potential mentor and discuss ongoing research in that laboratory and the possibility of doing a rotation. Once a mutual decision is agreed to by a potential mentor and a student, the student should notify the graduate director and start the rotation. Most PhD students complete 2-3 research rotations (about 12 weeks each) during their first academic year. This is to aid entering graduate students in identifying a major advisor and to give students intensive familiarity with cutting-edge research and to diversify their skill base. In rare instances, the program director may exempt a student (as in the case of a student with another advanced degree) from fulfilling the rotation requirement. Assignment to rotations will be made by, and requires the approval of, the program director, in consultation with the student and the directors of the laboratories in question. Rotations can be carried out with any MSU faculty member or with individuals at associated organizations (e.g., the Van Andel Research). The student and major advisor(s) will plan the candidate's program subject to suggestions and approval of the research guidance committee. A report on the rotation and an evaluation of the student’s performance will be filed with the program director at the completion of each rotation.

Phase I of the PhD program consists of acquiring and documenting a high degree of competence in fundamental and basic biomedical sciences and developing and documenting research skills. Specific courses to be taken will be determined by the guidance committee, taking into account the background of the student and the potential doctoral project. Preliminary research studies will be performed that will constitute the basis of the dissertation proposal. Phase I culminates with a comprehensive examination, submission of research proposal, and presentation of a research seminar outlining the research proposal with presentation of preliminary data.

2. Training in Responsible Conduct of Research
We have developed an extensive program in Training in Responsible Conduct of Research, as described above (p. 5). Completion of this training program is a requirement.
3. **Comprehensive Examination**

Each student will take a comprehensive examination given by the student's guidance committee toward the end of Phase I. Students may take their comprehensive exam after completion of at least 12 credit hours of course work. This exam will have the following components:

1) A written research proposal prepared by the student (following the guidelines for a [National Research Service Award](https://www.nsf.gov/) proposal), which should be submitted to the guidance committee members at least 2 weeks in advance of the exam.

2) A research seminar outlining this proposal and presenting preliminary data (the seminar will be 50 minutes in length and be open to the public, and allow 5-10 minutes for time for questions from the public at the end).

3) A closed question session following the presentation, in which the student will answer questions from the guidance committee on the proposal and any related matter or basic concepts. Both the depth and the breadth of knowledge of the candidate will be tested.

The student's performance on this examination must be approved by at least 3/4 of the members of the guidance committee, with not more than one dissenting vote from among the Michigan State University regular faculty members of the guidance committee. If there is a unanimous vote that the student failed all parts of the exam, the student will be dismissed from the program. Alternatively, the guidance committee can recommend further work, revision and resubmission of the written pre-proposal, and/or the repetition of the oral examination, and/or the oral presentation. All of these must be conducted within six months of the original examination. Two attempts at passing the examination are allowed. Failure on the second attempt will result in dismissal from the program.

4. **Original Research**

**Phase II**

Phase II of the PhD program consists of conducting research, continuing to expand knowledge base by taking additional courses and seminars as necessary, and completing the research and defending the PhD dissertation. Total research credits should consist of a minimum of 24 research credits (VM 999).

5. **Dissertation**

The written dissertation must be based upon original scholarly research. It must contribute new knowledge to the scientific community and result in, or be deemed by the student's guidance committee to have data sufficient in quantity and quality for, one or more research papers in peer-reviewed scientific journals.

It is the student's responsibility to meet calendar schedules and regulations established by Michigan State University and provide members of the guidance committee ample time, no less than 4 weeks, for a review of the dissertation prior to the defense.
6. Final Oral Examination

The defense will consist of a public lecture followed by an oral examination in which the candidate will defend the dissertation and knowledge of related scientific areas. Three-fourths majority approval of the examination committee is required, with not more than one dissenting vote from among the Michigan State University regular faculty members of the guidance committee. At the conclusion of the defense, the examination committee can recommend further work and determine a timetable for the completion of its requirements. Failure to meet the requirements specified at the defense will result in termination of the candidate's program.

Academic Standards

Each student must adhere to the university and college regulations regarding his or her graduate program as outlined in the university's academic programs catalog. A 3.0 cumulative grade-point average for all courses counted toward the PhD degree is required. In addition, three grades below a 3.0 in courses counted toward the PhD degree will remove the student from degree candidacy. Michigan State University is committed to high academic standards and expects all doctoral students to excel in their programs of study. Research credits are not considered in determining the grade-point average. A grade point average is only one measure of academic standing: academic standards also include consideration of the student's suitability for conducting research, competency in his/her major field, and rate of progress toward completion of the degree. The CMIB program faculty feels that it is a disservice to permit a student to continue toward the degree without the necessary qualifications for retention. Judgment regarding retention is made by the student's major advisor and/or guidance committee members. If it is decided that a student lacks such standards, he/she may be asked to withdraw according to the procedures as defined in the publication Graduate Student Rights and Responsibilities, which is part of the COGS Graduate Student Handbook available from the Council of Graduate Students Office, 316 Student Service Bldg and can be found on the world wide web at http://www.vps.msu.edu/SpLife/gradrights.htm.

The guidance committee and the CMIB program are jointly responsible for evaluating the student's competence, research performance, and development of professional skills and rate of progress. In addition to annual meetings with his/her guidance committee, each student is expected to meet with the CMIB Admission Committee members to review his/her progress in the program. Written evaluations will be communicated to the graduate student and a copy of such evaluations will be kept in the Program Office to be placed in the graduate student's file. A student whose performance does not meet the standards of quality will not be permitted to continue to enroll in the degree program, and appropriate action will be taken by the CMIB program director.

The CMIB Program Office shall maintain an academic file on each graduate student. The file typically will contain the student's MSU application and supporting materials, financial support information, rotation evaluations, and committee reports. Students have the right to access their education records (with the exception of letters of references provided at the time of admission) and may contact the CMIB program director to do so.
Unsatisfactory Progress

If a student does not show satisfactory progress toward meeting academic, research, or dissertation requirements, the guidance committee may recommend a change in the student's program or recommend that the student be dismissed from the degree program. Dismissal recommendations will be forwarded to the CMIB program director.

Preparation of Doctoral Dissertation

Guidelines for the preparation of the dissertation are outlined in The Graduate School's booklet entitled “Formatting Guide: Master's Theses and Doctoral Dissertations,” which is available in departmental offices and in The Graduate School office (or on the web at: http://grad.msu.edu/format.htm). All guidelines outlined in this booklet must be followed. In addition, the guidance committee may require a specific method for organizing a dissertation. The student will submit a bound copy of the completed dissertation to each committee member and to the CMIB program director.

Time Limit

It is recommended that each student complete Phase I within the first two years and Phase II by the end of the fifth year. However, recognizing the different rates of progress possible, a student is allowed up to 3 years to complete Phase I and up to 8 years from the time of a student's first enrollment for graduate degree credits at Michigan State University to complete all of the degree requirements.

Exceptions: If these limits are exceeded, the CMIB program director will consult with the student's guidance committee members to determine the circumstances. The committee may file a letter justifying the continuation of the student. If no letter is filed, or if a majority of the committee decline to sign the letter, the CMIB program director shall inform the student by letter that he or she is no longer eligible to register in the CMIB Program. If the degree requirements are not completed within this eight-year period, the comprehensive examinations must be passed again.

Admission Requirements for All CMIB Programs

General Requirements

Outstanding candidates holding a bachelor's or higher degree in life sciences or related fields or a professional medical degree (DVM, DDS, DO, or MD) will be considered for admission. Applicants should have a grade-point average of at least 3.0, have demonstrated fluency in written and spoken English, and have taken the Graduate Record Examination (GRE). Due to the comparative and integrative nature of the program, graduates from other disciplines, such as statistics, bioinformatics, mathematics, and engineering, are also encouraged to apply.

Applicants must hold a bachelor's or higher degree in life sciences or related fields and have achieved a grade-point average of at least 3.0. As biological sciences interface increasingly with other disciplines such as bioinformatics, mathematics, and engineering, it is possible that students holding degrees in fields other than life sciences may contribute to and benefit from training in comparative medicine and integrative biology. Therefore, the CMIB Admissions Committee may recommend that degree holders in other fields be admitted if their background is deemed appropriate to a particular research area in the college. The CMIB Admissions Committee is director of the CMIB program and has representatives from each department.
Potential candidates will apply for admission by completing the university's online "Application for Graduate Study" (http://grad.msu.edu/apply/; 4911 is the major code number for the CMIB MS program, and 4912 is the major code for the PhD program). Please note that the Graduate Record Examination (GRE) General Test is required of all applicants. TOEFL scores are required for all applicants whose native language is not English. The CMIB Admissions Committee, in conjunction with potential faculty mentors, will determine who will be admitted. An applicant's acceptance will be based upon the following considerations:

1) Academic record (including grade-point average, quality of previous training, performance on the GRE, and proficiency in English as demonstrated by the TOEFL for applicants whose native language is not English (see below).
2) Statement of professional goals.
3) Three letters of reference.
4) Availability of appropriate mentors. The members of the CMIB faculty are drawn from all units of the College of Veterinary Medicine and have diverse research programs in clinical and basic sciences, including comparative medical genetics and genomics, comparative ophthalmology, comparative orthopedics, emerging infectious disease and food safety, microbial evolution, neuroscience, pharmacology and toxicology, population medicine and epidemiology, pulmonary biology and disease, reproductive biology, and virology. A list of faculty may be viewed at the following website: http://cvm.msu.edu/research/graduate-education-programs/cmib/faculty.

Provisional Admission

A student may be provisionally admitted to the program. The provision requirements including timelines will be clearly stated in the admission letter. Provisionally accepted students must meet the criteria set in the admission letter within the defined timeline. Failure to meet the requirements will result in the student being dismissed from the program. Once the student has completed the requirements, he/she should submit proof thereof to the program director and ask for the provisional status to be removed. The program director will review the documents and may remove the provisional status directly or seek the advice of the CMIB Admissions Committee. The student will be notified formally of the decision regarding his/her request for removal of the provisions by mail within one month after he/she has requested the removal of provisional status. Instances of provisional admission may relate to English language proficiency, satisfactory progress in ongoing coursework, successful completion of remedial work, or satisfactory performance in a laboratory rotation.

English Language Proficiency Requirements for International Students

Applicants whose native language is not English must take an English language proficiency test, preferably the Test of English as Foreign Language (TOEFL). Michigan State University requires a total computer rated score of 213 or above (550 or above on paper version), with no sub-scores below 19 (52 on paper version). Occasionally, the TOEFL requirement may be waived if the student has demonstrated competence in another graduate program where the curriculum is conducted in English.
Table of Requirements and Time Limits (Including Forms to be Completed)

**MS Program**

<table>
<thead>
<tr>
<th>Time/Date for Completion</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within two weeks of entry into program</td>
<td>Read the Guidelines for Master of Science Program (<a href="http://cvm.msu.edu/research/graduate-education-programs/cmib/guidelines-for-the-master-of-science-degree">http://cvm.msu.edu/research/graduate-education-programs/cmib/guidelines-for-the-master-of-science-degree</a>)</td>
</tr>
<tr>
<td>As scheduled during first week of the semester</td>
<td>Attend CMIB orientation program</td>
</tr>
<tr>
<td>As soon as possible</td>
<td>Complete the ORCBS courses to enable starting coursework (<a href="http://www.orcbs.msu.edu/">http://www.orcbs.msu.edu/</a>)</td>
</tr>
<tr>
<td>As soon as possible</td>
<td>Read the Graduate Student Rights and Responsibilities document (<a href="http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities">http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities</a>)</td>
</tr>
<tr>
<td>Within 6 months</td>
<td>Select a major advisor, with the aid of your temporary advisor and with the concurrence of the director of the program.</td>
</tr>
<tr>
<td>Within 6-12 months</td>
<td>Initiate activities for [Training in Responsible Conduct of Research](see p. 5).</td>
</tr>
<tr>
<td>Within 6-12 months</td>
<td>Select a guidance committee, with the help of your major advisor. Before you meet with your guidance committee for the first time, you should complete the form called Report of Guidance Committee: Master of Science Program [Jason: form file name = MS Rpt Guid Comm.doc]. On the form, replace the word &quot;Name&quot; with the names of the appropriate faculty members. Then print the form, sign it, and obtain the signatures of your committee members at the meeting. Then send the form to Victoria Hoelzer-Maddox in G-326 Veterinary Medical Center, who will obtain the signature of the program director. Changes to your program may be made later, with the approval of your guidance committee; a new form should be completed, following the above procedures.</td>
</tr>
<tr>
<td>Within 6-12 months</td>
<td>Prepare a seminar outlining your research plan. At least two weeks before the seminar, complete the announcement called Research Plan Seminar [Jason: file name = MS Research Plan Seminar Announcement.ppt] and e-mail to Victoria Hoelzer-Maddox (<a href="mailto:hoelzer-maddox@cvm.msu.edu">hoelzer-maddox@cvm.msu.edu</a>) for distribution.</td>
</tr>
<tr>
<td>At least once per month</td>
<td>Meet with your major advisor to formally review your progress. You should meet with your guidance committee at least twice a year or as recommended by your major advisor.</td>
</tr>
<tr>
<td>Early in the semester in which you</td>
<td>Complete the university's application for graduation</td>
</tr>
<tr>
<td><strong>plan to graduate</strong></td>
<td>(<a href="http://www.reg.msu.edu/stuforms/gradapp/gradapp.asp">http://www.reg.msu.edu/stuforms/gradapp/gradapp.asp</a>)</td>
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<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Thesis preparation</strong></td>
<td>Prepare your thesis according to the university's regulations (<a href="http://grad.msu.edu/etd/">http://grad.msu.edu/etd/</a>)</td>
</tr>
<tr>
<td><strong>One month before your thesis defense</strong></td>
<td>In consultation with your guidance committee, select a date, time, and location for your thesis defense</td>
</tr>
<tr>
<td><strong>Two weeks before your defense</strong></td>
<td>Complete the announcement called Thesis Defense Seminar (<a href="http://grad.msu.edu/etd/">Jason: file name = MS Thesis Defense Seminar Announcement.ppt</a>) and e-mail to Victoria Hoelzer-Maddox (<a href="mailto:hoelzer-maddox@cvm.msu.edu">hoelzer-maddox@cvm.msu.edu</a>) for distribution</td>
</tr>
<tr>
<td><strong>Before your thesis defense</strong></td>
<td>Complete the form called Final Examination: Master of Science Program (<a href="http://grad.msu.edu/etd/">Jason: file name = MS Final Exam</a>), print, and bring to your thesis defense.</td>
</tr>
<tr>
<td><strong>At completion of defense</strong></td>
<td>Your major advisor should indicate &quot;pass&quot; or &quot;fail&quot; on the form, write in the date approved, sign; and then your other committee members should also sign the form. Then send the form to Victoria Hoelzer-Maddox in G-326 Veterinary Medical Center, who will obtain the signature of the CMIB director.</td>
</tr>
</tbody>
</table>

**PhD Program**

<table>
<thead>
<tr>
<th><strong>Time/Date for Completion</strong></th>
<th><strong>Action</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within two weeks of entry into program</strong></td>
<td>Read the Guidelines for Doctor of Philosophy Program (<a href="http://cvm.msu.edu/research/graduate-education-programs/cmib/guidelines-for-the-doctor-of-philosophy-degree">http://cvm.msu.edu/research/graduate-education-programs/cmib/guidelines-for-the-doctor-of-philosophy-degree</a>)</td>
</tr>
<tr>
<td><strong>As scheduled during first week of the semester</strong></td>
<td>Attend CMIB orientation program</td>
</tr>
<tr>
<td><strong>As soon as possible</strong></td>
<td>Complete the ORCBS courses to enable starting coursework (<a href="http://www.orcbs.msu.edu/">http://www.orcbs.msu.edu/</a>)</td>
</tr>
<tr>
<td><strong>As soon as possible</strong></td>
<td>Read the Graduate Student Rights and Responsibilities document (<a href="http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities">http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities</a>)</td>
</tr>
<tr>
<td><strong>Within 6-12 months</strong></td>
<td>Select a major advisor, with the aid of your temporary advisor and with the concurrence of the director of the program.</td>
</tr>
<tr>
<td><strong>Within 6-12 months</strong></td>
<td>Initiate activities for Training in Responsible Conduct of Research (page 5).</td>
</tr>
<tr>
<td><strong>Within 6-12 months</strong></td>
<td>Select a guidance committee, with the help of your major advisor. Before you meet with your guidance committee for the first time, you should complete the form called Report of the Guidance Committee--Doctoral (<a href="http://grad.msu.edu/etd/">Jason: form file name = PhD Rpt Guid Comm</a>). Then print the form, sign it, and obtain the signatures of your committee members at the meeting. Then send the form to Victoria Hoelzer-Maddox in</td>
</tr>
<tr>
<td>Event Description</td>
<td>Instructions</td>
</tr>
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<td>-------------------</td>
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</tr>
<tr>
<td>Meet with your major advisor at least one per month</td>
<td>Meet with your major advisor to formally review your progress. You should meet with your guidance committee at least twice a year or as recommended by your major advisor.</td>
</tr>
<tr>
<td>By the end of second year of your program</td>
<td>You should be ready to take the comprehensive examination. In consultation with your guidance committee, you should arrange the date and time of the exam. Review the guidelines for the comprehensive examination on the CMIB website. As part of your comprehensive examination, you will prepare a seminar outlining your research plan. At least two weeks before the seminar, complete the announcement called Research Proposal Seminar [file name = PhD Research Proposal Seminar Announcement.ppt] and e-mail to Victoria Hoelzer-Maddox (<a href="mailto:hoelzer-maddox@cvm.msu.edu">hoelzer-maddox@cvm.msu.edu</a>) for distribution. Prior to the comprehensive examination, complete the form Record of Comprehensive Examinations for Doctoral Degree and Educational Specialist Degree Candidates [file name = PhD Record of Comprehensive Examinations.doc]. Immediately after the examination, have this form signed by the members of your examination committee; then send the form to Victoria Hoelzer-Maddox in G-326 Veterinary Medical Center, who will obtain the signatures of the program director and associate dean for research and graduate studies, and distribute copies of the signed form.</td>
</tr>
<tr>
<td>Early in the semester in which you hope to graduate</td>
<td>Complete the university's application for graduation (<a href="http://www.reg.msu.edu/stuforms/gradapp/gradapp.asp">http://www.reg.msu.edu/stuforms/gradapp/gradapp.asp</a>)</td>
</tr>
<tr>
<td>Dissertatation preparation</td>
<td>Prepare your dissertation according to the university's regulations (<a href="http://grad.msu.edu/etd/">http://grad.msu.edu/etd/</a>)</td>
</tr>
<tr>
<td>One month before your dissertation defense</td>
<td>In consultation with the members of your guidance committee, select a date, time, and location for your dissertation defense</td>
</tr>
<tr>
<td>At least two weeks before your defense</td>
<td>Complete the announcement called Dissertation Defense Seminar Announcement [file name = PhD Dissertation Defense Seminar Announcement.ppt] and e-mail to Victoria Hoelzer-Maddox (<a href="mailto:hoelzer-maddox@cvm.msu.edu">hoelzer-maddox@cvm.msu.edu</a>) and Vilma Yuzbasiyan-Gurkan (<a href="mailto:yuzbasiyan@cvm.msu.edu">yuzbasiyan@cvm.msu.edu</a>) for perusal and distribution.</td>
</tr>
<tr>
<td>Before your defense</td>
<td>Complete the form called Final Examination: Doctoral Program [file name = PhD Final Exam.doc], print it,</td>
</tr>
</tbody>
</table>
and bring it to your dissertation defense.

At completion of defense

Your major advisor should indicate on the form whether your 1) dissertation has been accepted, rejected, or accepted subject to revisions; 2) oral examination was passed or failed (if failed, a reason must be given). Your examiners (and program director, if present) should sign and date the form. You should then send the form to Victoria Hoelzer-Maddox in G-326 Veterinary Medical Center, who will obtain the remaining signatures and distribute copies of the signed form.

Year-by-Year Synopsis of the Degree Programs

<table>
<thead>
<tr>
<th>Year</th>
<th>MS Plan A</th>
<th>MS Plan B</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coursework Laboratory rotations ORCBS training AUCAUC and UCRIHS training Responsible Conduct of Research training as described on p. 5.</td>
<td>Coursework Laboratory rotations ORCBS training AUCAUC and UCRIHS training Responsible Conduct of Research training as described on p. 5.</td>
<td>Coursework Laboratory rotations ORCBS training AUCAUC and UCRIHS training Responsible Conduct of Research training as described on p. 5.</td>
</tr>
<tr>
<td>2</td>
<td>Coursework Research Complete thesis Defend thesis</td>
<td>Coursework Research Write final paper</td>
<td>Coursework Research</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Comprehensive exam Research Publications</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Research Publications Write dissertation Defend dissertation</td>
<td></td>
</tr>
</tbody>
</table>

**Residency Requirements**

Michigan State University requires that MS students earn a minimum of 6 credits in the degree program while residing on campus; PhD students are required to complete at least one year of residence (i.e., two consecutive semesters of enrollment with at least 6 credits) on campus. The CMIB expects that students will conduct the majority of their academic work on campus; exceptions to this must be requested in writing to the program director.

**Language Requirement**

The CMIB graduate program does not have a language requirement.
Transfer Credits

Graduate credits may be transferred from other accredited institutions or foreign institutions of similar quality if they are appropriate to a CMIB graduate student's program, approved by the CMIB program director, and provided they were completed within the time limits approved for the earning of the degree desired at Michigan State University. Only graduate-level courses in which at least a 3.0 (B) grade was received will be considered for transfer.

IV. SELECTION OF THESIS/DISSERTATION ADVISOR

Introduction

Finding the right laboratory and mentor is crucial in one's pursuit of a PhD degree. The CMIB program director serves as the major advisor to each student until a major advisor is selected. The CMIB program encourages students to make careful, well-informed decisions regarding their selection of rotations. Each student is advised regarding faculty members who can serve as potential advisors. Therefore, the CMIB program allows for up to three rotation experiences for each student during their first year before the selection of a major advisor who will be his/her thesis/dissertation advisor. The choice of a major advisor must be mutually agreed upon by the student, the faculty member, and the CMIB program director. The student and the selected advisor should express their desire to enter the thesis/dissertation advisor/student relationship to the CMIB program director in writing. The program director will review the request and may request additional information such as availability of funds to support the student and/or the research project. In cases where an appropriate mentor is not identified by the end of the third rotation, the student may request a fourth rotation. The granting of a fourth rotation will be at the discretion of the CMIB program director. The student will be expected to identify an acceptable laboratory and mentor after the fourth rotation. Failure to do so may result in dismissal from the CMIB program.

The CMIB program director may excuse a student from one or more of the rotations when the student can make a compelling case for it in writing. For example, a graduate student with an MS degree in a biological science or related area may wish to enter the CMIB program with the intent of working with a particular faculty member. If this student has the appropriate background and experience, he/she may not need to do one or more of the laboratory rotations. However, the CMIB program recognizes the benefit of an additional rotation in a laboratory different from that of major advisor in order to increase the breadth of experiences for each student and faculty. The CMIB program encourages its students and faculty to make use of this opportunity.

The major advisor is charged with the nurturing of each student to become both a knowledgeable expert in the field, and an independent researcher with integrity and a sense of responsibility. Both students and faculty are encouraged to communicate clearly on all aspects of the research project and the educational experience. Further discussion of mentor and mentee relationships can be found at the following website: http://grad.msu.edu/publications/docs/studentadvising.pdf

Responsibilities of the Major advisor

• Ensuring that graduate students receive information about requirements and policies of the graduate program
• Advising graduate students on developing a program plan, including appropriate course
work, research or creative activity, and on available resources
• Advising graduate students on the selection of a thesis or dissertation topic with realistic prospects for successful completion within an appropriate time frame and on the formation of a guidance committee
• Providing training and oversight in creative activities, research rigor, theoretical and technical aspects of the thesis or dissertation research, and in professional integrity
• Encouraging graduate students to stay abreast of the literature and cutting-edge ideas in the field
• Helping graduate students to develop professional skills in writing reports, papers, and grant proposals, making professional presentations, establishing professional networks, interviewing, and evaluating manuscripts and papers
• Providing regular feedback on the progress of graduate students toward degree completion, including feedback on research or creative activities, course work, and teaching, and constructive criticism if the progress does not meet expectations
• Helping graduate students develop into successful professionals and colleagues, including encouraging students to participate and disseminate results of research or creative activities in the appropriate scholarly or public forums
• Facilitating career development, including advising graduate students on appropriate job and career options, as well as on the preparation of application materials for appropriate fellowship, scholarship, and other relevant opportunities
• Writing letters of reference for appropriate fellowship, scholarship, award, and job opportunities
• Providing for supervision and advising of graduate students when the major advisor is on leave or extended absence A major advisor on leave should provide a replacement adviser during his/her absence and also arrange for continuity of financial support.

Responsibilities of the Guidance Committee
The guidance committee members serve as a network of supportive mentors for the graduate student and should be accessible to the student for their advice. The responsibilities of the guidance committee include the following:
• Advising graduate students on course work, research, or creative activities
• Providing at least annually feedback and guidance concerning progress toward the degree
• Administering exams in a fair and professional manner
• Reviewing the thesis or dissertation in a timely, constructive, and critical manner

Responsibilities of the Graduate Student
• Learning and adhering to university and academic unit rules, procedures, and policies applicable to graduate study and research or creative activities, including those outlined in the following documents:
  1) Academic Programs
  2) Graduate Student Rights and Responsibilities
  3) Medical Student Rights and Responsibilities
  4) Academic Freedom for Students at MSU
• Meeting university and academic unit requirements for degree completion
• Forming a guidance committee that meets university requirements, as well as requirements that are outlined in the Graduate Handbook of the academic unit
• Following disciplinary and scholarly codes of ethics in course work, thesis or dissertation research, and in creative activities
• Practicing uncompromising honesty and integrity according to university and federal guidelines in collecting and maintaining data
• Seeking regulatory approval for research in the early stages of thesis or dissertation work where applicable
• Keeping the major advisor and guidance committee apprised on a regular basis of the progress toward completion of the thesis or dissertation
• Keeping the CMIB Program Office apprised of developments in their careers upon graduation to add to the history of the graduate program.

Changing the Major Advisor

Changes in the student’s and/or the advisor’s research interests and or changes in the dynamics of the mentor/graduate student relationships may arise. In such cases, the student and/or the major advisor can request a change in the assignment of the major advisor and may request such a change from the program director in writing.

If the student is in good academic standing and making progress in his/her research, the program director will facilitate the establishment of another major advisor. However, the CMIB program cannot guarantee the availability of another major advisor, and the student may need to discontinue the program.

Special attention will be given to the resolution of conflicts between a graduate student and his/her advisor. The program director will serve as a mediator to evaluate the situation and may ask the student and faculty member to seek assistance from other university resources such as the Office of the Ombudsman, the MSU Counseling Center, or the dean of The Graduate School.

Changing the Membership of the Guidance Committee

Various situations can make changes in the membership of the guidance committee necessary. These include, but are not limited to, the availability/unavailability of CMIB faculty members such as may happen during sabbatical or other leaves from the university changes in the direction of research of the student.

Additions and substitutions to the guidance committee membership should be requested in writing by the student and the major advisor and must meet the approval of the program director.

V. FORMATION OF THE GUIDANCE COMMITTEE

MS Students

The CMIB program director serves as the temporary advisor or designates a temporary advisor from the CMIB faculty to each incoming student. Within six months after entrance into the program, the MS student is encouraged to identify a major advisor from the CMIB faculty, after consultation with the CMIB program director. The student, in consultation with the major advisor, will then propose a guidance committee to the program director for approval. The committee shall consist of at least four members: the major advisor and at least two other faculty members must be from CVM; the fourth faculty member may be from CVM, another college at MSU, or another institution; and at least two of the committee members must be from the CMIB program. Exceptions to these rules may be requested in writing with compelling explanations to the CMIB program director. The guidance committee will serve throughout the student's PhD
program. Substitutions, replacements, or additions to the committee may be made upon written approval of the CMIB program director. To add depth and/or breadth to the committee, or to ensure uniform standards across the academic unit, the program director may add a fifth member to the guidance committee.

PhD Students

The CMIB program director serves as the temporary advisor or designates a temporary advisor from the CMIB faculty for each incoming student. Within a year after entrance into the program, the PhD student is encouraged to identify a major advisor from the CMIB faculty, after consultation with the CMIB program director. The student, in consultation with the major advisor, will then propose a guidance committee to the program director for approval. The committee shall consist of at least four members: the major advisor and at least two other faculty members must be from CVM; the fourth faculty member may be from CVM, another college at MSU, or another institution; and at least two of the committee members must be from the CMIB program. Exceptions to these rules may be requested in writing with compelling explanations to the CMIB program director. The guidance committee will serve throughout the student's PhD program. Substitutions, replacements, or additions to the committee may be made upon written approval of the CMIB program director. To add depth and/or breadth to the committee, or to ensure uniform standards across the academic unit, the program director may add an additional member to the guidance committee at any time.

VI. THESIS/DISSERTATION DEFENSE AND FINAL ORAL EXAMINATION

MS Degree

The final master’s examination is the culmination of a student’s graduate education and training and reflects not only on the accomplishments of the graduate student but also on the quality of the graduate program. An approved thesis/dissertation that is accepted by The Graduate School becomes a single-author publication and contributes to the body of knowledge of the discipline.

A master of science degree candidate is required to pass a final examination that covers course work in the major and supporting fields (Plans A and B), and a defense of the thesis (Plan A). The examination for the master's degree is administered by the guidance committee. In certain circumstances, the CMIB program director can elect to appoint an outside member to the examining committee. The outside member of the committee will read and critique the thesis/dissertation, will participate in the oral part of the exam, and will submit a report to the dean of the college and/or the program director.

The thesis defense will consist of a public lecture followed by an oral examination in which the student will defend the thesis and knowledge of related scientific areas.

A notice inviting all faculty members in the CVM and participating departments to attend the final examination will be circulated by the program director one week prior to the examination date. The form, scope, and time of the examination will be determined by the guidance committee. Results of the examination will be determined by the guidance committee by simple majority vote.
The student is expected to provide the Program Office and members of the guidance committee with a copy of the thesis, after all changes have been made and it has been approved by The Graduate School.

**PhD Degree**

The dissertation defense and final examination is the culmination of a student’s graduate education and training and reflects not only on the accomplishments of the graduate student but also on the quality of the graduate program. An approved dissertation that is accepted by The Graduate School becomes a single-author publication and contributes to the body of knowledge of the discipline.

The written dissertation must be based upon original scholarly research. It must contribute new knowledge to the scientific community and result in, or be deemed by the student's guidance committee to have data sufficient in quantity and quality for, one or more research papers in peer-reviewed scientific journals.

It is the student's responsibility to meet calendar schedules and regulations established by Michigan State University and provide members of the guidance committee ample time, no less than 4 weeks, for a review of the dissertation prior to the defense.

The defense will consist of a public lecture followed by an oral examination in which the candidate will defend the dissertation and knowledge of related scientific areas. Three-fourths majority approval of the examination committee is required, with not more than one dissenting vote from among the Michigan State University regular faculty members of the guidance committee. At the conclusion of the defense, the examination committee can recommend further work and determine a timetable for the completion of its requirements. Failure to meet the requirements specified at the defense will result in termination of the candidate's program.

It is expected that all students, with their mentor, will publish their work in a timely fashion. Prompt publication of findings contributes to the body of knowledge while helping enhance the student’s career.

The student is expected to provide the Program Office and members of the guidance committee with a copy of the dissertation, after all changes have been made and it has been approved by The Graduate School.

A list of recent theses and dissertations accepted by the program is available in the Program Office. Students can request access to copies of these documents through the program director.

**VII. DEPARTMENTAL POLICIES: ACADEMIC PERFORMANCE**

**Annual Meeting with CMIB Admissions Committee**

Each student will meet with the CMIB Admissions Committee to review all aspects of his/her progress. On this occasion, the graduate student has the opportunity to discuss with the program director and the committee any aspects of his or her studies that seem relevant for successful completion of the graduate program, including problems that may hinder progress, and any appeal of the major advisor’s evaluation (see above). Recommendations based on this review will be communicated in writing to the major advisor and the graduate student within two weeks of the meeting, and that report will be placed in the graduate student’s file.
Annual Progress Report

After the student has a permanent major advisor, the major advisor and the graduate student will complete the appropriate portions of an annual progress report form and will meet to discuss this evaluation and, if applicable, sources of funding. The major advisor and the graduate student will sign the completed annual progress report, which will be submitted to the program director and will be placed into the graduate student’s file. The annual evaluation by the advisor should be coordinated with the review of the student’s progress by the guidance committee; the two reports may be combined to avoid duplication. Graduate students who wish to appeal any part of the major advisor’s evaluation may do so in writing to the program director and this appeal will be filed together with the annual progress report.

Annual Guidance Committee Meeting

At least once a year, the guidance committee will review the graduate student’s progress in his or her research or creative activity as well as plans for work in the coming year. A report on the results of this review will be signed by the members of the guidance committee and by the graduate student. This report will be filed with the chair/director of the academic unit and will be placed in the graduate student’s file, together with any response that the graduate student may attach to the report of the guidance committee.

Acceptable Academic Standing

MS Degree

Each student must adhere to the university and college regulations regarding his or her graduate program as outlined in the university's academic programs catalog. A 3.0 cumulative grade-point average for all courses counted toward the master's degree is required. In addition, three grades below a 3.0 in courses counted toward the master's degree will remove the student from degree candidacy.

PhD Degree

Each student must adhere to the university and college regulations regarding his or her graduate program as outlined in the university's academic programs catalog. A 3.0 cumulative grade-point average for all courses counted toward the PhD degree is required. In addition, three grades below a 3.0 in courses counted toward the PhD degree will remove the student from degree candidacy. Michigan State University is committed to high academic standards and expects all doctoral students to excel in their programs of study. Research credits are not considered in determining the grade-point average. A grade point average is only one measure of academic standing; academic standards also include consideration of the student's suitability for conducting research, competency in his/her major field, and rate of progress toward completion of the degree. The CMIB program faculty feels that it is a disservice to permit a student to continue toward the degree without the necessary qualifications for retention. Judgment regarding retention is made by the student's major advisor and/or guidance committee members. If it is decided that a student lacks such standards, he/she may be asked to withdraw according to the procedures as defined in the publication Graduate Student Rights and Responsibilities, which is part of the COGS Graduate Student Handbook available from the Council of Graduate
Students Office, 316 Student Service Bldg and can be found at the following website: http://www.vps.msu.edu/SpLife/gradrights.htm.

Student’s Program File

The CMIB Program Office shall maintain an academic file on each graduate student. The file typically will contain the student's MSU application and supporting materials, financial support information, rotation evaluations, and committee reports. Students have the right to access their education records (with the exception of letters of references provided at the time of admission) and may contact the CMIB program director to do so. The student has the right to look at documents in his/her file as indicated in (GSRR 3.2.3). The student should make an appointment to review his/her file with the program assistant. Contents of the file may not leave the program office. A student can make a request, justifying his/her need for a copy of the documents in his file to the program director, who can authorize copies to be provided to the student in due course.

Policy for Grading Comprehensive Examination

The student's performance on the comprehensive examination must be approved by at least 3/4 of the members of the guidance committee, with not more than one dissenting vote from among the Michigan State University regular faculty members of the guidance committee. If there is a unanimous vote that the student failed all parts of the exam, the student will be dismissed from the program. Alternatively, the guidance committee can recommend further work, revision and resubmission of written pre-proposal, and/or the repetition of the oral examination, and/or the oral presentation. All of these must be conducted within six months of the original examination. Two attempts at passing the examination are allowed. Failure on the second attempt will result in dismissal from the program.

VIII. DEPARTMENTAL POLICIES: INTEGRITY AND SAFETY IN RESEARCH AND CREATIVE ACTIVITIES

Integrity

Integrity in research and creative activities is based on sound disciplinary practices as well as on a commitment to basic values such as fairness, equity, honesty, and respect. Students learn to value professional integrity and high standards of ethical behavior through interaction with members of their academic unit and their major advisor and by emulating exemplary behavior. The program director will provide each major advisor and graduate student with the document Guidelines for Integrity in Research and Creative Activities (http://grad.msu.edu/publications/docs/integrityresearch.pdf)

Integrity in research embodies a range of practices that include:

a. Honesty in proposing, performing, and reporting research
b. Recognition of prior work
c. Confidentiality in peer review
d. Disclosure of potential conflicts of interest
e. Compliance with institutional and sponsor requirements
f. Protection of human subjects and humane care of animals in the conduct of research
g. Collegiality in scholarly interactions and sharing of resources
The CMIB program has the highest expectations in ethical conduct and sound disciplinary practice from all of its graduate students. Students are encouraged to engage in open dialog with each other, with their mentor, and with the program director on any issues they find challenging on any ethical matter.

The CMIB program expects all of its students to receive formal Responsible Conduct of Research training as described on p. 5. A course entitled The Responsible Conduct of Research (EPI 828), which focuses on such issues, is a requirement for all MS and PhD students. With permission from the program director, the student may substitute another course or a seminar series focusing on the responsible conduct of research to meet this requirement. In addition, the CMIB course, VM 820, while focusing on current topics in comparative medicine and integrative biology, will include in its sessions discussions on the ethical implications of the science. The students are also encouraged to attend all of the seminars on responsible conduct of research sponsored by The Graduate School.

**Misconduct in Research**

Federal and university policies define misconduct to include *fabrication or falsification* of data, and *plagiarism*. Serious or continuing non-compliance with government regulations pertaining to research may constitute misconduct as well. University policy also defines retaliation against whistle blowers as misconduct. Misconduct does not include honest errors or honest differences of opinion in the interpretation or judgment of data. The university views misconduct to be the most egregious violation of standards of integrity and as grounds for disciplinary action, including termination of employment of faculty and staff, dismissal of students, and revocation of degrees. It is the responsibility of the faculty, staff, and students alike to understand the university’s policies on misconduct in research, to report perceived acts of misconduct of which they have direct knowledge to the university intellectual integrity officer, and to protect the rights and privacy of individuals making such reports in good faith (see *Guidelines for Integrity in research and Creative Activities* [http://grad.msu.edu/publications/docs/integrityresearch.pdf](http://grad.msu.edu/publications/docs/integrityresearch.pdf)).

Research misconduct, dishonesty with respect to grades or academic records and scholarship, and violations of professional standards by graduate students will be grounds for dismissal from the program.

Professional standards relating to authorship, ownership of intellectual property, and collaboration will be discussed with each student by the program director and major advisor. These matters are also covered at various seminars sponsored by The Graduate School and students are advised to attend them.

**Authorship**

MSU has established guidelines for authorship that must be followed by all its members. These can be found on the following website: ([http://rio.msu.edu/authorshipguidelines.htm](http://rio.msu.edu/authorshipguidelines.htm)).

This policy indicates that a person claiming authorship of a scholarly publication must have met the following criteria:

a. Substantial participation in conception and design of the study, or in analysis and interpretation of data;

b. Substantial participation in the drafting of the manuscript or in the substantive editing of the manuscript;

c. Final approval of the version of the manuscript to be published;
d. Ability to explain and defend the study in public or scholarly settings.

The following terms are defined on the website:

**Acknowledgment**

Contributions that do not justify authorship should be acknowledged separately in the notes to the manuscript. These may include general supervision of a research group, assistance in obtaining funding, or technical support.

**Honorary Authorship**

A claim of authorship, or assignment of authorship to, persons who may have been associated in some way with a study but do not meet the four criteria in item 1 may constitute an unethical research practice.

**Graduate Student Authorship**

Faculty should be especially aware of their responsibility to safeguard the rights of graduate students to publish the results of their research.

**Senior Author and Order of Authorship**

The senior author is generally defined as the person who leads a study and makes a major contribution to the work. All of the authors at the outset of a project should establish senior authorship, preferably in a written memorandum of understanding. This memorandum of understanding should reference the authors’ agreement to abide by their departments’ policy on authorship or the following university default policy on authorship. At the outset of the study the senior author should discuss the outline of work and a tentative order of authorship with the study participants. As projects proceed, agreements regarding authorship may need to be changed. It is the responsibility of the senior author to ensure that the contributions of study participants are properly recognized.

**Disputes over Authorship**

Disagreements over authorship, e.g. who has a right to be an author or the order of authorship, should be resolved by the senior author in collegial consultation with the other authors. When this process cannot reach resolution, the senior author should arrange with his or her chairperson for arbitration by a knowledgeable and disinterested third party acceptable to all the authors. If the authors cannot agree on a mutually acceptable arbitrator, then the vice president for research and graduate studies shall appoint an arbitrator. During the arbitration process all the authors are expected to refrain from unilateral actions that may damage the authorship interests and rights of the other authors.

**Accountability**

Every author listed on a publication is presumed to have approved the final version of the manuscript. Each author is responsible for the integrity of the research being reported.

**Plagiarism**

The word plagiarism is derived from the Latin “plagiarius,” an abductor, and “plagiare,” to steal. The expropriation of another author’s text, and the presentation of it as one’s own,
constitutes plagiarism. Plagiarism, in turn, constitutes misconduct in scholarship under university policies and procedures. Plagiarism in scholarly projects should be reported to one’s chairperson, dean, or the university intellectual integrity officer.

Safety in Research

The university acts through its advisory committees and academic governance bodies to insure that individual research and scholarly projects incorporate appropriate safeguards when dealing with radiation, biological and chemical hazards. Additional information regarding these guidelines is contained in the MSU Handbook for Research and Other Scholarly Projects published by the Office of Research Development, telephone 355-2186. All individuals performing work with hazardous substances must accept a shared responsibility for operating in a safe manner once they have been informed about the extent of risk and safe procedures for their activities. Individuals are responsible for safely performing activities associated with hazardous substances.

All persons who handle hazardous substances are required to attend yearly training sessions sponsored by the Office of Radiation, Chemical, and Biological Safety (ORCBS). Information regarding these sessions can be obtained at the ORCBS website http://www.orcbs.msu.edu/ or by contacting the training hotline at 432-SAFE or the ORCBS office at 355-0153.

If a CMIB Program graduate student has a question regarding safety, he/she should ask the major advisor. If the question of safety is not resolved, the student should contact the ORCBS for a Material Safety Data Sheet (MSDS).

Conduct of research in a manner that is safe for the student, other members of the research team, and the environment is an integral aspect of the responsible conduct of research. The MSU Office of Radiation Chemical and Biological Safety (ORCBS) articulates pertinent regulations and policies related to laboratory safety and security including issues related to the handling of transgenic plants and pathogenic organisms and provides and documents training to the MSU community. Information on training classes is available at http://www.orcbs.msu.edu/. It is the responsibility of the advisor and lab director to inform the student of all the training requirements and options. No students should start experiments without proper training. It is advised that students in CMIB complete the following training modules during their first semester in the program to facilitate their progress in research:

- Biological Safety
- Biosafety Basics For Animal Users
- Bloodborne Pathogen
- Bloodborne Pathogen I
- Chemical Hygiene & Laboratory Safety
- Hazardous Waste Initial
- Medical Waste
- Radiation Safety Initial

Use of Humans and Vertebrate Animals for Research

The Graduate School will not accept doctoral dissertations containing research on human subjects that have not been reviewed and approved previously by the University Committee for Research Involving Human Subjects (UCRIHS) or research involving
animal use without previous review and approval from the All-University Committee on Animal Use and Care (AUCAUC). The Graduate School will verify UCHRIHS Log numbers and AUF numbers before granting degrees.

Instructions on how to obtain approval from the UCRIHS and/or from the AUCAUC for the respective use of humans and vertebrate animals for research are available at the following websites:

UCRIHS: http://www.humanresearch.msu.edu/
AUCAUC: http://www.animalresearch.msu.edu/

**University Committee on Research Involving Human Subjects**

Federal and University regulations require that all research projects involving human subjects and materials of human origin be reviewed and approved by an Institutional Review Board (IRB) before initiation. The University Committee on Research Involving Human Subjects (UCRIHS) is an Institutional Review Board (see UCRIHS web site for more information at the following website: http://www.humanresearch.msu.edu/about_irbs.html. Under the regulations, a human subject of research is an individual (1) from whom an investigator obtains data by interaction or intervention or (2) about whom the research obtains confidential information.

**All-University Committee on Animal Use and Care**

Michigan State University policy requires that use within the institution of living vertebrate animals (includes laboratory rats and mice, etc.) be reviewed for appropriateness by the All-University Committee on Animal Use and Care (AUCAUC) before use of these animals commences. This pertains to all university owned animals, including client-owned animals used in research, and animals studied undisturbed in their natural habitat. For general reference, the publication that details the standards to which the university conforms is the NIH Guide for the Care and Use of Laboratory Animals. Departure from this published guideline requires written scientific justification in the animal use form. Principal investigators and course directors must obtain approval from the AUCAUC, phone 353-5064, before initiating any research, testing, or instructional project involving the use of vertebrate animals.
IX. STUDENT CONDUCT AND CONFLICT RESOLUTION

Ethical Standards

The Comparative Medicine and Integrative Biology Program is based in the College of Veterinary Medicine. As such, its members are expected to uphold and practice the standards of professional conduct as set by the veterinary profession. These include the use of scientific knowledge and skills for the benefit of society through the protection of animal health, the relief of animal suffering, the conservation of livestock resources, the promotion of public health, and the advancement of medical knowledge. It demands that its members practice the pursuit of scientific truths conscientiously, with dignity, and in keeping with the principles of veterinary medical ethics. It recognizes that continual improvement of professional knowledge and competence is a lifelong commitment. As our graduate students are biomedical researchers, we expect them to be cognizant of the ethical considerations involved in all aspects of research, not only during formal course and seminar work, but in all aspects of their research.

Examples of unprofessional conduct include, but are not limited to:

a. Falsification, fabrication, or fraudulent use of research data.
b. Abuse, neglect, or improper care of any animal.
c. Conviction in a court of competent jurisdiction on any charge involving moral turpitude.
d. Intoxication by alcohol or other mood-altering drugs or compounds in or on the buildings and grounds of the College of Veterinary Medicine.
e. Falsification, fraudulent use or misuse of application materials or forms used by CMIB for admissions, evaluation of performance, or evaluation of conduct.
f. Giving or receiving aid on an examination, except as specifically permitted by the instructor.
g. Plagiarism.
h. Verbal or physical abuse of faculty, staff, clients, or students.
i. Disruption of class by loud, obnoxious, or disrespectful behavior.
j. Removal of any exam from the examination room without the professor's consent.
k. Violation of the university rules and regulations.
l. Sexual harassment

Dishonesty in academics or unethical conduct on presentation of research are grounds for dismissal from the program. Should a decision to terminate a graduate student be made, the affected graduate student shall be notified in writing. All information regarding the decision is to be held in strict confidence between the student and faculty with responsibility for the student; release may be only with the written consent of the graduate student involved unless the decision becomes the substance for a grievance procedure, in which case such information shall be released to the grievance committee. The same privacy is to be accorded the reasons for a graduate student's temporary or permanent withdrawal from the university.

Conflicts Resolution, Grievances, and Appeals

The university has established a judicial structure and process for hearing and adjudicating alleged violations of recognized graduate student rights and responsibilities. The first venue to resolution of such conflicts informally or formally rests within the department. It is the responsibility of the CMIB Director to assist students in resolving problems in a timely and efficient manner.
a. Many difficulties can be resolved by communicating in a direct and sincere manner with the individual(s) involved. The program encourages all students to consider meeting with their advisor and/or guidance committee for advice in resolving conflicts.

b. If the situation is not resolved, or if the student is uncomfortable addressing the issue with the advisor, she/he should contact the CMIB program director.

c. The CMIB director may form an ad hoc committee to evaluate the situation and resolve issues.

d. The student may also seek advice from the university ombudsman (http://www.msu.edu/unit/ombud) and also follow the grievance and appeals procedures outlined in Section 5 of the Graduate Student Rights and Responsibilities document (http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities).

Change of Major advisor

Changes in the student’s and/or the advisors research interests and or changes in the dynamics of the mentor/graduate student relationships may arise. In such cases, the student and/or the major advisor can request a change in the assignment of the major advisor and may request such a change from the program director in writing.

If the student is in good academic standing and making progress in his/her research, the program director will facilitate the establishment of another major advisor. However, the CMIB program cannot guarantee the availability of another major advisor, and the student may need to discontinue the program.

Special attention will be given to the resolution of conflicts between a graduate student and his/her advisor. The program director will serve as a mediator to evaluate the situation and may ask the student and faculty member to seek assistance from other university resources such as the Office of the Ombudsman, the MSU Counseling Center, or the dean of The Graduate School.

X. WORK-RELATED POLICIES

Criteria for Awarding, Renewing, and Terminating Graduate Assistantships

Graduate Assistantships

Graduate assistantship is a generic term referring to financial support of graduate students that results in a stipend and compensation and for which performance of defined duties is expected. Specific graduate assistant appointments are made in one of three categories: research assistants, teaching assistants represented by the Graduate Employees Union (GEU), and teaching assistants not represented by the GEU. The CMIB program offers only research assistantships at this time. These are awarded on a competitive basis. Graduate assistants must be actively pursuing degree programs and making satisfactory progress toward their degree. Most students receive an a half-time appointment, reflecting the fact that the program anticipates that they will concentrate on their course-work 50% of their time and have research assistantship duties as defined by their advisor.
The academic year encompasses two appointment periods: August 15-December 31 and January 1-May 15. During each appointment period a graduate assistant’s responsibilities require an average of 10 hours per week for a quarter-time appointment, 20 hours per week for a half-time appointment, and 30 hours per week for a three-quarter-time appointment. Summer appointments cover the intervening period but the distribution of duties may vary. Anticipated distribution of duties over the weeks of a semester should be communicated to the graduate assistant by the appointing unit at the time of appointment.

Research and Teaching Assistants

The following levels of assistantships exist for research assistants and teaching assistants:

(a) Graduate Assistants, Level 1: These graduate students have the bachelor’s degree and have less than one year’s experience as graduate assistants or a full-support fellows. They teach, do research, or are assigned such supervised assistant’s duties as reading and grading papers.

(b) Graduate Assistants, Level 2: These graduate students have a relevant master’s degree, or equivalent, and/or one year’s experience as graduate assistants or full-support fellows in the appointing department or in a unit considered relevant by the chairperson of the appointing department. They teach, do research, or perform administrative tasks with moderate supervision. Advancement from Level 1 to Level 2 is usually routine.

(c) Graduate Assistants, Level 3: These graduate students have a relevant master’s degree, or equivalent, and have at least two year’s experience as graduate assistants (or equivalent experience at the faculty level) in the appointing unit or in a unit considered relevant by the chairperson of the appointing unit. They teach, do research, or perform administrative tasks with minimum supervision.

Advancement to the rank of Graduate Assistant, Level 3 is on a merit basis, with the above prerequisites being considered minimal. Within the range established for the university, the stipend depends on the qualifications of the individual and on the availability of funds in the appointing unit.

The information listed below is subject to yearly change. Please consult The Graduate School home page for the latest information at www.grad.msu.edu.

Stipend ranges for 2004-2005 for half-time annual salaries are as follows: Level 1, $14,784 to $24,624; Level 2, $15,624 to $26,352; Level 3, $16,344 to $36,216. Checks are distributed on the 15th of the month. Graduate assistants at any of the three levels may be appointed on a quarter-time, half-time, or three-quarter-time basis with an appropriate adjustment in the stipend. Changes in level, stipend, or percentage of time become effective only at the beginning of a semester. Additional benefits, even though the graduate student does not enroll for 10 credits or more, include the following:

(1) Tuition Waiver: Tuition waiver in the amount of 9 credits for Fall semester, 9 credits for Spring semester, and 4 credits for summer session. The tuition waiver will be provided during the period of the assistantship, to a maximum of 22 credits per year.

(2) Exemption from Out-of-state Resident Tuition: This exemption applies to a summer session that precedes or follows an appointment for an entire academic year, regardless of whether the student was previously enrolled at MSU. If the student does not have a signed graduate assistantship form before registering for summer session, he/she will pay out-of-state resident course fees and tuition. Upon receiving a copy of the appointment form for the entire academic year through the middle of the semester of the subsequent Fall semester, the Office of
the Registrar will refund the full amount of out-of-state tuition that the student paid for the summer session.

(3) Matriculation and Support Fees: Matriculation and infrastructure/technology support fees are waived.

(4) Health Insurance: Graduate assistants (domestic and international) are automatically enrolled in a health insurance plan, the premium of which is paid by the University. The plan provides the following coverage:
   (i) Fall appointment only—coverage from August 15 to February 14 of the following year.
   (ii) Fall and Spring appointments—coverage from August 15 to August 14 of the following year.
   (iii) Spring appointment only—coverage from January 1 to August 14.
   (iv) Summer appointment only—coverage from May 15 to August 14.
Enrolled students may also insure their eligible spouse and/or dependent children (residing with the insured). For questions regarding coverage, enrollment or premium payment, contact The Chickering Group directly at 1-800-859-8452.

For questions concerning waiver processing or general information, contact the MSU Benefits Office at (517) 353-4434 or (800) 353-4434. The Benefits Office is located at 1407 S. Harrison Road, Suite 140A (Nisbet Building), East Lansing, MI 48823 and on the web at MSU Benefits Office, http://www.hr.msu.edu/benefits/; Aetna Health Insurance at http://www.aetnastudenthealth.com/.

**Stipends and Additional Benefits, Other Information**

• Library privileges, intramural and recreative facilities privileges, and eligibility to Michigan State University Federal Credit Union.
• Eligibility for student discounts on football, basketball, and/or hockey season tickets for themselves and their spouses.
• Eligibility for free admission to other regularly scheduled MSU athletic events when presenting a valid student ID card.
• Eligibility for student discounts on series tickets to professional performing arts events at the Wharton Center for Performing Arts, including one guest ticket at the student rate.
• Exemption from payment of the Social Security tax on the stipend. Stipends are subject to income taxes with few exceptions. The taxability of stipends is subject to review by the IRS. Please call the Payroll Office for more information (355-5010). Please note that tax laws are subject to continuing revision and students should verify their tax liability each year.

**Registration and Credit Load Requirements**

Most fellowships require full-time pursuit of a graduate program. Unless the fellowship carries specific requirements for determining eligibility, the department or school is responsible for determining and certifying the full-time status of the student. All predoctoral graduate fellows paid through the University must be registered during the period for which payment is made.
Other Sources of Funding

Graduate School Dissertation Completion Fellowships

These fellowships allow students to devote full time to writing the doctoral dissertation. Stipend is $6,000 for the semester. This fellowship program is for students in the final months of their programs. About 25 fellowships are awarded each year. Application must be made directly to the department or college.

Graduate School Incentive Fellowships

To encourage a greater number of Michigan State University graduate students to apply for national fellowships, The Graduate School has established a Graduate School Incentive Fellowship program for which students can compete if their initial applications for outside fellowships prove unsuccessful. One Incentive Fellowship will be awarded each semester. Contact The Graduate School for more details.

Sponsored Fellowships

Fellowships sponsored by industries, foundations, and government agencies are available to high achieving students for graduate study in various departments or college as Michigan State University. These fellowships are awarded through individual departments or colleges. Information on available fellowships and the procedure for applying may be obtained by writing to the department or college concerned.

University Distinguished and University Enrichment Fellowship Program

The Graduate School offers fellowship programs that provide financial support for outstanding students who plan to enroll in a doctoral or master of fine arts program.

CMIB-Specific Funding Information

The CMIB program actively seeks fellowship support for all its qualified students and makes them aware of opportunities to compete for internal and external fellowships. Most first-year graduate student assistants are provided directly through the CMIB program. Support of the PhD student in the form of research assistantship is the responsibility of the major advisor and the graduate student. Assistantship appointments are made on a semester basis. Before the end of each semester, the student and major advisor must make sure that assistantship appointments are renewed in a timely manner, provided that the student is in good academic standing and is making satisfactory progress in his/her research. The progress of the student is evaluated by the major advisor and his/her guidance committee. If the student is judged not to be making satisfactory progress, the fellowship can be terminated.

Policy for Graduate Assistant Leave and Expectations about Vacations and Leave to Attend Professional Meetings

All students should be actively engaged in research, literature reviews, or some other phase of the doctoral program even during semester breaks. CMIB graduate study is a "full-time" program. Specific times in the lab and vacation schedules are to be arranged between the CMIB graduate student and his/her major advisor, or between the student and the program director until a major advisor is identified or when a major advisor is not available.
A graduate assistant unable to fulfill the duties of his/her appointment because of illness or
injury shall notify an administrator of his/her major unit as soon as circumstances permit. Similarly, a graduate assistant unable to fulfill the duties of his/her appointment because of
pregnancy shall notify the Program Office and the major advisor as soon as circumstances
permit.

During the illness, injury, or pregnancy the major unit shall adjust (reduce, waive, or
reschedule) the graduate assistant's duties as those duties and the assistant's physical
circumstances reasonably dictate. If total absence from duties becomes necessary, the major unit
shall maintain the stipend of the appointment, provided the graduate assistant is still enrolled, for
a period of two months, or to the end of the appointment period or of the semester, whichever
should occur first.

The graduate assistant shall have the right to return to the assistantship, within the original
terms of the appointment, at such time as he/she is able to reassume the duties of the position.

Graduate students, including those with graduate assistantship, are encouraged to attend
professional meetings which are directly related to their research and training. Graduate students
should seek permission from their major advisor and the program director to leave for such
meetings. Appropriate arrangements must be made to take care of responsibilities of the graduate
student during such an absence from the laboratory. These include matters such as upkeep of
equipment, animal care, tissue culture and experimental protocol details that need to be
continued during such an absence. These aspects should be discussed and agreed upon by the
advisor and the graduate student. The program director may be consulted to facilitate an
agreeable plan.

Neither the program nor the graduate advisor has the responsibility to cover the student’s
trade and registration expenses. However, when possible, students presenting their work may be
supported through research and other funds available.

**Vacation**

Graduate assistants appointed for 12 months are expected to be on campus and actively
pursuing graduate education for at least 11 months. Breaks between semesters, if taken, are
considered part of the annual vacation.

**Work in Absentia**

Candidates for the doctoral degree may, with the approval of the major advisor and guidance
committee members, conduct some work in absentia. Arrangements for registration may be made
by applying at the Program Office.

**Policy Regarding Outside Work for Pay**

The demanding nature of graduate studies requires that students focus on their studies and
research, and most graduate students hold 50% appointments as graduate research assistants in
the program. However, under certain circumstances, graduate students may hold other jobs for
pay as long as they are in good academic standing and making good progress in their research
project. International students usually cannot be employed off-campus and are strongly advised
to seek guidance from the OISS when considering any offer for outside work for pay. All
graduate students should be aware of and discuss any potential for conflict with their major advisor and ensure that intellectual property is not shared with an outside employer and that their employment does not represent a conflict of interest. Further information can be obtained from The Graduate School and the Ombudsman (include links).

**Use of Departmental Resources**

**Telephone**

For on-campus calls there is no charge. Other calls related to research should be charged to the major advisor's grant or to the home department, upon agreement with the major advisor.

**Departmental Copiers**

With approval of their major advisor, students may use departmental copy machines to make copies pertinent to their research and charge them to an account they are authorized to use by their major advisor.

**Mail**

As soon as a CMIB graduate student has selected a major advisor, regular mail will be sent to the student in care of the major advisor. Campus mail is designed to expedite the delivery of items pertaining to university business. It is not to be used for personal items. Students may not receive personal mail/packages at their university address.

**Fax Machines**

Departmental fax machines are to be used with approval of the major advisor and may not be used for personal reasons.

**Student Travel Policy**

Most of the questions about travel are centered on insurance and are compounded by confusion regarding three terms: 1) Authorization; 2) Automobile Liability Insurance; and 3) Travel Accident Insurance.

Authorization for travel needs to be completed before departure. The travel authorization part of the Travel Voucher should be submitted and approved. The form provides evidence that the traveler is on University business and may be critical in the event of an insurance claim, worker's compensation claim or other litigation. These forms are available from the CMIB Program Secretary.

Automobile Liability Insurance is essentially "public liability and property damage" insurance. It protects the driver and/or owner of an insured vehicle against charges filed by other persons, but it does not provide medical benefits for the driver or passengers. The university carries liability insurance on all university-owned vehicles when driven by authorized persons.

Travel Accident Insurance provides coverage for accidental death or dismemberment while traveling on authorized university business. Coverage is extended to employees excluding employees on leave, student employees and graduate assistants.

Given the above definitions, university policy and regulations regarding student travel may be summarized as follows (MSU Travel Regulations, July 1994): Graduate students may be
authorized to travel on university business and may be reimbursed for such travel. In addition, they may be assigned and may drive university vehicles on authorized trips. When driving university vehicles, they are protected by liability insurance but not medical coverage. Many students already have hospitalization and accident insurance of some sort. Students who travel for the university and who have dependents should be sure they are adequately insured.

**Foreign Travel**

CMIB program students who plan to travel to a foreign county on Michigan State University activities should consider the following issues: (1) Contact the Olin Health Center Travel Clinic at least three months in advance of your date of departure. Travel to particular countries may require one or more vaccinations or boosters. In addition, the travel clinic nurse will review potential health hazards, travel problems and restrictions for each country. (If you are traveling for pleasure, you are also welcome to use the Olin Travel Clinic) (2) If you intend to pursue a research project in another country you should have permission from the appropriate governmental agency in that country. For some countries it may take up to one year to obtain approval. (3) If you intend to bring plant or animal tissue samples or DNA/RNA back to the United States you are likely to need approval from the U.S. Department of Agriculture or from the Centers for Disease Control. Be sure to obtain proper letters of authorization to bring biological samples back to the United States. (4) Obtain Michigan State University travel authorization through the CMIB Program Office, (5) Obtain the proper pharmaceuticals to take with you in case of an emergency. These might include, for example, small packets of dehydration salts if you have experienced excessive fluid loss, appropriate antibiotics in case of food-poisoning or an infected wound and anti-malarial/preventative medication. Be aware that in some countries possession of illegal drugs is a death sentence. (6) Request from Michigan State University through the CMIB Program Office the free medical emergency evacuation insurance at the time you apply for Michigan State University travel authorization. This insurance will cover the cost of your evacuation to an appropriate medical facility if you are ill or have had an accident.

It is also helpful to talk with other people who have spent time in the country you intend to visit to get a sense of the customs, food-related problems, the medical care, travel arrangements, and safe and unsafe personal activities.

**Class Attendance**

Class attendance is an individual student responsibility, priority and requirement. Students are required to attend all classes, laboratories and rotations, and to complete all assignments. Instructors are expected to give adequate notice of the dates on which major tests will be given and assignments will be due. Pop quizzes are given at the discretion of the instructor. Students may request excused or authorized absences according to the policies and definitions in this Handbook. The instructor is under no obligation to provide an authorized absence or the opportunity for the student to make up work missed because of an unexcused absence or unauthorized absence.

**Excused Absence**

Excused Absence. An excused absence is granted through the Office of the Dean. Notices of excused absences are sent to instructors.
Death or major illness in a student's immediate family.

Illness of a dependent family member.

Participation in legal proceedings or administrative procedures that require a student's presence.

Religious holidays. Requires advance notice by the student.

Illness that is too severe or contagious for the student to attend class (documentation from a physician may be requested and **documentation from a physician is required** for missing a major or final examination.)

Required participation in military duties.

**Authorized Absence**

A student may request an authorized absence (reasons other than those listed for excused absences) from a class by seeking the permission of the individual instructor(s) teaching on the days requested **10 days in advance and acquiring appropriate signatures on the authorized absence forms**. These forms must be filed in the CVM office of the associate dean for research and graduate studies by the student. The instructor may refuse to permit an authorized absence. If the instructor permits the authorized absence, the instructor must provide only make-up quizzes or tests. The student is responsible for all information or exercises that are missed during the absence and the CMIB program has no obligation to make any special provisions.

**Extended Absence**

Absence of a student, for any reason, for 30 or more consecutive calendar days or for 30 percent or more of any course, whichever is less, during any phase of the graduate program will constitute withdrawal, and the student must petition for readmission into the program. Exceptions to this policy may be granted for fourth-year students by the associate dean for academic programs.

Absence of less than 30 consecutive calendar days or of less than 30 percent of any course will be handled by the head of the department involved or the associate dean for academic programs in the case of VMID courses.

**Special Information for Foreign Students**

Michigan State University is authorized under immigration regulations to enroll nonimmigrant alien students. The CMIB Program welcomes applications from foreign students. When a foreign student receives the formal application packet, he/she should complete all forms and return them via air mail, if possible, to the CMIB Program Office, 2240 E Biomedical Physical Science Building, Michigan State University, East Lansing, MI 48824-1101 approximately ten to twelve months before the anticipated enrollment date.
English Language Proficiency

All foreign applicants are required to be proficient in English as a condition for regular admission to Michigan State University. Applicants whose first language is not English will be required to demonstrate their proficiency by meeting certain minimum standards on the TOEFL exam: Test of English as a Foreign Language (TOEFL) (Educational Testing Service, Box 899, Princeton, New Jersey 08549, USA). MSU requires the following scores:

For regular admission:
- Internet-based test: score of 79 with no subscore below 17
- Paper-based test: score of 550 with no subscore below 52

For provisional admission:
- Internet-based test: 45-78
- Paper-based test: 450-549

The official report must be sent directly from the Educational Testing Service.

DS-2019 Form

After a foreign applicant is admitted to the CMIB Program and the application fee is received, a DS-2019 form will be sent by the Michigan State University Office of Admissions and Scholarships. No prospective international student should plan to enter the United States before receiving both a certificate of acceptance and an DS-2019. It will be necessary to present the DS-2019 upon application for a student visa, and again upon arrival in the United States.

Students who enter the United States with a Form DS-2019 from another institution should be aware that they must enroll at that school before they are eligible to transfer to Michigan State University. Such transfers require both formal admission to the university and approval of the U.S. Customs and Immigration Service. More information regarding international student admissions can be found at the following web page of the Office of International Students and Scholars: http://www.isp.msu.edu/OISS/.

Office for International Students and Scholars (OISS)

The Office for International Students and Scholars (OISS) serves international students and foreign faculty. OISS is a resource center for information and consultation on matters related to the international student and faculty/scholars. The staff is prepared to help in any of the various areas of concern, including academic problems, immigration questions, social health, employment or financial matters. The office also organizes seminars and workshops on topics of interest to the broad university community. These have included immigration regulations, cross-cultural communication, pre-departure programs for graduating students and various training programs. The OISS is located in 103 Center for International Programs, MSU, East Lansing, MI, 48824-1035, (517) 353-1720, email: oiss@pilot.msu.edu. The OISS web site is located at http://www.isp.msu.edu/OISS/.

Health Insurance

All international students must be covered by health insurance for themselves and accompanying dependents. Proof of coverage must be provided before registration and enrollment.

All CMIB Program graduate students receiving a graduate assistantship will be provided, at no charge, with health insurance. Those with a Fall Semester assistantship are provided six months of coverage, beginning August 16. A Spring Semester reappointment extends health
insurance benefits for an additional six months. Spring Semester only appointments include health insurance coverage beginning January 1 through Summer Semester (August 15). A graduate assistant may also purchase health insurance for eligible spouse and dependent children. For a plan brochure and spouse/dependent enrollment form, contact MSU Human Resources/Benefits, 140 Nisbet Building, 517.353.4434, ext. 536.

**Orientation**

An orientation program provided by the Office of International Education Exchange at MSU is required for all new international students. Some of the issues discussed are U.S. education system, legal issues, campus and community resources, extracurricular, social and educational opportunities and registration procedures. The orientation is usually one week long and is held prior to the beginning of the student's first semester.

In addition, all new CMIB Program graduate students will have a meeting with the Director of the CMIB Program and attend the orientation program for all CMIB students.

**Support Services**

The Office for International Students and Scholars has organized a group of nationality clubs that the international student may join. A list of the names and phone numbers of the officers of each club is available from the OISS.
XI. UNIVERSITY RESOURCES

Academic Facilities

Student Services

Michigan State University provides extensive student personnel services to assist students and enhance the educational experience. Michigan State University recognizes that the total development of the individual, personal, social, and physical, as well as intellectual is of equal importance.

The Vice President for Student Affairs and Services has general administrative responsibility for all student personnel matters. The multiple services and responsibilities are carried out through the offices of Coordinated Minority Student Programs, Counseling, Financial Aids, Intramural Sports and Recreative Services, Placement Services (including Student Employment and the Career Information Center), Student Life, and University Housing Programs.

The Student Life area includes Campus Life Orientation, Health and Alcohol Education, Judicial Affairs, Off-Campus Housing and Commuter Programs, Service Learning, Student Activities, Student and Leadership Development, and Student Withdrawals and Records.

Michigan State University Library

It is strongly suggested that you take advantage of the library tours in order to more thoroughly familiarize yourself with all the available resources. There are many branch libraries on campus. Consult Spartan Life or the MSU Libraries web site at http://www.lib.msu.edu/.

Computer Center

User Services

Telephone numbers:
353-1800 Computing Information Center
353-1800 Mainframe/Host Access Support Services
353-4599 Microcomputer Support Services/Store

User Services offers consulting help on canned statistical programs and “helps students help themselves.” It refers students elsewhere if User Services cannot offer enough assistance. User Services is intended to help students solve computer related problems, not to complete entire projects for the student. There is no charge for the consulting service. Graduate student consultants from the Department of Statistics and Probability are available on an appointment basis about ten hours a week. They consult about design problems, appropriate statistical design, etc. There is no charge for this service. A number of short courses are offered through User Services, including a basic introduction to the computer, and discussion of collection and coding of data, offered at the beginning of the term.

Programming Service

Telephone 355-4684

This is a professional group that charges professional fees for computer work. They can offer some statistical help although they are limited in this area. They can do just about any computer programming work. The student will be given an estimate of charges which student must approve before job is performed.
Other Computer Facilities

Microcomputer facilities are available on campus, including laboratories in the Human Ecology and Union Buildings. Policies regarding use of equipment should be obtained from individual facilities.

Bookstore

The MSU Bookstore is located in the International Center on Shaw Lane (http://www.spartanbook.com/). Off-campus bookstores are located in the East Lansing area.

Learning Resources Center

209 Bessey Hall, 355-2363

This is a self-paced, individualized learning center that offers free assistance to students who want to improve their study skills. Its goal is to help you develop the strategies and techniques you need to be successful student. Workshops on specific study skills are offered throughout the year.

Service Learning Center

26 Student Services Bldg., 353-4400

This is a volunteer program that provides students the opportunity to learn more about different work environments while providing community service. Staff are available to assist students in choosing a placement that meets their interests.

The Writing Center

300 Bessey Hall, 432-3610

This center offers writing consultation to graduate as well as undergraduate students. One on one consultations are best for small papers or projects like vitas, abstracts and cover letters, while peer response writing groups offer help developing drafts of larger projects like research and conference papers, and even theses and dissertations. The center also has a library with books on resumes, vitas and cover letters, and examples of all of the above. Call 432-3610 to make an appointment, or email grammar@msu.edu for grammatical questions.

Career Development and Placement Services

113 Student Services Bldg., 355-9510

The Career Development and Placement Services office assists students in career advising and seeking employment upon graduation. Their office is located in 113 Student Services Building and can be contacted at 355-9510. Their staff does workshops, classes and individual advising on topics such as how to interview successfully and steps to creating a well-written resume. You may also interview for internships or full-time employment through the Career Placement office. More information can be found in 113 Student Services Building.

*The Career Information Center, located in room 6 Student Services Bldg (353-6474) provides up-to-date information on career possibilities, self-evaluation tools, and resource material on career choice, planning and strategy.
CIC Traveling Scholar Program

MSU is a member of the Committee on Institutional Cooperation. Through this committee's traveling scholar program a doctoral student can take a limited number of courses at any Big Ten University or the University of Chicago. Participants in this program normally pay tuition at MSU at MSU rates for courses taken at other participating institutions. A doctoral student interested in this program should contact the Office of The Graduate School (355-0300) for instructions and formal processing.

Health Facilities

Health Insurance

Michigan State University and the Council of Graduate Students worked together to offer graduate assistants coverage beginning Fall Semester 1994. “Student only” coverage will be automatically provided, at no cost to graduate assistants. Michigan State University will provide a full twelve months of coverage if your appointment is at least nine months. Those with a Fall Semester assistantship are provided six months of coverage, beginning August 16. A Spring Semester reappointment extends health insurance benefits for an additional six months. Spring Semester only appointments include health insurance coverage beginning January 1 through Summer Semester (August 15). If you wish to enroll your legal spouse and/or dependent children, please contact the MSU Benefits office. The website for MSU student health insurance is http://www.hr.msu.edu/benefits/studenthealth/.

Resource Center for Persons with Disabilities (RCPD)

120 Bessey Hall, (517) 884-RCPD (4-7273); TTY: (517) 355-1293; Fax: (517) 432-3191. The mission of the RCPD is to lead Michigan State University in maximizing ability and opportunity for full participation by persons with disabilities. The function of the RCPD is to 1) assess and document disability, academic, and workplace needs; 2) build and facilitate individual plans for reasonable accommodations; 3) link individuals with technology, education, and resources; and 4) extend independence through auxiliary aids, disability-related information, and self-advocacy.

Counseling Center

http://www.counseling.msu.edu/
Main Office, 207 Student Service Building 355-8270
344 Olin Health Center (for off campus students) 355-2310
Multi-Ethnic Counseling, 207 Student Services Bldg. 355-8270

Students should feel free to contact the Counseling Center for personal concerns and crisis. Professional counseling and psychological services are offered to assist with personal, as well as career concerns. All services are confidential. Initial consultations are free of charge; all services are free to students carrying 7 or more credits. In addition to professional counseling a self-management laboratory, and workshops are offered.
Olin Health Center  
http://olin.msu.edu/  
355-7573  
The Student Health Service is located in Olin Health Center. In the event of an emergency, no matter what time of day, go directly to Sparrow Hospital, St. Lawrence or Michigan Capital Medical Center if possible. Otherwise go to the nearest emergency center.

Women's Resource Center  
http://wrc.msu.edu/  
353-1635  
The Women's Resource Center serves as a referral service and advocate of women's issues for women faculty, staff and students. They sponsor many campus programs and workshops on women's issues.

Recreational Sports and Fitness Facilities  
http://recsports.msu.edu/  
355-5250  
Intramural Sports & Recreational Services-205 IM Sports West  
Students have access to equipment and facilities in the intramural facilities located in the IM-West, IM-East, and IM-Circle. Students must present a current MSU student ID and a picture ID in order to be admitted to these facilities and borrow the equipment. Use of most of the facilities is free to currently enrolled students, although there are a few exceptions, such as a small charge for the use of the weight room in the IM-East.

Transportation and Parking on Campus  

Parking on Campus  
Any vehicle you bring on campus must be registered through the Department of Public Safety. Required student registration of motor vehicles can be done through the Department of Public Safety's Office for Parking and Permits (517) 355-8440 between the hours of 7:30 a.m. and 6:00 p.m. Generally, students with assistantships are eligible to obtain parking permits which allow parking at several lots throughout the campus. Graduate students without assistantships have permits allowing them to park in commuter lots on the outer edge of the campus. To obtain a parking permit the applicant must present their vehicle registration, student ID, drivers license and, if appropriate, last year's gate card.

If you do not have a graduate assistantship, you may, under special circumstances, qualify for a parking permit. For example, if your vehicle is necessary in performing the duties for a job you hold on campus, you may wish to apply for a parking permit. You will need to go to DPS and fill out a Special Request form for a parking permit. A member of the staff of DPS will review your request and if they feel you need a parking permit for campus they will give you the opportunity to buy one.

The Department of Public Safety, Parking Division, can be contacted at 355-8440 to answer any further questions. Their web site is http://police.msu.edu/parkingoffice.asp.
**Buses**

MSU buses serve all parts of the campus and connect with CATA routes serving the Lansing and East Lansing area. Route information can be found at the CATA web site at [http://www.cata.org/](http://www.cata.org/)

**Bicycles**

The University maintains bicycle racks throughout the campus. Bikes should be locked to these racks when parked. Bikes are not permitted in campus buildings. Improperly parked bikes are subject to impoundment by the Department of Public Safety. Bicycle registration through the MSU Department of Public Safety or the cities of East Lansing or Lansing is required. A 4-year MSU bike or moped registration may be purchased for $2.00 from the Department of Public Safety.

**Graduate Student Organizations**

**MSU/Graduate Employees Union (GEU)**


**Council of Graduate Students (COGS)**

COGS is the official graduate student organization at Michigan State University. Officers and departmental representatives (one representative per department for the entire University) are voting members. The primary objective is improvement of the academic, social, and economic position of graduate students at MSU. The organization has official delegates to the Graduate Council, the Academic Council and standing committees thereof, and several all-university and presidential committees. Through membership in these and other bodies, COGS participates in decisions on such matters as tuition and fees, the grading system, traffic regulations, academic and extracurricular programs of the university, graduate assistant stipends, improvements in on- and off-campus student living conditions, academic freedom and responsibilities, student representation in university government, and the selection of principal administrative officers. Meetings are open to all graduate students. For further information, contact the department for the name of your representative. Check out the COGS web site at [http://cogs.msu.edu/](http://cogs.msu.edu/).

COGS offers a wide range of services and programs to graduate level students including the following:

**MSU Student Food Bank**

COGS and ASMSU jointly established a Student Food Bank to address the problems of students and their families with financial hardship. The SFB is located at Olin Health Center, and hours are 5:30 to 7:30 p.m. on Thursday evenings. Students may visit bi-monthly. For more information, or to volunteer, stop by the office (320 Student Services) or call 353-2898.

**Copy Center**

Open to all members of the MSU community, the COGS copy center features the lowest rates available.
Legal Aid

COGS and ASMSU have joined together to provide a wide range of legal services to MSU students. This service is free to all graduate-level students. Student Legal Services is located in 329 Student Services Building. These services are funded through student taxes and activity fees. This plan enables students to consult a staff attorney on most legal matters such as landlord/tenant problems, small claims, traffic offenses including speeding and drunk driving, and minor criminal/civil matters. For more specialized needs, students are referred to area attorneys. The Student Defender Division of legal services provides students with advice regarding University regulations, judiciary programs, and any other type of para-legal help necessary to resolve intra-university problems. Due to the large number of phone calls and potential problems, no legal advice of any kind will be given over the phone. An appointment can be made by calling 353-3716 or in person at the office during the hours of 8:00 am-12:00 noon and 1:00 pm-5:00 pm.

Short-Term Loans

COGS offers short term loans of $100 and $250 (which are administered through ASMSU and the Office of Financial Aid). The loans are interest free for 30 and 60 days, respectively.

Endowment Fund

COGS offers conference and degree completion grants. Please visit the COGS website at www.msu.edu/~cogs/ for an application and guidelines.
XII. IMPORTANT LINKS

- Academic Programs Catalog
  http://www.reg.msu.edu/academicprograms/

- Graduate Students Rights and Responsibilities (GSRR)
  http://grad.msu.edu/gsrr/docs/GSRR-2010.pdf

- MSU/GEU Contract
  http://geuatmsu.org/geu-proposals/

- Guidelines for Graduate Student Advising and Mentoring Relationships
  http://grad.msu.edu/publications/docs/studentadvising.pdf

- Guidelines for Integrity in Research and Creative Activities
  http://grad.msu.edu/publications/docs/integrityresearch.pdf
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