Cancer Biology Graduate Program

McArdle Laboratory for Cancer Research
University of Wisconsin-Madison

2015-2016
Student Handbook
# I. PROGRAM OVERVIEW

PhD Timeline

# II. NEW STUDENTS

NetID/Wiscmail  
Wiscard  
Bus Pass  
International Student Services

# III. ORIENTATION

# IV. ROTATIONS

Choosing Rotations  
Choosing an Advisor

# V. CURRICULUM REQUIREMENTS

Core Curriculum  
Elective Course List/Descriptions  
Minor  
Grades/Satisfactory Progress  
Master’s Degree  
Seminar Requirements  
Other and Professional Development

# VI. REGISTRATION

Registration Requirements  
Dissertator Status

# VII. PROGRESS REQUIREMENTS

Curriculum Certification (Year 1)  
Prelim Exam (Year 2)  
Annual Committee Meeting (Year 3+)  
6-Month Semifinal Report  
Dissertation Defense (Final Year)

# VIII. GRIEVANCE PROCEDURES

# IX. FINANCIAL INFORMATION

First Semester  
Research Assistant: Stipend, Tuition, Fees, Taxes  
Fellows/Trainees: Stipend, Tuition, Fees, Taxes

# X. HEALTH & WELLNESS

Health Insurance/Benefits  
University Health Services (UHS)  
Disability Information  
Mental Health Resources  
Recreational Facilities

# XI. LAB SAFETY

Biosafety Training Courses

# XII. McARDLE BASICS

Conference Room Reservations  
Department of Oncology Email List

# XIII. PROGRAM CONTACTS
I. PROGRAM OVERVIEW

This handbook is intended for graduate students who are pursuing a Ph.D. Degree in Cancer Biology at the University of Wisconsin-Madison. The Cancer Biology Graduate Program is an interdepartmental program administered at the McArdle Laboratory for Cancer Research (also known as the Department of Oncology) in the School of Medicine and Public Health. The Cancer Biology Program consists of over 50 trainers that span multiple departments across UW-Madison.

The UW-Madison Graduate School is the ultimate authority for granting graduate degrees at the University. The Graduate School’s Academic Policies and Procedures provide essential information regarding general University requirements (https://grad.wisc.edu/acadpolicy/). The policies in this handbook provide additional information specific to the Cancer Biology Program.

Degrees and course requirements may change over time. Students are required to meet the degree and course requirements in effect when they entered the program. Administrative procedures and processes may also change over time. Students are required to follow the procedures and processes listed in the most current handbook.

If you have any questions about the policies or guidelines outlined, please contact the Cancer Biology Program Coordinator. For the current version of this handbook, please visit the Cancer Biology website: http://cancerbiology.wisc.edu

PhD Timeline

YEAR 1

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participate in Orientation activities</td>
<td>End of August</td>
</tr>
<tr>
<td>Register for Fall semester courses and 990 research credits</td>
<td>By August 31</td>
</tr>
<tr>
<td>First day of classes</td>
<td>September 2</td>
</tr>
<tr>
<td>Lab Rotation 1</td>
<td>~September</td>
</tr>
<tr>
<td>Lab Rotation 2</td>
<td>~October</td>
</tr>
<tr>
<td>Lab Rotation 3</td>
<td>~November</td>
</tr>
<tr>
<td>Begin in new lab</td>
<td>Early December</td>
</tr>
<tr>
<td>Register for spring classes and 990 research credits</td>
<td>By beginning of Spring semester</td>
</tr>
<tr>
<td>Establish a Certification Committee consisting of 5 faculty members</td>
<td>By May 31</td>
</tr>
<tr>
<td>Schedule the first committee meeting (notify Coordinator of date), complete meeting and submit form</td>
<td>By August 31</td>
</tr>
</tbody>
</table>
YEAR 2

<table>
<thead>
<tr>
<th>Present in Cancer Biology Student/Postdoc Seminar Series</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete all major coursework requirements (and minor coursework, if applicable)</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Schedule Preliminary Exam and notify Coordinator of the scheduled date (at least three weeks in advance), complete Prelim Exam and submit paperwork</td>
<td>By August 31</td>
</tr>
</tbody>
</table>

YEAR 3 AND BEYOND

<table>
<thead>
<tr>
<th>Present in Cancer Biology Student/Postdoc Seminar Series</th>
<th>Fall or Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule Committee Meeting (notify Coordinator of date), complete meeting and submit form</td>
<td>By August 31</td>
</tr>
</tbody>
</table>

FINAL YEAR

| Schedule Semi-Final Report approximately 6 months prior to Dissertation Defense and submit form |
| Schedule Dissertation Defense and notify Coordinator of date (at least 3 weeks in advance) |
| Defend Dissertation and submit necessary paperwork to Coordinator and Graduate School |

*On average, the Cancer Biology PhD Degree requires 5.5 years to complete

II. NEW STUDENTS

There are various tasks that students must complete before, or soon after, arriving on campus.

NetID

- Your NetID and password will be used to access your email account and other online services like Learn@UW and your MyUW Student Center for registration, course schedule, grades, tuition bill, etc. It is also the source of your current address for the University, so it is important that you keep your address up-to-date.
- To activate your NetID, visit [http://my.wisc.edu](http://my.wisc.edu) and click on the “Activate NetID” link. Enter your 10 digit campus ID number and date of birth.

990 Research Credits

- During rotations, you will register for 5-7 credits of Oncology 990 research with Program Co-Director, Dr. Dan Loeb. Once you have joined a lab, you will register for 990 research credits under the section of your Advisor.

Wiscmail

- After you have enrolled, you can access your Wiscmail email account using your NetID and password to login. Please notify the Program Coordinator of your new wisc.edu email address.
- If problems occur, contact the DoIT Help Desk (608-264-4357).
Wiscard
- You should obtain a UW student ID (Wiscard) after you have enrolled for classes (at least 6 credits).
- Your Wiscard can be obtained at the Union South Wiscard Office (1308 Dayton St., Rm#149) from 8:30am-5pm, Monday-Friday. You will be required to present some form of personal photo identification (e.g., a driver’s license, passport, etc.) in order to receive your Wiscard.
- A fee of $25.00 is charged for the replacement of lost or stolen cards. Any card that becomes worn or damaged through normal wear and tear will be replaced free of charge if the damaged card is surrendered.

Bus Pass
- As a UW-Madison graduate student, you are eligible for a free Madison Metro bus pass.
- You must present your valid Wiscard to receive the pass.
- Bus passes may be picked up each semester, usually the week prior to classes, at ASM Student Print (Student Activity Center, 333 East Campus Mall, 3rd Floor).

Biological Safety
- There are a variety of safety trainings that students are required to take when working in a lab on campus. Three basic online trainings are required for new students and should be completed by the start of the first rotation. See the “Lab Safety” section of this handbook for more information.

International Students
- The International Students Services Office (ISS) is the primary resource for international students on campus. The ISS office assists students and their families in maintaining their non-immigrant visa status. ISS is located in the Red Gym (room 217), 716 Langdon Street (608-262-2044), http://iss.wisc.edu/.
- All international students are required to attend a mandatory orientation through the ISS Office: http://iss.wisc.edu/students/orientation. During this orientation, visa holders will be allowed to register before starting their program. This is a requirement of the US Department of Homeland Security.
- International students must also be assigned a social security number which is necessary to work in the United States. Eligibility for a social security number depends on the type of visa that an international student holds. Visit the following website for more information: http://iss.wisc.edu/students/current-students/social-security

III. ORIENTATION

Orientation will be held at the end of August and provides incoming students with an introduction to the Cancer Biology Graduate Program. You will learn about curriculum requirements, rotations, and individual trainer research. You will also meet with Karen Schwarz and Chris Carollo-Zeuner to complete payroll paperwork and discuss health insurance/benefits. See the financial information section of this handbook for more information.

Following the rotation talks during orientation, you should set up meetings as soon as possible with faculty members of interest in order to begin the process of scheduling lab rotations.
IV. ROTATIONS

During the first semester, you will rotate in a minimum of three laboratories prior to selecting a permanent laboratory home. Each rotation will last approximately four to five weeks. It is important to take all rotations seriously; while you are evaluating the Advisor and lab to decide if it’s a good fit, the Advisor and lab are simultaneously evaluating you.

Rotations provide students with the opportunity to:
- Assess the Advisor’s mentoring style and determine if the laboratory is a good fit
- Learn more about the research projects available to students
- Get to know the members of the laboratory

Choosing Rotations:
- You are encouraged to gather information from faculty rotation talks during orientation, review faculty web pages, and review publications to help identify faculty with matching interests.
- You are advised to meet with at least six faculty members whom you are interested in rotating with in order to discuss questions or obtain more information about the lab.
- You should then arrange a suitable 4-5 week rotation period with three faculty members. Submit the “Rotation Schedule” form to the Program Coordinator, with at least the first rotation scheduled, by September 2. The first rotation should start no later than September 2.
  - Rotation 1: ~Month of September
  - Rotation 2: ~Month of October
  - Rotation 3: ~Month of November
- The goal of rotations is to provide you with a realistic glimpse into the workings of the Advisor and lab. You should immerse yourself into the daily routine of the lab and spend as much time there as possible. Doing so will give you a basis for making an informed decision when it comes time to choosing an Advisor and joining a lab in December.

Choosing an Advisor/Lab:
- All students must have a Cancer Biology faculty Advisor. The Advisor advises students about coursework, supervises the student’s research, and acts as a mentor to the student throughout his/her graduate career.
- Remember that “what you see is what you get,” i.e. your experience as a rotator is likely to reflect what it will be like once you join that lab. You should talk to the Advisor, as well as other members in the lab, in order to get a clear idea of the Advisor’s expectations, mentoring style, dynamic of the lab and intellectual environment. Some things to learn while rotating include:
  - What is the mentoring style of the Advisor? How much time did you spend interacting with the Advisor and what were those interactions like? Does he/she meet regularly with the students in the lab? Are there regular group meetings?
  - What is the intellectual culture/environment of the lab like? While in the lab, how interactive are the students?
  - Do the students in the lab publish, review manuscripts, attend scientific meetings, and participate in seminars and journal clubs?
  - How long did it take the last few students in the lab to graduate?
  - What are former students doing now?
  - What research projects would be available to you?
- You will choose your Advisor/laboratory, by mutual agreement, in early December. If you experience lab rotation difficulties or are unable to determine an appropriate lab at the end of your third rotation, please contact the Program Coordinator.
V. CURRICULUM REQUIREMENTS

The curriculum for Cancer Biology is designed to introduce you to research related to the induction, properties, and therapy of cancer and to ensure that you have the necessary background in one or more areas of related, fundamental science to enable you to do original research. Courses are drawn from the Department of Oncology as well as various related departments, including Bacteriology, Biochemistry, Biomolecular Chemistry, Chemistry, Genetics, Human Oncology, Medical Microbiology and Immunology, Pathology and Laboratory Medicine, and Pharmacology.

The Graduate School at UW-Madison requires PhD students to complete a minimum of 51 credits in order to obtain a PhD Degree. These credits are fulfilled via core curriculum courses, 990 research, and electives. Courses numbered below 300, audit, and pass/fail do not satisfy the minimum requirement. It is suggested that you take approximately 2 courses per semester with the remaining credits being 990 research. All courses must be completed by the end of your second year, before completing the Preliminary Exam. In addition, Cancer Biology students are required to participate in two seminar series (see below).

<table>
<thead>
<tr>
<th>Year 1</th>
<th>FALL</th>
<th>SPRING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oncology 703</td>
<td>Oncology 675-Readings in Cancer Biology</td>
</tr>
<tr>
<td></td>
<td>Oncology 640 (recommended) or Elective</td>
<td>Oncology 675-Appropriate Conduct in Science</td>
</tr>
<tr>
<td>Year 2</td>
<td>Oncology 675: Problems in Cancer Research</td>
<td>Oncology 675-Statistics (offered every other year)</td>
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<tr>
<td></td>
<td>Elective</td>
<td>Oncology 675: Seminar</td>
</tr>
</tbody>
</table>

Core Curriculum

- Oncology 703 – Carcinogenesis and Tumor Cell Biology; 3 credits/Fall
  - This course covers factors involved in tumor production in humans and experimental animals; biology and biochemistry of neoplasia, both in vivo and in vitro.
  - A grade of B or better must be received or the course must be repeated.
- Oncology 675 – Readings in Cancer Biology; 2 credits/Spring
  - This course focuses on how to master critical reading of seminal papers in cancer research.
- Oncology 675 – Appropriate Conduct in Science; 1 credit/Spring
  - This course offers a review and discussion of the fundamentals of good scientific communication and ethical issues in science.
  - This course fulfills your ethics requirement.
- Oncology 675 – Problems in Cancer Research; 2 credits/Fall
  - The emphasis of this course is on the development of skills in data analysis and interpretation, proposal writing, and oral presentation to help prepare students for their Preliminary Exam. Open to second-year graduate students only. This course is not listed in the course schedule; the Coordinator will provide you with the course number in order to register.
  - A grade of B or better must be received or the course must be repeated.
- Oncology 675 – Statistical Problems in Genetics and Molecular Biology; 2 credits/Spring
  - Offered every other year (offered next: Spring 2016).
**990 Research Credits**
This is the course in which you will be conducting your independent research. As a first-semester student, you will register for 990 research credits under Program Co-Director, Dr. Dan Loeb. Once a lab is selected, these credits will be registered under the section of your Advisor. See the “Registration” section for more information.

**Elective Courses/Minor Coursework**
To fulfill the remainder of required credits, you must take at least 3 electives pertaining to individual training goals, as suggested or required by your Certification Committee (if a student chooses to complete a minor (see below), the minor coursework may fulfill these elective requirements). Some elective courses include, but are not limited to:

**Fall Semester**

<table>
<thead>
<tr>
<th>Biochemistry 601</th>
<th>Protein and Enzyme Structure and Function</th>
<th>2 cr</th>
<th>Holden Rayment</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Protein structure and dynamics. Protein folding. Physical organic chemistry of enzymatic catalysis. Analysis of enzyme kinetics and receptor-ligand interactions. Enzymatic reaction mechanisms.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biochemistry/Pharm/Zoo 630</td>
<td>Cellular Signal Transduction Mechanisms</td>
<td>3 cr</td>
<td>Martin</td>
</tr>
<tr>
<td><em>Comprehensive coverage of human hormones, growth factors and other mediators; emphasis on hormone action and biosynthesis, cell biology of hormone-producing cells.</em></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Biochemistry 651</td>
<td>Biochemical Methods</td>
<td>3 cr</td>
<td>Prost Senes</td>
</tr>
<tr>
<td><em>Introduction to modern biochemical laboratory techniques and current biochemical literature. Students will present a seminar based upon scientific literature that parallels experiments they will perform in lab.</em></td>
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</tr>
<tr>
<td>Genetics/Medical Gen 677</td>
<td>Advanced Topics: Advanced Genetics</td>
<td>1-3 cr</td>
<td>Engels Ganetzky Hittinger</td>
</tr>
<tr>
<td>Genetics/Medical Gen 677</td>
<td>Advanced Topics: Evolutionary Systems Biology</td>
<td>1-3 cr</td>
<td>Loewe</td>
</tr>
<tr>
<td>Microbiology/Biochemistry/Genetics 612</td>
<td>Prokaryotic Molecular Biology</td>
<td>3 cr</td>
<td>Forest Gourse</td>
</tr>
<tr>
<td><em>Molecular basis of bacterial physiology and genetics with emphasis on molecular mechanisms; topics include nucleic acid-protein interactions, transcription, translation, replication, recombination, regulation of gene expression.</em></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Microbiology/Genetics 607</td>
<td>Advanced Microbial Genetics</td>
<td>3 cr</td>
<td>J. Wang</td>
</tr>
<tr>
<td><em>Molecular genetic methods and related aspects of prokaryotic and lower eukaryotic biology, as well as critical analysis of the scientific literature.</em></td>
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</tr>
<tr>
<td>Microbiology MMI 740</td>
<td>Mechanisms of Microbial Pathogenesis</td>
<td>3 cr</td>
<td>Demian-Sauer</td>
</tr>
<tr>
<td><em>Lecture-discussion. Host-pathogen relationships in microbial diseases.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M&amp;E Toxicology/Oncology/ Medicine/Path 625</td>
<td>Toxicology I</td>
<td>3 cr</td>
<td>Bradfield Jefcoate</td>
</tr>
<tr>
<td><em>Basic principles of toxicity and biochemical mechanisms of toxicity in mammalian species and man. Correlation between morphological and functional changes caused by toxicants in different organs of the body.</em></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Oncology 640</td>
<td>General Virology-Multiplication</td>
<td>3 cr</td>
<td>Ahlquist Kalejta Sherer</td>
</tr>
<tr>
<td><em>Bacterial and animal viruses, their structure, multiplication, and genetics.</em></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Instructor</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------------------------</td>
<td>---------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Oncology 675</td>
<td>Protein Purification and Characterization</td>
<td>2 cr</td>
<td>Burgess Xing</td>
</tr>
</tbody>
</table>

*Offered every other year: offered next Fall 2015.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path-Bio 528</td>
<td>Immunology</td>
<td>3 cr</td>
<td>Czuprynski Friedrich Gasper M. Suresh</td>
</tr>
</tbody>
</table>

*Development and functions of immune response in animals; a comprehensive study of experimental humoral and cellular immunity*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path-Bio 720</td>
<td>Advanced Immunology: Critical Thinking</td>
<td>3 cr</td>
<td>Gumperz</td>
</tr>
</tbody>
</table>

*Advanced course focusing on current questions in immunological research. Course explores immunology topics including genetic, cellular, and molecular features of immune system fundamental to regulation of immune responses. Course format: discussion of research articles and exposure to research seminars.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathology &amp; Lab Med 803</td>
<td>Pathogenesis of Major Human Diseases</td>
<td>3 cr</td>
<td>Fabry</td>
</tr>
</tbody>
</table>

*This course will focus on disease pathogenesis and discussion of the leading disease research model. Throughout the course, we will combine expert clinicians, basic scientists, and literature review on specific major diseases.*

### Spring Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry 620</td>
<td>Eukaryotic Molecular Biology</td>
<td>3 cr</td>
<td>Ansari Wassarman</td>
</tr>
</tbody>
</table>

*This course focuses on the basic molecular mechanisms that regulate DNA, RNA, and protein metabolism in eukaryotic organisms. This course is intended for first year graduate students with a firm knowledge of basic biochemistry.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry 625</td>
<td>Coenzymes and Cofactors in Enzymology</td>
<td>2 cr</td>
<td>Fox</td>
</tr>
</tbody>
</table>

*Course will emphasize the importance of coenzyme and cofactors of enzymes in biochemistry. All aspects of the biochemistry of coenzymes will be covered, including their biosynthesis as far as is known, the biochemical reactions they catalyze, their chemical and spectroscopic properties, and the mechanisms by which they facilitate biochemical reactions.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell &amp; Regenerative Bio 640</td>
<td>Fundamentals of Stem Cell and Regenerative Biology</td>
<td>3 cr</td>
<td>Bresnick</td>
</tr>
</tbody>
</table>

*The course will provide a foundation to understand fundamental biological, mechanistic, and experimental concepts in the field of stem cell and regenerative biology.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell &amp; Regenerative Bio 650</td>
<td>Molecular &amp; Cellular Organogenesis</td>
<td>3 cr</td>
<td>Lee, Youngsook</td>
</tr>
</tbody>
</table>

*This course will cover the most current knowledge of the basic principles of organogenesis including the molecular and cellular pathways leading to normal organ development and tissue regeneration. Tissue/organ specification, differentiation, and developmental processes, focusing on molecular and associated signal transduction pathways and transcriptional regulation will be covered in depth.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell &amp; Regenerative Bio/ Medicine 701</td>
<td>Cell Signaling and Human Disease</td>
<td>1-3 cr</td>
<td>Burkard Weaver</td>
</tr>
</tbody>
</table>

*This course is intended for PhD students interested in medically relevant basic science. Landmark discoveries, as well as current knowledge and controversies in human health, with an emphasis on cancer biology, will be covered.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical &amp; Biological Engineering 520</td>
<td>Stem Cell Bioengineering</td>
<td>3 cr</td>
<td>Ashton Klan</td>
</tr>
</tbody>
</table>

*Covers engineering approaches that are used to understand and manipulate stem cells. Concepts covered include: introduction to stem cell biology, quantitative modeling of stem cell signaling, methods to engineer the stem cell microenvironment, and the role of stem cells in tissue development and regeneration.*
Chemical & Biological Engineering 783   Design of Biological Molecules   3 cr   Shusta

*Introduction to the methodologies for engineering the structure and function of biological molecules, especially proteins. Students will develop an understanding for the integration of computation and experiment to address biological molecular engineering problems.*

Microbiology 625   Advanced Microbial Physiology   3 cr   TBD

Pathology 750   Cellular and Molecular Biology/Pathology   3 cr   Lakkaraju Lloyd O’Connor, S Peters Wheeler

*The emphasis is on our current understanding of molecular and cellular mechanisms. Wherever possible, human diseases are used to illustrate the outcome at the organismal level of defects in these mechanisms. Lectures will draw from the current research literature and cover topics such as cell and tissue organization, intracellular sorting, cell migration and growth.*

Path-Bio/MMI 750   Host-Parasite Relationships in Vertebrate Viral Disease   3 cr.   Brandt

*Lecture. Detailed study of the pathogenesis of vertebrate viral disease, stressing viral invasion, dissemination, mechanisms of disease production and resistance, and transmission.*

For a list of all courses offered and their descriptions, please refer to the Course Guide: [http://registrar.wisc.edu/schedule_of_classes_students.htm](http://registrar.wisc.edu/schedule_of_classes_students.htm).

**Minor (Optional)**

The Cancer Biology Program does not require students to complete a minor, however the option is available to those who wish to do so. Acceptance of the minor requires the approval of the Advisor and respective department in which the minor is administered.

1. **Option A (Degree Specific):** Complete at least 9 credits from a degree program outside of Cancer Biology. You must abide by the minor department’s requirements. Courses cross-listed with Oncology may fulfill the minor requirement, provided this is approved by your Certification Committee and the minor department. Your Certification Committee must include one member from the minor department. See individual departments for specific requirements.

2. **Option B (Distributed):** Complete at least 9 credits from two or more departments outside of Oncology. Courses cross-listed with Oncology may fulfill the minor requirement, pending approval by your Certification Committee.

If you wish to complete a minor, you must inform the Program Coordinator of your minor option selection by the end of the first year. The minor must be approved by your Certification Committee and must be completed along with the major course requirements by the end of your second year. Please note that minor coursework may count towards the elective course requirements.

**Previous Graduate Work**

- In some circumstances, a student may petition for a waiver of an elective course requirement. The basis for such a waiver will be evidence of previous work at the same level and content which must be approved by the program.
- You must provide a written justification describing the reasons for requesting the waiver. You must also provide a copy of the substitute course syllabus and transcript (can be unofficial copy) indicating the grade received in the substitute course.
- A course elective that has been waived carries no credit toward the Graduate School’s minimum credit requirements for the degree nor will the course appear on your UW-Madison graduate transcript.
Grades and Satisfactory Progress

- To make satisfactory progress toward the degree, you must maintain a minimum graduate GPA of 3.0.
- Oncology 703 and Oncology 675-Problems in Cancer Research require a grade of B or better, otherwise the course must be repeated.
- For other courses, grades of BC or C may be offset by higher grades on a credit-by-credit basis.
- Courses in which a grade of D or F was assigned will not be counted toward the Graduate School credit requirement.
- Incomplete (I) grades are considered to be unsatisfactory if they are not removed during the subsequent semester of enrollment; however the instructor may impose an earlier deadline.
- A student may be placed on probation or suspended from the Graduate School for low grades or failing to resolve incompetencies in a timely fashion.
- In special cases, the Graduate School permits students who do not meet these minimum requirements to continue on probation upon recommendation of the Advisor.

Master’s Degree

The Cancer Biology Program does not admit for a Master’s Degree. However, a terminal coursework Master’s Degree may be awarded in some circumstances if the student and/or Certification Committee decide that the student should not continue towards a Ph.D. To obtain a Master’s Degree, the student must complete a minimum of 30 graduate credits.

Seminar Requirements

Cancer Biology Student/Postdoc Seminar

- Beginning in your second year, you will be required to give an annual, formal presentation in the Cancer Biology Student/Postdoc Seminar Series. You will register for Oncology 675-Seminar during the semester in which you present. Your seminars will be recorded and you will receive feedback from the seminar course instructor to help improve your public speaking and presentation skills.
- The 2015-16 seminar is held on Mondays, at 3:30 pm in Rm. 6571 McArdle Laboratory (WIMR II). Attendance at this seminar series is required. The schedule is posted on the McArdle website: http://mcardle.oncology.wisc.edu/events/studentpostdoc_seminars.html

Cancer Biology Seminar

- You are expected to attend the Cancer Biology Seminar throughout your graduate career (no registration required). The Cancer Biology Seminar, which features local and outside faculty speakers, is held on Wednesdays at 11:00 a.m. in 1345 HSLC. The schedule is posted on the McArdle website: http://www.mcardle.wisc.edu/events/cancerbiology_seminar.html

Other

Formal coursework is only one element of graduate education. UW-Madison and the Cancer Biology Program offer a wealth of resources intended to enrich your graduate studies and enhance your professional skills. It is expected that you will take full advantage of the resources that best fit your needs and support your career goals as a scientist and professional (seminars and lecture series, national conferences, joint lab meetings, volunteer opportunities, campus workshops, etc.).

Speaker Chat

Following the Cancer Biology Seminar series is the opportunity to meet with the speaker during our “Speaker Chats.” Paper(s) are provided by the seminar speaker and circulated the week before their talk for students to read in order to help prepare questions for the speaker in advance. Speaker Chat will take place in room 6471 McArdle Laboratory (WIMR II), from 12:15-1:15 p.m. A light lunch will be provided.
Teaching
There is no formal teaching requirement as part of the Cancer Biology Program; however there are many opportunities on campus for students who wish to gain teaching experience (for example, the Biocore Program and serving as TA for some Oncology courses). Contact the Program Coordinator if interested in teaching opportunities.

Data Club
Data Club is a student-led group organized by Cancer Biology Graduate Students. It is open to all graduate students and postdocs on campus who are conducting cancer research and provides an informal environment to discuss science, troubleshoot, practice talks, and network with colleagues.

Professional Development
A bi-weekly e-newsletter is sent to all Cancer Biology students that highlight various funding, professional development, volunteer, teaching, etc. opportunities. Visit the Cancer Biology website and UW-Madison Graduate School for a list of additional resources.

VI. REGISTRATION

Prior to the start of each semester, you will receive an email from the Registrar’s Office inviting you to register. To remain on the payroll, Research Assistants and Trainees must be registered as full-time students each semester. For pre-dissertators, a full-time credit load is 8-15 credits during the fall and spring semesters, and 2 credits for the 8-week summer session. It is recommended that pre-dissertators register for the maximum number of credits, so that they maintain full-time status if they must drop a course after the semester starts. Dissertators must register each semester for exactly 3 credits of coursework/research related to their dissertation project. The Graduate School will remove dissertator status if a student is registered for more or less than 3 credits.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Pre-Dissertator (before passing prelim)</th>
<th>Dissertator (after passing prelim)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>8-15 credits</td>
<td>3 credits</td>
</tr>
<tr>
<td>Spring</td>
<td>8-15 credits</td>
<td>3 credits</td>
</tr>
<tr>
<td>Summer</td>
<td>2 credits</td>
<td>3 credits</td>
</tr>
</tbody>
</table>

If you do not register on time, you may be subject to a late fee. The Cancer Biology Program is not responsible for any late fees. For important registration deadlines and other enrollment information, visit the Registrar’s website: [http://registrar.wisc.edu/](http://registrar.wisc.edu/).

Dissertator Status
- To achieve dissertator status, you must complete all Cancer Biology course requirements and pass the Preliminary Exam.
- Dissertator status should be achieved within 2 years of starting the program.
- Dissertators are required to register for 3 credits directly related to their dissertation research every semester (including summer) until graduation. Students who do not maintain continuous registration will be assessed a degree completion fee equal to 12 times the current per-credit rate.
- Dissertators will be required to register for the Oncology 675 seminar in the semester in which they present. During this semester, registration will consist of 1 credit of seminar and 2 credits of 990 research.
- For additional information about dissertator status, see these links:
  - Graduate School Policy: [http://grad.wisc.edu/acadpolicy/#dissertationstatus](http://grad.wisc.edu/acadpolicy/#dissertationstatus)
  - Dissertator Eligibility Deadlines: [http://grad.wisc.edu/currentstudents/degreedeadlines/](http://grad.wisc.edu/currentstudents/degreedeadlines/)
VII. PROGRESS REQUIREMENTS

Curriculum Certification (Year 1)

After joining a lab, you are required to form a Certification Committee. This committee will help guide you through the process of earning the PhD Degree. The Certification Committee consists of at least five members, including your Advisor. At least three members must be trainers in the Cancer Biology Graduate Program [http://cancerbiology.wisc.edu/faculty/faculty.html] and at least one member must be from outside your Advisor’s department. If you opt to complete an Option A minor, one member of the committee must also represent the minor department. Submit the “Certification Committee Approval” Form with the names of your committee members by May 31 of your first year.

Once a Certification Committee is established, you must hold your first committee meeting by August 31 of your first year. The goal of this meeting is to discuss appropriate coursework and briefly introduce your research project/direction to the committee. At least three committee members, including the Advisor, must attend. If necessary, you should meet individually with committee members who could not attend after the meeting. Students who do not meet with their committees in a timely fashion may be prevented from registering for the next semester.

Steps to Complete:
• Schedule committee meeting and reserve room location (By August 31).
  ◦ Notify Coordinator of the scheduled date.
• Distribute the project summary and first portion of committee form to committee members at least one week prior to the meeting.
• Bring a copy of the committee form to the meeting.
• Certification Committee establishes the Chair of the meeting (cannot be Advisor).
• Committee holds an executive session and designated chair prepares a written evaluation.
• Obtain signatures on the committee form and submit to the Program Coordinator.

Prelim Exam (Year 2)

The Preliminary Examination consists of a written research proposal and oral defense of that written proposal. The proposal is based on your proposed dissertation research and is evaluated by your Certification Committee. The purpose of this examination is to evaluate whether you have mapped out a sound approach to an important answerable question and to assist with the planning of your project. The prelim is based on your original work; however you are encouraged to consult with your Advisor and other colleagues during the planning and writing of the research proposal. You should complete your Prelim Exam by the end of your second year (August 31). In special circumstances, a one-semester extension will be granted when justified in writing by the student and Advisor.

Steps to Complete:
• Schedule Prelim Exam meeting and reserve room location (All committee members must be present).
  ◦ Notify Coordinator of the scheduled date at least three weeks in advance, to allow enough time to request warrant from the Graduate School.
• Have written proposal draft(s) reviewed by Advisor. Once proposal is approved by the Advisor, distribute first portion of Prelim Exam Form and proposal to committee members at least 10 days before exam
• Bring a copy of the Prelim Exam Form to the meeting.
• Give a 20-minute oral presentation describing the research proposal and respond to questions from the Certification Committee which correspond to the proposal itself and any related material (Advisor must
not contribute to the student's responses unless specifically asked to by the other members of the Committee).

- Committee holds an executive session and the designated chair prepares a written evaluation
- Obtain signatures on the prelim form, warrant and minor approval form (if applicable) and submit to the Program Coordinator.

Students who successfully complete the Preliminary Examination will achieve dissertator status and continue their work toward the PhD degree. Students who receive a "conditional" pass on the Preliminary Examination must address deficiencies or revisions as requested by his/her Committee prior to continuing work toward the PhD degree. Students who do not pass the Preliminary Examination will be required to repeat the exam or will be granted a Non-Thesis Master's Degree based on the successful completion of required coursework.

**Format for the Preliminary Examination:**
The length of the proposal should not exceed 20 pages, double-spaced (Arial, 12-point, 1-inch margins), excluding title page and literature cited. Number the pages consecutively beginning with the title page. Adherence to this format will be considered in the final evaluation.

- **Title Page** (not included in page limit). Descriptive title of proposal. Your name. Date, time, and location of the oral defense. Names of all committee members.

- **Abstract** (less than one page). Summarize the research proposed clearly describing the objectives.

- **Specific Aims** (less than one page). State the broad, long-term objectives and describe concisely and realistically what the specific research is intended to accomplish and any hypotheses to be tested.

- **Background and Significance** (2-3 pages). Briefly sketch the background to the proposal, critically evaluate the existing knowledge, and specifically identify the gaps the project is intended to fill. Concisely relate the specific aims to the broad, long-term objectives.

- **Preliminary Studies.** Use this section to provide an account of preliminary studies by you (and/or the members of your laboratory with proper credit) pertinent to this application and/or any other information that will help to establish the experience and competence of the student to pursue the proposed project.

- **Experimental Design and Methods.** Outline the experimental design and the procedures to be used to accomplish the specific aims of the project. Include the means by which the data will be collected, analyzed, and interpreted. Describe any new methodology and its advantages over existing methodologies. Discuss potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the aims. Provide a tentative timetable for the investigation.

- **Figures and Tables.** Figures and tables (with legends) critical to the proposal must be included within the 20-page limit. The student will have the opportunity to present additional figures during the oral presentation.

- **Literature Cited** (not included in the page limit). Each citation must include the names of all the authors, title, book or journal, volume number, page numbers, and year of publication. Make every effort to be judicious in compiling a relevant and current list of literature citations.
Annual Committee Meetings (Years 3+)

You are required to conduct a yearly committee meeting with your Certification Committee after passing the Preliminary Exam. This meeting ensures that you are making satisfactory research progress toward the PhD Degree. Committee meetings must be scheduled and completed by August 31 of each year. At least three committee members, including the Advisor, must attend. If necessary, you should meet individually with committee members who could not attend after the meeting. Students who do not meet with their committees in a timely fashion may be prevented from registering for the next semester.

Steps to Complete:
- Schedule committee meeting and reserve room location (By August 31).
  - Notify Coordinator of the scheduled date.
- Distribute project summary and first portion of committee form to committee members at least one week prior to meeting.
- Bring a copy of the committee form to meeting.
- Certification Committee establishes the Chair of the meeting (cannot be Advisor).
- Present prepared presentation of research progress and accomplishments over the past year.
- Committee holds an executive session and designated chair prepares a written evaluation.
- Obtain signatures on the committee form and submit to the Program Coordinator.

Semifinal Report

Approximately 6 months before the anticipated completion of the dissertation, you must present a research report on the proposed dissertation to the members of your Certification Committee. The goals of this "6-month" meeting are to inform the committee of the proposed content of your dissertation in detail and to seek the committee's approval for that proposed content. At least 10 days prior to this meeting, you must distribute a proposed outline of the dissertation (which has already been reviewed and approved by the Advisor) to your Committee members. It is essential that this outline of the dissertation be sufficiently detailed so that the committee can evaluate the questions addressed, the exact experiments used to address the questions, and any other information needed. Upon approval by the Certification Committee, a committee form should be completed and signed by the Certification Committee and returned to the Program Coordinator.

Dissertation Defense (Final Year)

The Dissertation Defense is a formal, oral presentation based on your original, independent research. Following the seminar presentation is a closed meeting with your Certification Committee. Per Graduate School policy, the Dissertation Defense must be completed within five years after completion of the Preliminary Exam. The dissertation must be formatted according to the guidelines of the Graduate School. Instructions for preparing and depositing your dissertation can be found at: http://tinyurl.com/despositdissertation.

Steps to Complete:
- Schedule Dissertation Defense and reserve room locations (All committee members must be present).
  - Notify Coordinator of the scheduled date at least four weeks in advance, to allow enough time to request warrant from the Graduate School.
- Distribute copy of dissertation to Certification Committee members at least 10 days before the date of exam. Students should be prepared to provide hard copies or electronic copies, as preferred by individual committee members.
- Present public seminar and then defend and answer questions posed by Certification Committee in closed meeting.
• Obtain signatures on the warrant (you will bring your warrant with you to your final review at the Graduate School).

• After you pass your oral defense, you can schedule your final review appointment at the Grad School. Times fill up quickly toward the end of the semester, so it is helpful to call ahead of time.

• Deposit your dissertation electronically. Detailed instructions can be found in Step 3 of: http://tinyurl.com/despositdissertation. All corrections and revisions must be made before depositing; you are not allowed to make changes after submission. You should deposit your dissertation at least one day before your final review appointment.

• Attend your scheduled final review appointment at the Grad School. Detailed instructions can be found in Step 4 of: http://tinyurl.com/despositdissertation. You will need to bring the following to your final review appointment:
  o Warrant
  o Survey of Earned Doctorates (SED) certificate of completion
  o Graduate School’s Doctoral Exit Survey (DES) certificate of completion

• Submit the following materials to the Program Coordinator:
  o Copy of the signed warrant
  o Address Information Form
  o 4 printed copies of your dissertation which will be bound for you; one copy for your Advisor, one copy for Mc Ardle, and 2 copies for you (Please note that ordering additional copies from ProQuest is separate from these copies. You will be responsible for paying for any additional copies ordered through ProQuest).

Diploma

Degrees are posted on official transcripts approximately 4-6 weeks after the end of the semester and diplomas are sent approximately four months after the end of the semester in which you graduate. Be sure to update your address in MyUW, so that the diploma is sent to the correct address.

You can request a “Certification of Degree” letter from the Registrar’s office (https://registrar.wisc.edu/degree_certification_letters_acad_rec.htm) indicating that you have fulfilled all of the degree requirements after you have deposited your dissertation and paid the necessary fees (this letter is often required if a student is applying for a postdoc position immediately after graduation). To request this letter, email certs@em.wisc.edu

VIII. GRIEVANCE PROCEDURES

If a student feels unfairly treated or aggrieved by faculty, staff, or another student, the University offers several avenues to resolve the grievance. Students’ concerns about unfair treatment are best handled directly with the person responsible for the objectionable action. If the student is uncomfortable making direct contact with the individual(s) involved, they should contact their Advisor or the person in charge of the unit where the action occurred (Program or Department Chair, lab manager, etc.).

Graduate School Appeal Process:
An official review of procedures can be initiated by the Graduate School if a student feels that their grievance was not appropriately handled or resolved at the program/department or school/college level or through consultation with other resources listed on the Graduate School’s website.
IX. FINANCIAL INFORMATION

Students are admitted into the Cancer Biology Program as a Research Assistant (RA) unless they have received a fellowship or training grant.

First Semester
- **Stipend:** All Cancer Biology students are awarded a pre-tax stipend of $26,000 for the 2015-16 year (12 month appointment). You will receive your first full paycheck in early October (for part of August and full month of September). Students will receive a paycheck at the beginning of every month going forward.
- Upon registering as a full-time student and completing benefits paperwork, first-year students will also receive a $1000 relocation allowance.
- **Tuition:** Tuition is remitted. If you receive a tuition bill, you should contact the Program Coordinator immediately. Students will be responsible for any late fees.
- **Segregated Fees:** Each semester, students with a Research Assistant title will be responsible for paying segregated fees. These fees cover the cost of University Health Services, bus passes, use of the unions, etc. Fees may be paid online through your MyUW Student Center or at the Bursar’s Office (Student Services Tower, E. Campus Mall, Room 10501). Students will be responsible for paying a $100 late fee if fee payment is not made by the deadline.
- **Taxes:** Taxes are withheld from your monthly paycheck.

Research Assistants (RA)
- **Stipend:** RAs are awarded a pre-tax stipend of $26,000 for the 2015-14 year (12 month appointment) paid by the Advisor.
- **Tuition:** Remitted.
- **Segregated Fees:** RAs are responsible for paying segregated fees each semester.
- **Taxes:** Taxes are withheld from monthly paycheck.

Fellows/Trainees
- **Stipend:** All or the majority of stipend is paid by the fellowship/training grant (if fellowship/training grant funding rate is below the Cancer Biology stipend, it will be supplemented to match the current Cancer Biology stipend rate).
- **Tuition:** Paid by the fellowship/training grant.
- **Segregated Fees:** Paid by the fellowship/training grant.
- **Taxes:** Often taxes and social security are not automatically withheld from a Trainee/Fellow’s paycheck. Trainees or Fellows are responsible for paying the necessary taxes directly to the Internal Revenue Service (www.irs.gov) and the state Department of Revenue (www.dor.state.wi.us). Most students file quarterly estimated tax payments; failure to do so can result in tax penalties. The University of Wisconsin Service Center has put together a website with general information about tax filing: http://uwservice.wisc.edu/tax/filing-resources.php

X. HEALTH & WELLNESS

Health Insurance and Benefits
All graduate students are eligible for various insurance plans at minimal cost. Applications for insurance coverage must be completed within 30 days of your start date (to receive health insurance effective September 1, you must complete benefits forms by August 30). Premiums are automatically deducted from your monthly paycheck. For
more information about each plan, see the UW-Madison New Employee Benefits website (http://www.ohr.wisc.edu/benefits/new-emp/grad.aspx) or contact Chris Carollo-Zeuner (zeuner@oncology.wisc.edu, 6405 McArdle Laboratory (WIMR II)).

**UWell**
UWell is a UW-Madison holistic resource for all things wellness-related. This site includes information and opportunities for work/school, financial, environmental, physical, emotional, and spiritual and community wellness: http://uwell.wisc.edu/.

**University Health Services (UHS)**
Students who pay segregated fees are eligible for UHS services, the campus health clinic. Many services are provided at no extra cost, including outpatient medical care during regular business hours, Monday-Friday. UHS is located in the Student Services Tower at 333 East Campus Mall, 608-265-5600.

**Disability Information**
Students with disabilities have access to disability resources through UW-Madison’s McBurney Disability Resource Center. As an admitted student, you should first go through the steps to “Become a McBurney Client” at http://www.mcburney.wisc.edu/students/howto.php.

**Mental Health Resources**
University Health Services (UHS) is the primary mental health provider for students on campus. UHS counseling and Consultation Services offers a wide range of services to the diverse student population. They offer immediate crisis counseling, same day appointments and ongoing treatment. Go to http://www.uhg.wisc.edu/services/counseling or call 608-265-5600.

**Recreational Facilities**
UW-Madison has multiple recreational facilities, group fitness classes, intramural sports, club sports, etc. Visit the Division of Recreational Sports website for details: http://www.recsports.wisc.edu/.

**XI. LAB SAFETY**

When working in a lab on campus, you are required to complete three basic biosafety courses administered by the UW Office of Biological Safety: http://www.ehs.wisc.edu/bio-biotraining.htm. These trainings must be completed by the first day of rotations:

- Biosafety 101: Building Biosafety into your Research-Risk Assessment
- Biosafety 104: Building Biosafety into your Research-Safe Use of Sharps
- Biosafety 201: NIH Guidelines

Additional trainings may be required depending on each laboratory; i.e., when working with animals (http://www.rarc.wisc.edu) or radiation (http://www.ehs.wisc.edu/rad-training.htm). You must speak with your Advisor about which trainings are required for his/her laboratory. For a complete list of trainings offered, please visit: https://fpm-www3.fpm.wisc.edu/EHSTraining/Default.aspx.
XII. McARDLE BASICS

Conference Rooms

- Conference rooms (6471, 6571, and 7571) in the McArdle Laboratory may be reserved for committee meetings, examinations, etc. via the McArdle internal website at: https://intra.oncology.wisc.edu/.
- To request rooms in WIMR I refer to the WIMR reservation policy: http://intranet.med.wisc.edu/facilities/wimr-room-reservation-policy/36783.
- Rooms in HSLC/CSC may be reserved online at: http://www.med.wisc.edu/facilities/hslc/room-reservations/25305

Everybody List
To send a business-related email message to everyone in the Department of Oncology, the address is everybody@oncology.wisc.edu. As a Cancer Biology graduate student, you are automatically added to this list.

X. PROGRAM CONTACTS

Program Directors
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