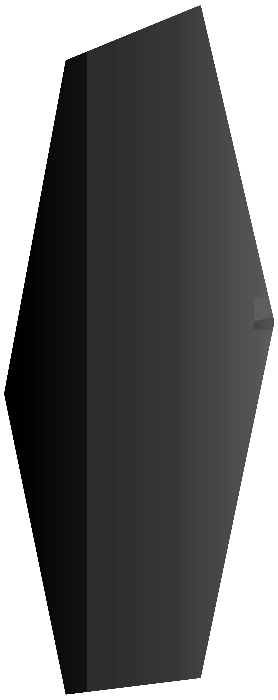
Graduate Student Manual



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1. Program Overview

The mission of the Interdisciplinary Graduate Program (IDGP) in Human Toxicology is to train outstanding toxicologists. The program fosters a culture of exceptional science, uninhibited cooperation, and excellent communication both within the program and within the community.

The IDGP at the University of Iowa is located administratively within the Graduate College, along with several other interdisciplinary graduate programs. It is led by its Director, Dr. Larry Robertson. He is assisted by the Director of Graduate Studies, Dr. Gabriele Ludewig, and the Associate Director, Dr. Peter Thorne.

Faculty from five Colleges (Public Health, Medicine, Pharmacy, Liberal Arts & Sciences, and Engineering) participate in the Interdisciplinary Graduate Program in Human Toxicology. See **Appendix 1** for participating faculty members. The faculty of the Interdisciplinary Graduate Program in Human Toxicology are the governing body of the Program, approve membership of interested faculty from across campus and decide all issues of Program policy and Program governance.

2. Admissions

The **Admissions Committee** of the Interdisciplinary Graduate Program in Human Toxicology seeks to identify qualified students to enter the Program. Graduate students, primarily doctoral students, are recruited nationally and internationally. Applications from individuals with disabilities and individuals from underrepresented groups/minorities are encouraged.

The Admissions Committee, consisting of 5 members of the Program Faculty representing diverse areas of research interest, will be constituted and charged with reviewing all applications for

admission to the Program. Criteria for admission are chosen to select students who are likely to be successful in the Program, including:

i. A minimum undergraduate GPA higher than 3.0, or the demonstration of success in graduate work, in fields of study within the scientific disciplines, such as chemistry, biology, physics, engineering and the health-related disciplines;
ii. A minimum GRE score of 1100 (sum of the first two parts, older exam), or 300 (newer one);
iii. For international applicants, a minimum TOEFL of 600 (paper), 250 (computer), or 100 (Internet based).
iv. At least three letters of reference that reflect positively on the potential of the candidate for success in graduate studies.
v. Generally successful applicants will have attained a Bachelor's or Master's degree in the sciences or engineering, and are well prepared to successfully negotiate the Program curriculum.
vi. Applications to the Human Toxicology PhD Program are submitted through the University of Iowa Graduate College online application. There is a $60 application fee ($100 for international students). Once an application has been submitted, an email will be sent instructing how to upload supporting documents and submit letters of recommendation.
vii. For best consideration, completed applications should be submitted by **December 1st**.
viii. Applications received after **December 1st** will be considered on a rolling basis.
ix. Related programs of study in the Department of Occupational & Environmental Health may be found on their website.
These include M.S. & Ph.D. programs in Occupational and Environmental Health. A formal subtrack in Industrial Hygiene is also available.

3. The First Year

Orientation

All first-year students should arrive on campus at least one week before classes start for the University of Iowa Graduate School orientation (international students should arrive at least two weeks before and in time for international student orientation), in order to move into housing, and to meet with the Human Toxicology Program Director who acts as the advisor for first-year students

and can be consulted concerning any aspect of graduate study. Later, an Advisory Committee of four or five faculty members will be formed to provide additional advice.

After their meeting with the Program Director, students will also meet with the Program Administrator to complete the forms necessary to receive their stipend. The stipend will begin after arrival and the first paycheck, covering a portion of August, will be on September 1 with a full month stipend on October 1.

Finding Housing

Graduate student housing will be off-campus. Information on available housing may be found at http://offcampushousing.uiowa.edu, *The Daily Iowan*, http://www.dailyiowan.com/ and the Iowa City Press-Citizen. Current students in the program are also a source of information on housing. Monthly rent for apartments in the Iowa City area will vary depending upon the location and the amenities.

Health Insurance

All University of Iowa students are required to have health insurance. If they are covered by their parent's health insurance or another funding source for health insurance, they must submit proof of coverage. All graduate students may use the University's Student Health Service, for which the Program pays the "Mandatory Health Fee"

Graduate students must also enroll in either the Student Health Insurance Policy (SHIP) or the UI GRADCare plans. Students should choose which plan when the appointment in Human Toxicology begins. The student contributes a nominal amount per year to either plan, and the Program pays the remainder. Most students choose the UI GRADCare Plan. Students who do not enroll will automatically be placed in the SHIP plan.

Note: Program covered UI GRADCare or SHIP Health Insurance begins September 1st. A student may enroll for August but will charged the full premium. The reduced health insurance premiums will start in September.

International students must have health insurance by the first day of classes and will automatically be billed for SHIP for August but then can start Program health insurance for UI GRADCare on September 1st. For questions, please call the University of Iowa Health Benefits office at 319-335-2676.

4. **Financial Support**

Normally, all Ph.D. students are supported by a yearly stipend that is paid monthly. Tuition and mandatory fees are also paid. Any student not so supported will be clearly informed during the correspondence before admission. Students will be supported for the time required to finish the Ph.D. degree; however, support is contingent upon evidence of satisfactory progress. Students may be supported by research assistantships with funds from the Graduate College or they may be supported by training grants and other grants. Stipend support is renewed based on satisfactory progress toward the degree.

Although students are appointed as half-time Research Assistants, it is expected that students will devote full-time to course work and research. Students may not be employed in other jobs. If a student faces severe financial hardship, the Program Director and the Director of Graduate Studies should be informed so that special arrangements can be made

Each incoming student is offered financial support by the Human Toxicology Program. Financial support begins on the first day of their Research Assistantship employment and continues for one year from that date. During this time the student rotates through the laboratories of participating faculty, with the purpose of identifying a mentor. Three, 2 month rotations are required, and by the end of the first year, each student will be required to have identified a mentor. The mentor then assumes financial responsibility for the student.

5. **Vacations, Holidays, and Sick Leave**

Graduate student research assistants (50%) receive 15 days of paid vacation per year, in addition to the nine official University holidays: New Year's Day, Dr. Martin Luther King Jr.'s Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day,

Christmas Day, and the day before/after Christmas (as identified by the University). Unused paid leave does not carry over from year to year.

The University policy on sick leave is negotiated with COGS, the graduate student union. Graduate student assistants (50%) receive up to 18 days of paid sick leave per year. Sick leave does not carry over from year to year. PhD students may use available sick leave for care of and necessary attention to ill or injured members of the immediate family or for parental leave including birth and adoption. They may also use available sick leave for three work days when a death occurs in the immediate family. If a graduate student has exhausted paid sick leave due to illness, they may request an unpaid leave of absence which will be granted at the sole discretion of the Program and mentor.

Students must notify their advisors about absences (vacation, sick leave) from the lab. Vacations or any other planned absences should be discussed in advance. Absences in excess of the above allowances must be requested in writing and approved by the mentor and the Program Director.

6. Advisory Committee

Within the first semester of identifying a mentor, and joining the mentor's laboratory, the student selects faculty members to participate on his/her **Advisory Committee**, in consultation with his/her mentor. The primary mentor chairs the Committee. The student's Advisory Committee will consist of 4 or 5 members (doctoral committees) or 3 members (Master's committees), one of whom at least must be from outside the Program. Note, the committee must contain *at least 2* faculty members who are members of the Program. The Committee will meet at least twice per year and will provide advice and consultation on all aspects of the student's coursework and research planning and execution. The Advisory Committee will also serve as the student's **Examination Committee** for the Comprehensive Examination and for the Final Examination (Defense of Thesis). <u>It will be the responsibility of each student to call regular meetings of his/her Advisory Committee.</u>

7. Program Funding

Funding for the Human Toxicology Program comes from various sources including:

i. Graduate College
ii. NIEHS Iowa Superfund Research Program
iii. EHSRC-Environmental Health Sciences Research Center pilot grant
iv. CHEEC-Center for Health Effects of Environmental Contamination seed grant
v. NCI-National Cancer Institute
vi. NIEHS-National Institute of Environmental Health Sciences
vii. EPA STAR Fellowship Program

8. M.S. Curriculum

Master's students will not be actively recruited, nor is it anticipated that they will be supported financially. Maintenance of a Master's program in toxicology will serve the needs of local and regional students who wish to pursue a Master's degree, as a second degree or part-time. In our experience, many of these individuals are non-traditional students, some working full-time, often performing the functions of toxicologists in their jobs, and needing more formal training. The M.S. is a thesis-only program. A sample Master's Degree Curriculum is presented in **Appendix 2.**

9. Ph.D. Curriculum.

A major goal of the graduate Program in Human Toxicology is flexibility. Students (in consultation with their Advisory Committees) may tailor their course of study to their individual interests and goals within the broad framework that defines the field of toxicology. To assure that all students within the Human Toxicology Program have a common minimal level of training and experience in toxicology, all students will be required to successfully complete:

1.) A first course in toxicology, OEH:5710 Environmental Toxicology (3 hrs.) or PHAR:5544 Pharmaceutical and Chemical Toxicology (odd years) (3 hrs.) or equivalent course to be transferred from another graduate institution

2.) An advanced course, OEH:6720 Advanced Toxicology (4 hrs.).

3.) All toxicology graduate students are required to register for the toxicology seminar each semester (TOX:7180). For more information on the Human Toxicology Seminar series, visit the following website: https://toxicology.grad.uiowa.edu/seminar-calendar

4.) and to successfully complete Principles of Scholarly Integrity (1 hr.) (more information provided in the Ethics section of the Student Handbook)

NOTE: A typical sample Ph.D. curriculum is presented in **Appendix 3.** Students should meet with their advisors to develop a curriculum.

10. Rotations

Toxicology students are expected to complete three laboratory rotations in the first year. Although, in outstanding circumstances a student may be permitted to take a fourth rotation, it is highly recommended that students carefully choose each rotation. The first rotation is expected to start within the first few weeks of the first semester. Importantly, faculty members may be contacted early to be certain there is space available. Rotations are approximately 2 months long. After each rotation, students will be expected to give a 10-15 minutes' presentation to their colleagues in the Toxicology program. The weekly minimum time commitment for the rotations is 20 hours per week—this is important to keep in mind when deciding which and how many courses to take.

11. Doctoral Comprehensive Examination

The comprehensive examination is required of all doctoral students. The timing of the examination is at the discretion of the student and his/her primary advisor; however, it cannot be taken before the student completes Advanced Toxicology. Prior to the examination, the student will assemble a Graduate Advisory Committee of no less than 4 to 5 qualified individuals, pursuant to the Graduate College requirements. The student will present to his/her Doctoral Advisory committee with a description of the proposed doctoral thesis project, which must include: (1) the specific aims (2) the central hypothesis (3) the long term goals of the work (4) a concise description of the research design to be employed and (5) the methods to be used to accomplish the specific aims. Once the student and the Graduate Advisory Committee have agreed on a Hypothesis and Specific Aims, the primary advisor will allow the student to write the research proposal. Importantly, the student has **4 weeks to complete** the proposal. The student must distribute the proposal to the Graduate Advisory committee **at least 2 weeks prior** to the scheduled Comprehensive Examination. More information on format of the research proposal and timetable of the comprehensive examination is available at the following link or in **Appendix 4**: (http://toxicology.grad.uiowa.edu/sites/tox/files/Format-%26-Timetable-of-Doctorate-Comprehensive-Exam.pdf).

12. Final Examination (Defense of Thesis)

Master's Thesis Final Examination. Requirements for the **Master's degree** include a **Final Examination** (Defense of Thesis) that will be evaluated by the examining committee (student's advisory committee) as satisfactory or unsatisfactory, with two unsatisfactory votes making the committee report unsatisfactory. A candidate who fails the examination may present himself or herself for re-examination, but not sooner than the next regularly scheduled examination period in the following semester. The examination may be repeated only once.

Doctoral Thesis Final Examination. The written dissertation is prepared and submitted to the Graduate College according to specific guidelines available from the Graduate College http:/www.grad.uiowa.edu/theses-and-dissertations). After consultation with the Program Director and the Graduate Advisory Committee, the student schedules a **Final Examination** (Defense of Thesis). Please note, a final draft of the dissertation should be given to each member of the Committee **at least two weeks** before the scheduled date of the seminar/dissertation defense. The examination will consist of two parts: 1) an oral presentation of the research results, and 2) questioning by interested persons and by the Committee. At the conclusion of the Final Examination, the Committee may recommend 1) a "Satisfactory" completion of the examination, or 2) that the student's performance was "unsatisfactory". At the option of the Program, a reexamination may take place, but not until the next semester. The examination may be repeated only once. Upon successful completion of all degree requirements, including the seminar, evaluation of the written dissertation and successful oral defense of the dissertation, the Ph.D. in Human Toxicology is awarded by the Graduate College.

13. Ethics

Ethics Training. A course entitled Principles of Scholarly Integrity is required for all graduate students in the sciences at the University of Iowa. It will be taken during the fall and spring semesters of the students second year. During the first year students will take the Collaborative Institutional Training Initiative (CITI Training Program) online program. Students will be required to pass all modules of the CITI Training Program with at least 80% correct answers.

Academic Misconduct. Any form of cheating or plagiarism with respect to curricula, coursework, or examinations is grounds for dismissal from the Program. Plagiarism is defined as the act of taking another's ideas, words, or creative works and presenting them as your own, or presenting them without proper attribution.

Sexual Harassment. The University of Iowa has specific guidelines and regulations on sexual harassment. These guidelines are available from the University and should be reviewed by all members of the Human Toxicology Program. They are also posted on the University web site: http://opsmanual.uiowa.edu/community-policies/sexual-harassment

14. Other Information

Student Recourse

In the event that a student is failing to meet program standards, the program will notify the student of this fact in writing and specify the deficiencies. If the student does not remedy the deficiencies within a reasonable specified time, the student may be dismissed. If the student judges that this or any other program action is improper, the student has a right to request a review. If the student wishes to appeal the decision, the Program Director should be contacted to arrange the appeal process following the rules of the Graduate College. A document on the Academic Grievance Procedure is available in the program office and in the Graduate College, 205 Gilmore Hall.

Safety and Accidents

As soon as students choose a laboratory, they should become familiar with the location and use of fire extinguishers, safety showers, fire blankets and fire hoses. Students should seek advice concerning hazardous reactions or procedures. Safety goggles, safety shields, lab coats, disposable gloves, film badges and other personal protection devices should be used when appropriate. On-line and in person safety training is required of all persons working in the clinic or in laboratories, and is dictated by the duties, and possible exposures, of the student.

Laboratory accidents resulting in injuries requiring treatment must be reported at once to mentor and the Program Director. If the injury is not reported promptly, it may be difficult to receive compensation for the costs of treatment.

Security

All members of the Program share the responsibility for keeping laboratories secure against accidents (to people who may wander into a research area) and against pilferage.

APPENDIX 1	PARTICIPATING FACULTY MEMBERS	
	Primary Department	Interdisciplinary Programs
Larry Robertson, Ph.D. Professor, Program Director larry-robertson@uiowa.edu 219 IREH	Occupational & Environmental Health	Human Toxicology
Gabriele Ludewig, Ph.D. Professor, Director of Graduate Studies (DGS) gabriele-ludewig@uiowa.edu 234 IREH	Occupational & Environmental Health	Human Toxicology
Peter Thorne, Ph.D. Professor, Associate Program Director peter-thorne@uiowa.edu S341A CPHB	Occupational & Environmental Health	Human Toxicology
Garry Buettner, Ph.D. Professor garry-buettner@uiowa.edu B180K ML	Radiation Oncology	Free Radical & Radiation Biology, Human Toxicology
Jonathan Doorn, Ph.D. Associate Professor jonathan-doorn@uiowa.edu S328 PHAR	Medicinal & Natural Products Chemistry	Human Toxicology
Michael Duffel, Ph.D. Professor (Associate Dean) michael-duffel@uiowa.edu S325 PHAR	Medicinal & Natural Products Chemistry	Human Toxicology
R. William Field, Ph.D. Professor bill-field@uiowa.edu S327 CPHB	Occupational & Environmental Health	Human Toxicology
Laurence Fuortes, M.D. Professor laurence-fuortes@uiowa.edu S351 CPHB	Occupational & Environmental Health	Human Toxicology
Frederic Gerr, M.D. Professor fred-gerr@uiowa.edu S322 CPHB	Occupational & Environmental Health	Human Toxicology
Prabhat Goswami, Ph.D. Professor prabhat-goswami@uiowa.edu B180 ML	Radiation Oncology	Free Radical & Radiation Biology, Molecular & Cellular Biology, Human Toxicology
Steven Green, PhD. Professor steven-green@uiowa.edu	Neuroscience, Biology	Human Toxicology, Molecular and Cellular Biology

238 BBE		
Keri Hornbuckle, Ph.D. Professor keri-hornbuckle@uiowa.edu 3100 SC	Civil & Environmental Engineering	Human Toxicology
Bahri Karacay, Ph.D. Adjunct Associate Professor bahri-karacay@uiowa.edu 216 Medical Research Center	Pediatrics	Human Toxicology
Joel Kline, M.D. Professor joel-kline@uiowa.edu C33 GH	Internal Medicine	Immunology, Human Toxicology
Hans-Joachim Lehmler, Ph.D. Associate Professor (Research) hans-joachim-lehmler@uiowa.edu S353 CPHB	Occupational & Environmental Health	Human Toxicology
Paul McCray, M.D. Professor paul-mccray@uiowa.edu 200 B EMRB	Pediatrics	Genetics, Human Toxicology
Matthew Nonnenmann, PhD. Assistant Professor matthew-nonnenman@uiowa.edu S335 CPH	Occupational & Environmental Health	Human Toxicology
Thomas Peters, Ph.D., M.S., B.S. Associate Professor of Industrial Hygiene thomas-m-peters@uiowa.edu S331 CPHB	Occupational & Environmental Health	Human Toxicology
Andrew Pieper, MD, PhD Associate Professor andrew-pieper@uiowa.edu B002 ML	Psychiatry	Human Toxicology, Neuroscience
Diane Rohlman, MA, PhD Associate Professor diane-rohlman@uiowa.edu S324 CPHB	Occupational and Environmental Health	Human Toxicology
Paul Romitti, MS, PhD Associate Professor paul-romitti@uiowa.edu S416 CPHB	Epidemiology	Human Toxicology
Aliasger K. Salem, Ph.D. Associate Professor	Pharmaceutics	Cancer Immunology and Immunotherapy Program

aliasger-salem@uiowa.edu S228 Phar		
Jerald Schnoor, Ph.D. Professor jerald-schnoor@uiowa.edu 4119 SC	Civil & Environmental Engineering	Human Toxicology
Andrean L. Simons-Burnett, PhD Assistant Professor andrean-simons@uiowa.edu 1161 Medical Laboratories	Department of Pathology	Human Toxicology
Douglas Spitz, Ph.D. Professor douglas-spitz@uiowa.edu B180-E ML	Radiation Oncology	Free Radical & Radiation Biology, Human Toxicology
Jerrold Weiss, Ph.D. Professor jerrold-weiss@uiowa.edu D158 MTF	Internal Medicine	Immunology, Human Toxicology
Dale Wurster, Ph.D. Professor (Senior Associate Dean) dale-e-wurster@uiowa.edu S215 PHAR	Pharmaceutics	Human Toxicology
Michael K. Schultz, Ph.D. Associate Professor Michael-schultz@uiowa.edu B180 ML	Radiation Oncology	Free Radical & Radiation Biology, Human Toxicology, Biosciences Graduate Program

APPENDIX 2 Toxicology Master's Degree Sample Curriculum

Year One: Fall Semester

Course Number	Course Name	Credit Hours
PHAR:6501	Principle Mechanisms of Chemical Toxicology	1 hr *Jonathan Doorn*
PHAR:6502	Toxic Agents and Concepts in Toxicology	1 hr *Jonathan Doorn*
PHAR: 6503	Target-Organ Toxicity	1 hr *Jonathan Doorn*
OEH:4240	Global Environmental Health	3 hrs *Peter S Thorne*
TOX:7180	Toxicology Seminar	0 hr *Hans Lehmler*
TOX: 7173	Toxicology Journal Club	2 hrs *Larry Robertson*
TOX:7201	Toxicology Research	4 hrs
		Total: 12

Year One: Spring Semester

Course Number	Course Name	Credit Hours
OEH:5710	Environmental Toxicology	3 hrs *Peter Thorne*
TOX:7201	Toxicology Research	3 hrs
PHAR:5537	Enzymatic Basis of Drug Metabolism	3 hrs *Mike Duffel*
TOX:7173	Toxicology Journal Club	3 hrs *Larry Robertson*
TOX: 7180	Toxicology Seminar	0 hr *Hans Lehmler*
		Total: 12

Year Two: Fall Semester

Course Number	Course Name	Credit Hours
FRRB:7000	Redox Biology and Medicine	4 hrs *Garry Buettner*
OEH:6720	Advanced Toxicology	4 hrs *Larry Robertson*
TOX: 7173	Toxicology Research	2 hrs
TOX:7180	Toxicology Seminar	0 hr Hans *Lehmler*
BMED:7270	Responsible Conduct of Research 1	0 hr
		Total 10

Year Two: Spring Semester

Course Number	Course Name	Credit Hours
TOX:7300	Thesis/Dissertation	2 hrs
TOX: 7173	Toxicology Research	4 hrs
PATH:8133	Introduction to Human Pathology	4 hrs *Robert Tucker*
TOX:7180	Toxicology Seminar	0 hr *Hans Lehmler*
		Total 10

Thesis Requirement

TOX:7300	Thesis/Dissertation	≥ 6 hrs

Electives

Elective courses must be chosen to fulfill the minimum MS degree requirement of 39 semester hours. Students and advisors should select courses most appropriate to the individual student's professional goals.

Total Semester Hours Required for MS Degree (Minimum): 39 hrs, (24 hours need to be didactic).

APPENDIX 3 — Toxicology Ph.D. Sample Curriculum

Year One: Fall Semester

Course Number	Course Name	Credit Hours
TBD	Principles of Cellular and Molecular Biology	4 hrs *Fred Quelle*
PHAR:6501	Principle Mechanisms of Chemical Toxicology	1 hr *Jonathan Doorn*
PHAR:6502	Toxic Agents and Concepts in Toxicology	1 hr *Jonathan Doorn*
PHAR: 6503	Target-Organ Toxicity	1 hr *Jonathan Doorn*
PATH:8133	Introduction to Human Pathology	4 hrs *Tucker*
TOX:7173	Toxicology Journal Club	2 hrs *Larry Robertson*
TOX:7180	Toxicology Research Seminar	0 hr *Hans Lehmler*
TOX:7201	Toxicology Research	2 hrs
		Total: 15

Year One: Spring Semester

Course Number	Course Name	Credit Hours
OEH:5710	Environmental Toxicology	3 hrs *William Field*
PHARM:5537	Enzymatic Basis of Drug Metabolism	3 hrs *Mike Duffel*
OEH: 4540	Statistics for Experimenters	3 hrs *O'Shaughnessy*
TOX:7173	Toxicology Journal Club	2 hrs *Larry Robertson*
TOX:7180	Toxicology Research Seminar	0 hr *Hans Lehmler*
TOX:7201	Toxicology Research	4 hrs
		Total: 15

Year Two: Fall Semester

Course Number	Course Name	Credit Hours
FRRB:7000	Redox Biology and Medicine	4 hrs *Garry Buettner*
OEH:6720	Advanced Toxicology	4 hrs *Larry Robertson*
TOX: 7201	Toxicology Research	4 hrs
PATH:5260	Translational Histopathology	3 hrs *Gibson-Gorley*

TOX:7180	Toxicology Research Seminar	0 hr *Hans Lehmler*
BMED:7270	Responsible Conduct of Research	0 hr *Minetta Gardener*
		Total 15

Year Two: Spring Semester

Course Number	**Course Name**	**Credit Hours**
FRRB:7001	Molecular and Cellular Biology of Cancer	3 hrs *Fred Domann*
TOX:7201	Toxicology Research	9 hrs
OEH:4240	Global Environmental Health	3 hrs *Peter Thorne*
TOX:7180	Toxicology Research Seminar	0 hr *Hans Lehmler*
BMED:7271	Responsible Conduct of Research	0 hr Total 15
Thesis Requirement		
TOX:7300	Thesis/Dissertation	2 hrs

Electives

Elective courses must be chosen to fulfill the minimum Ph.D. degree requirement of 72 semester hours. Students and advisors should select courses most appropriate to the individual student's professional goals. Examples of electives follow:

Fall Semester

- PHAR:5544 Pharmaceutical and Chemical Toxicology (odd years) 3 hrs
- OEH:4220 US and Global Environmental Health Policy 3 hrs
- FRRB:5000 Radiation Biology 4 hrs
- CEE:5154 Environmental Microbiology 3 hrs
- MCB:6220 Mechanisms of Cellular Organization 3 hrs
- MICR:6267 Graduate Introduction to Animal Viruses 3 hrs
- IGPI:4213 Bioinformatics 4 hrs
- PHAR:5700 Quantitative Research Methods in Pharmacy

Spring Semester

- PHAR:5537 Enzymatic Basis of Drug Metabolism (even years) 3 hrs
- CHEM:5321 Spectroscopic Methods in Organic Chem 3 hrs
- IMMU:6201 Graduate Immunology I 3 hrs
- BIOL:3713 Molecular Genetics 4 hrs.
- BIOC:3140 Experimental Biochemistry 2 hrs.
- PATH:5270 Pathogenesis of Major Human Diseases 3 hrs
- GENE:7191 Human Molecular Genetics 3 hrs
- NSCI:6209 Steroid Receptor Signaling 3 hrs
- ACB:5218 Microscopy for Biomedical Research 3 hrs
- MICR:3160 Graduate Microbial Physiology 3 hrs
- MICR:6279 Bacterial Diversity 3 hrs
- IMMU:6201 Graduate Immunology I 3 hrs

Total Semester Hours Required for Ph.D. Degree (Minimum): 72 hrs

APPENDIX 4. Format and Timetable for a Comprehensive Examination Research Proposal in the Interdisciplinary Graduate Program in Human Toxicology (IDGP in Human Toxicology)

Title Page: Include the Title of the proposal, your Name, the Name of your Major Professor, the Names of the Members of your Doctoral Advisory Committee, and the Date of Comprehensive Examination.

Abstract: The abstract is a very important section since it serves as an accurate and succinct description of the entire proposal. It must include a description of the specific aims, central hypothesis, long-term goals of the work, a concise description of the research design to be employed, and the methods to be used to accomplish the specific aims. APPROXIMATELY ONE-HALF PAGE (Single Spaced).

Research Plan
Specific Aims: State concisely and realistically what the research described in this proposal is intended to accomplish and what hypothesis is to be tested. Provide a brief explanation of each specific aim to be completed in order to test the hypothesis. APPROXIMATELY ONE PAGE (Single Spaced).

Research Strategy: APPROXIMATELY TWELVE PAGES (Single Spaced) for this section

Background and Significance: Briefly describe the background to the present proposal, critically evaluate existing knowledge, and specifically identify the gaps in present scientific knowledge that the project is intended to fill. State concisely the importance of the research in the proposal by relating the specific aims to longer term objectives.
Approach: Discuss the experimental design and procedures to be used to accomplish the specific aims of the project. It is usually best to organize this section in relation to the specific aims and specific studies or sub aims proposed under each aim. Include clearly identified preliminary data that you have obtained to support the aims and experimental design. Identify any steps or procedures that may be problematic and suggest what alternative methods you might utilize if these problems occur. Be sure to indicate a tentative sequence of the investigation. Point out any procedures, situations, or materials that may be hazardous to personnel and describe the precautions that will be utilized.
Literature Cited: USE PAGES AS NECESSARY
Choose the format for literature used by a prominent journal in toxicology, Chem Res Toxicol, Tox Sci or TAP. Format your references accordingly, and provide complete citations. Each citation must include the names of all authors, the full title of the article or chapter, the name of the journal or book, volume number, page numbers, and year of publication. The reference style should be consistent in its format.

Timetable: Once the student and the Graduate Advisory Committee have agreed on a Hypothesis and Specific Aims, the major professor gives the go-ahead for the student to write the proposal, which the student has 4 weeks to complete. The student then distributes the proposal to the Doctoral Advisory committee at least 2 weeks prior to the scheduled Comprehensive Examination.

Additional Information: Forms for the Doctoral Plan of Study, Appointment of the Doctoral Advisory Committee and Scheduling the Comprehensive Examination, may be found on the Graduate College's website (search "forms") or at the Human Toxicology website (http://toxicology.grad.uiowa.edu/students/forms). These forms must be completed, signed by the major professor and the Director of the IDGP in Human Toxicology or the DGS (electronic signatures are acceptable), and sent to the Graduate College at least 2 weeks prior to the scheduled comprehensive examination.

APPENDIX 5 Policy for Changing Subprograms in the Biomedical Science Graduate Program:

Introduction: In setting up the umbrella Biomedical Science Graduate Program, it was agreed that students would have the prerogative to change subprograms (as students may for any PhD program/subprogram at UI). It was agreed that such changes would be uncommon, not encouraged, but possible. Given the complexities of our Program and subprograms, and the important implications for funding, a formal set of policies for changing subprograms is outlined below.

A student wishing to change subprograms should follow the steps outlined below, in the sequence in which they are presented, as relevant. Note that the final step, completing a Request for Change of Graduate College Status form for Graduate Admissions, must be completed with approval and oversight from the Office of Graduate and Postdoctoral Studies (OGPS).

1. The student should have a discussion with the DGS/Director of the subprogram the student is proposing to leave. The student should have a clear, compelling rationale for the proposal to change subprograms. "Compelling rationale" could include a strong realization and conviction that the student prefers a different field of biomedical science or has convincing career opportunities in a different field of biomedical science. Such rationale will not include unhappiness with particular subprogram requirements, difficulties with the comprehensive exam, or debate about the relative merits of different subprogram requirements. The student should obtain permission from the DGS/Director (of the subprogram the student is leaving) to change subprograms.

If such permission is not granted, and the student wishes to continue pursuing the request to change subprograms, the student's request will be evaluated by the subprogram's Executive Committee. The Executive Committee will render a decision. If the issue remains unresolved, the student's request will be evaluated by the CCOM Associate Dean of Graduate and Postdoctoral Studies, and a final decision will be rendered.

2. The student should have a discussion with the DGS/Director of the subprogram the student is joining, and should obtain permission from that DGS/Director to join that subprogram.

If such permission is not granted, and the student wishes to continue pursuing the request to join that subprogram, the student's request will be taken up by the destination subprogram's Executive Committee. If the Executive Committee upholds the decision to not grant permission to the student to join the subprogram, the student will not be permitted to join that subprogram.

3. For students who are still in the first-year rotation phase of their training, the student should have a discussion with the relevant DGSs/Directors (the one for the subprogram the student is leaving and the one for the subprogram the student is joining) about what will be counted for lab rotations, what remains to be completed for lab rotations, and the optimal timing for the subprogram change.

In the case of first-year rotation students, there may be funding implications of changing subprograms – e.g., the slot allocation for the student/subprogram may be affected, the student may be on a training grant, etc. Such financial implications should be discussed amongst the relevant DGSs/Directors and the CCOM Associate Dean of Graduate and Postdoctoral Studies, and a consensus should be reached.

Note: The policies articulated herein for changing subprograms in the BSP are not meant to address or otherwise cover situations where students are having difficulty affiliating with a lab home. The responsibility for placing students in a lab home lies with the subprogram into which the student initially matriculated. Changing subprograms should not be used as a mechanism to solve lab placement problems. Subprograms have the prerogative to place students in labs of PIs outside the subprogram, with appropriate agreements, co-mentoring arrangements, and full understanding by all relevant parties (so-called "subcontracting"). Such placements need not require the student to change subprograms.

4. When relevant (for students who are already affiliated with a PI/lab), the student should obtain permission from the student's mentor. The student may be staying in the same lab with the same mentor, or may be changing mentors/labs. In either case, the student should inform all relevant parties and obtain permission from all relevant parties.

Per Office of Graduate and Postdoctoral Studies (OGPS) and Biomedical Science Program (BSP) policies, the DEO of the supervising faculty member is required to approve lab affiliations. If a change of subprograms implies a change of the responsible DEO, the new DEO should be informed of the change, give permission for the change (if the DEO in fact approves), and accept responsibility for financial backstopping of the student (per standard OGPS/BSP policy). As in #1 above, situations where relevant permissions are not granted should be taken to the Executive Committee of the relevant subprogram(s), and then to the CCOM Associate Dean of Graduate and Postdoctoral Studies if the matter remains unresolved.

5. The student should obtain permission and approval from the CCOM Associate Dean of Graduate and Postdoctoral Studies.

6. The student should obtain a "Request for Change of Graduate College Status" form from the Graduate Admissions Office (115 Calvin Hall). The form should be completed by the student, and then submitted to the OGPS office for approval. OGPS approval is required prior to submitting the form to the subprogram the student wishes to transfer into. The form may then be finalized and signed by the subprogram the student is transferring into, and then submitted to Graduate Admissions per instructions on the form.