CELLULAR AND MOLECULAR PATHOLOGY, M.S.

The graduate program in cellular and molecular pathology (CMP) is a joint venture of the UW–Madison Department of Pathology and the School of Medicine and Public Health (SMPH). This interdisciplinary training environment, embedded in an exciting and challenging basic and clinical translational research context, offers a high level of intellectual stimulation for predoctoral training. The CMP curriculum is novel at the university, providing integrated training in fundamental concepts of modern pathobiology with an emphasis on biochemical, cellular and molecular approaches, and providing rigorous in-depth bench-level research training in understanding the fundamental bases of diseases. Trainees and trainers participate in rigorous pathobiology courses and activities, and are offered in-depth research training in the pathobiology of cancer, nervous and immune system diseases, and signal transduction in basic disease mechanisms.

ADMISSIONS

This master’s program is offered for work leading to the Ph.D. Students may not apply directly for the master’s, and should instead see the admissions information for the Ph.D. (http://guide.wisc.edu/graduate/pathology/cellular-molecular-pathology-phd)

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding) is available from the Graduate School. Be sure to check with your program for individual policies and processes related to funding.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/policiesandrequirementstext), in addition to the program requirements listed below.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Enrollment</td>
<td>30 credits</td>
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CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Minimum Credit Requirement</th>
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<tbody>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>Half of degree coursework (16 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university’s Course Guide (<a href="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required.</td>
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<tr>
<td>Other Graduate Coursework Requirements</td>
<td>Students must maintain a B average or better in all graduate courses.</td>
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<tr>
<td>Assessments and Examinations</td>
<td>Students must complete all required courses including PATH 809. Students must write a master thesis and defend it in front of their Advisory Committee. The M.S. thesis does not need to be published.</td>
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<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
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REQUIRED COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PATH 900</td>
<td>Seminar (every semester enrolled)</td>
<td>0</td>
</tr>
<tr>
<td>PATH 901</td>
<td>Student Seminar / Journal Club (every semester enrolled)</td>
<td>1</td>
</tr>
<tr>
<td>PATH 990</td>
<td>Research (every semester enrolled)</td>
<td>1-8</td>
</tr>
<tr>
<td>PATH 750</td>
<td>Cellular and Molecular Biology/Pathology (spring semester, first year in program)</td>
<td>3</td>
</tr>
<tr>
<td>PATH 802</td>
<td>Histopathology for Translational Scientists (fall semester, first year in program)</td>
<td>3</td>
</tr>
</tbody>
</table>
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**PATH 803**  Pathogenesis of Major Human Diseases (fall semester, second year in program)

**PATH 809**  Molecular Mechanisms of Disease (spring semester, second year in program)

Choose one of the following Statistics courses:

- STAT/F&W ECOL/ HORT 571  Statistical Methods for Bioscience I
- STAT/F&W ECOL/ HORT 572  Statistical Methods for Bioscience II

Choose one of the following Ethics courses:

- ONCOLOGY 675  Advanced or Special Topics in Cancer Research (Topic: Appropriate Conduct of Science)
- SURG SCI 812  Research Ethics and Career Development
- MED HIST 610  Regenerative Medicine Ethics and Society

**Elective Courses**

Within the 16 required credits, students will take one elective course. This course is chosen by the student and the Ph.D. thesis committee. The goal of the elective course is for students to acquire additional broad knowledge in either pathology or their major area of research. For the elective course, students may take one of the following:

- PATH 751  Cell and Molecular Biology of Aging
- PATH 709  Contemporary Topics in Cell Structure and Function
- Equivalent course approved by the Ph.D. thesis committee

1. Students in the CMP program are required to take an ethics course and receive instruction in the Responsible Conduct of Research (RCR), as stated below by the NIH: "The NIH requires that all undergraduate and graduate students as well as postdoctoral fellows receiving support through any NIH training, career development award, research education grant, or dissertation research grant must receive instruction in RCR. At least eight hours of face-to-face instruction is required; online education alone is insufficient. Instruction must be undertaken at least once during each career stage, and no less than once every four years."

**MAJOR-SPECIFIC POLICIES**

**GRADUATE PROGRAM HANDBOOK**

The Graduate Program Handbook (http://www.cmp.wisc.edu/sites/default/files/CMP-Student-Handbook.pdf) is the repository for all of the program’s policies and requirements.

**PRIOR COURSEWORK**

**Graduate Work from Other Institutions**

With program approval, students are allowed to count no more than 7 credits of graduate coursework from other institutions. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

**UW–Madison Undergraduate**

Up to 7 credits numbered 300 or above from a UW–Madison undergraduate career are allowed to count toward the degree with committee approval. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

**UW–Madison University Special**

With program approval, students are allowed to count no more than 7 credits of coursework numbered 300 or above taken as UW–Madison University Special students. coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

**PROBATION**

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

1. Good standing (progressing according to standards; any funding guarantee remains in place).
2. Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status).
3. Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program).

**ADVISOR / COMMITTEE**

All students are required to conduct a yearly progress report meeting with their advisor, scheduled by December 17 and completed by April 30. Failure to do so will result in a hold being placed on the student’s registration.

**CREDITS PER TERM ALLOWED**

15 credits

**TIME CONSTRAINTS**

Master’s degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements;
that coursework may not count toward Graduate School credit requirements.

OTHER
All students receive an annual stipend for $25,000 (2013–14 rate) for a 12-month appointment. It is the intention of the program to continue to award this stipend as a research assistantship throughout the student’s Ph.D. studies. During rotation the stipend will be funded by the department. Once the student has selected a lab, the primary investigator will fund the student from grant funding. To receive the stipend, the student must maintain full-time status of 8–12 credits per semester.

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES
Take advantage of the Graduate School’s professional development resources (https://grad.wisc.edu/pd) to build skills, thrive academically, and launch your career.

LEARNING OUTCOMES

1. Gain a better understanding the basic mechanisms of disease at the level of cell, organ, and body, as well as the morphologic expression patterns of selected common specific disease processes.

2. Articulates, critiques, or elaborates the theories, research methods, and approaches to inquiry or schools of practice in the field of study.

3. Identifies sources and assembles evidence pertaining to questions or challenges in the field of study.

4. Demonstrates understanding of the primary field of study in a historical, social, or global context.

5. Selects and/or utilizes the most appropriate methodologies and practices.

6. Evaluates or synthesizes information pertaining to questions or challenges in the field of study.

7. Communicates clearly in ways appropriate to the field of study.

8. Commit to increase professional growth and knowledge, to attend educational programs and to personally contribute expertise to meetings and journals.

9. Recognizes and applies principles of ethical and professional conduct.

PEOPLE