

CELLULAR AND MOLECULAR PATHOLOGY, PH.D.

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

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website. Graduate admissions is a two-step process between academic programs and the Graduate School. **Applicants must meet the minimum requirements** (<https://grad.wisc.edu/apply/requirements>) **of the Graduate School as well as the program(s).**

Once you have researched the graduate program(s) you are interested in, apply online (<https://grad.wisc.edu/apply>).

Requirements	Detail
Fall Deadline	December 1
Spring Deadline	The program does not admit in the spring.
Summer Deadline	The program does not admit in the summer.
GRE (Graduate Record Examinations)	Not required.
English Proficiency Test	Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (https://grad.wisc.edu/apply/requirements/#english-proficiency).
Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation Required	3

Applications to the CMP program are submitted in the fall of the year prior to your anticipated start date in the program. Students are then accepted into the CMP program in the spring of each year through a competitive application process that is administered by UW–Madison. Applications are due by December 1 for admission consideration the following fall. See more about how to apply on the program's website (<http://www.cmp.wisc.edu/prospective/howtoapply>).

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.

PROGRAM RESOURCES

Prospective students should see the program website (<http://www.cmp.wisc.edu/prospective/financial-support>) for funding information.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

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

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

Mode of Instruction Definitions

Evening/Weekend: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

Online: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

Hybrid: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

Accelerated: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

Requirements Detail

Minimum Credit Requirement	51 credits
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Minimum Residence Credit Requirement	32 credits
Minimum Graduate Coursework Requirement	Half of degree coursework (26 credits out of 51 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.
Overall Graduate GPA Requirement	3.00 GPA required.
Other Grade Requirements	Students must maintain a B average or better in all graduate courses.
Assessments and Examinations	Students must complete all required courses including PATH 809. They must pass their Prelim B exam after their second year of graduate school. Students must defend their Ph.D. thesis within five years of completion of Prelim Exam B.
Language Requirements	No language requirements.
Doctoral Minor/Breadth Requirements	For interdisciplinary or minor requirements, see http://www.cmp.wisc.edu/current/phd-interdisciplinary-minor .

REQUIRED COURSES

Code	Title	Credits
Required Courses		
<i>Continuous Enrollment</i>		
PATH 900	Seminar (every semester enrolled)	0
PATH 901	Student Seminar / Journal Club (every semester enrolled)	1
PATH 990	Research (every semester enrolled)	1-8
<i>Coursework</i>		
PATH 750	Cellular and Molecular Biology/ Pathology (spring semester, first year in program)	3
PATH 802	Histopathology for Translational Scientists (fall semester, first year in program)	3
PATH 803	Pathogenesis of Major Human Diseases (fall semester, second year in program)	3
PATH 809	Molecular Mechanisms of Disease (spring semester, second year in program)	2
Choose one of the following	Statistics courses:	4
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: ¹	
ONCOLOGY 675	Advanced or Special Topics in Cancer Research (Topic: Appropriate Conduct of Science)	
SURG SCI 812	Research Ethics and Career Development	

OBS&GYN 955 Responsible Conduct of Research for Biomedical Graduate Students

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 807	Immunopathology: The Immune System in Health and Disease

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."

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (<https://grad.wisc.edu/acadpolicy>) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

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 doctoral 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 doctoral 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

A candidate for a doctoral degree who fails to take the final oral examination and deposit the dissertation within five years after passing the preliminary examination may be required to take another preliminary examination and to be admitted to candidacy a second time.

Doctoral degree students who have been absent for ten 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 of 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 research problems, potentials, and limits with respect to theory, knowledge, and practice within the field of study.
3. Formulates ideas, concepts, designs, and techniques beyond the current boundaries of knowledge within the chosen field of study.
4. Creates research and scholarship that makes a substantive contribution.
5. Demonstrates breadth within their learning experiences.
6. Advances contributions of the field of study to society.
7. Communicates complex ideas in a clear and understandable manner.
8. Commit to increase professional growth and knowledge, to attend educational programs and to personally contribute expertise to meetings and journals.
9. Fosters ethical and professional conduct.

PEOPLE

Faculty: Ahmad, Alexander, Allen-Hoffmann, Andes, Arendt, Asimakopoulos, Attie, Atwood, Bendlin, Bresnick, Broman, Burger, Burkard, Burlingham, Bushman, Capitini, Coon, Currie, Deming, Denlinger, Djamali, Emborg, Engin, Evans, Fabry, Jing Fan, Fleming, Friedl, Friedrich, Gamm, Ge, Gern, Gibson, Golos, Greenspan, Gumperz, Guo, Halberg, Hematti, Huttenlocher, Iyer, Jones, Junsu Kang, Kenney, Kimble, Kimple, Klein, Knoll, Kuo, Lakkaraju, Lamming, Lang, Lee, Lewis, Liu, Lloyd, Loeb, Messing, Mezrich, Nett, Nickells, D. O'Connor, S. O'Connor, Okonkwo, Otto, Pepperell, Peters, Puglielli, Rapraeger, Rey, Roy, Rui, Sandor, Samanta, Sauer, Seroogy, Sheehan, Sheibani, Shusta, Shelef, Slukvin, J. Smith, Sondel, Sridharan, Sugden, Suresh, Suzuki, Svaren, Talaat, Taylor, Thorne, Vermuganti, Watters, Welham, Wheeler, Xu, Yoshino, Zamanian, Su-chun Zang, Zhao, W. Zhong