



University of Wisconsin-Madison
CMP
Cellular & Molecular Pathology

Cellular and Molecular Pathology Student Handbook, Fall 2023

Welcome to the University of Wisconsin-Madison's Cellular and Molecular Pathology Graduate Training Program. We are excited and happy to have you join our graduate program!

The first year of graduate school, like every first, can be a bit intimidating and overwhelming, but every graduate student goes through a transformative process that will prepare you to become a first-class researcher and comprehensive scientist. To assist you with questions you may have about the Cellular and Molecular Pathology (CMP) program we have put together this guide to serve as a reference during your years at the University of Wisconsin.

As you rotate, you will meet many current students from our CMP program and other graduate programs around campus. These people are great resources for answering questions you may have. We emphasize early on the importance of asking questions – this also applies to making sure you understand the program requirements of CMP. Now that you are in graduate school, you are responsible for making sure you have followed the guidelines and regulations for a degree.

2023-2024 Academic Calendar

Fall Semester		Spring Semester	
August 21 (M)	<i>CMP Orientation</i>	Jan 15 (M)	<i>Martin Luther King Jr. Day</i>
August 24 (R) Afternoon	<i>CMP Talks CMP Group Picture CMP Poster Session</i>	Jan 23 (T)	<i>Instruction begins</i>
August 30 (W)	<i>Grad School Welcome 11am-4:30pm</i>	March 23- 31	<i>Spring recess</i>
August 31 (R)	<i>SMPH New Graduate Student Welcome</i>		
Sept 4 (M)	<i>Labor Day</i>	April 1 (M)	<i>Classes resume</i>
Sept 6 (W)	<i>Instruction begins</i>	May 3 (F)	<i>Last class day</i>
Sept 15	<i>American Players Theatre Outing</i>		
Nov 23-Nov 26	<i>Thanksgiving Recess</i>	May 4 (S)	<i>Study Day</i>
Dec 13 (W)	<i>Last class day</i>	May 5-10	<i>Exams</i>
Dec 14 (R)	<i>Study Day</i>		
Dec 15 (F)-21 (R)	<i>Exams</i>		

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INFORMATION RESOURCES


Questions? Many of your questions can be answered by your **CMP Buddy** or during the **Welcome Week** activities. Other resources include the department administration, a trainer, or the pathology website (www.cmp.wisc.edu). The CMP committees and subcommittees, which are listed toward the end of the CMP Manual, will be able to help you with any questions on their committee topic.

CMP Buddy Program

The CMP Buddy program exists to help orient you to the CMP program and graduate life in Madison, WI. Each 1st year student is assigned a current CMP student as "a buddy." Your buddy has already navigated issues such as finding a rotation lab or a downtown apartment, so it is greatly to your advantage to send your buddy an email if you need advice. Please contact Joanne if you need any information about your buddy.

Welcome Days Events

Welcome Week events serve to advise and orient new graduate students to the Cellular and Molecular Pathology program. Welcome Week also serves to introduce students to their future classmates and collaborators with informal group activities. This year events will take place over the course of 2 weeks.



WHERE TO BEGIN: YOUR FIRST TASKS

E-mail

To establish an email account, visit My UW and click "Activate my NetID." Follow the instructions on the screen to register for an email account. If you have technical problems, please contact DOIT at 608-264-HELP (4357).

Campus ID

A student must present a photo ID to receive their student ID card. The Campus ID card is issued at Union South, Room 149. **Hours** Monday-Friday 8:30 a.m.- 5:00 p.m. (closed weekends)

Check out this link for more detailed information. <https://wiscard.wisc.edu/id-card/how-to-get-your-wiscard/>

Bus Pass

Once a student has obtained their campus ID, they can purchase a bus pass. The 80 campus circulator is free. For other routes check information here: <https://asm.wisc.edu/buspass/>

Mailboxes

During rotations, students' mail will be placed in a "New Grads" mailbox in the Pathology Mail Room (3170 MFCB). Once a thesis lab has been established the student's mail will be directed to their lab. Since almost all mail is electronic you will have very little mail collect, if any at all.

Class Registration

To register for classes, the student must first activate their NetID. The NetID will give the student access to their personalized My UW. Along the top of the My UW webpage, there is a tab for registration. The student will receive an invitation to register from the registrar's office at the beginning of each semester by email. Following the time listed in the email, the student can register for courses via the course search and enrollment app in My UW. If the student has a hold on their registration, they should contact the individual that placed the hold on their registration in order to satisfy the necessary requirements to have the hold removed.

How to Register

The Registrar's Office will send all eligible students registration information to register online through the My UW website. All pre-dissertator students are required to register for at least 8 (but up to 15) credits during the fall and spring semester and 2 credits during the summer semester. Dissertators register for 3 credits during all semesters.

To register:

1. Go to My UW.
 2. Login using your NetID and password. Your NetID is the same as the first part of your email address (i.e. bucky@wisc.edu; NetID is bucky).
 3. Once you sign-in you should find The Course Search and Enroll app under your "My UW"
- The app is pretty straightforward but should you run into trouble:

How to get help

Technical assistance with the course search and enrollment <https://registrar.wisc.edu/course-search-enroll/> is provided by the [DoIT Help Desk](#). You can also reference the help documents <https://kb.wisc.edu/registrar/page.php?id=87287> for an overview of common errors that students receive, including course validation, instructor/department consent, requisites, and enrollment info.

Continue to add classes until you have reached at least 8 credits but have not exceeded 15. (Enrolling in 8-15 credits is required for fulltime student status.) If you try to register for more than 15 credits, you will receive an error. After becoming a dissertator (following successful completion of Preliminary Exam B), you will only register for 3 credits each semester. Any problems with registering should be directed to Joanne Thornton (jnthornt@wisc.edu, 608- 262-2665).

To find Key Registration Dates for Graduate Students, see the Office of the Registrar's website. <https://registrar.wisc.edu/dates/>

Research Credits (Pathology 990)

At the beginning of each semester, the Graduate Program Coordinator will enter permissions for CMP students to register for Pathology 990 research credits under their major professor. Rotating first year students will be authorized to register under Dr. Zsuzsanna Fabry, Chair of the CMP Steering Committee.

Students should register for enough research credits (between 1-8) to have fulltime student status (between 8-15 credits). For example, if a student is registered to take 6 credits of classes, they should register for an additional 2-9 credits in order to qualify as a fulltime student.

Student Seminar Series (Pathology 901, Course Director, Dr. Zsuzsanna Fabry)

Students are required to register for the student seminar series each semester (fall and spring) and to give a presentation once a year. First year students may be required to present a journal article, while students who have become established in their laboratory and in their thesis, project will be required to present on their lab work. [Students are allowed one unexcused absence per semester](#)

Pathology Seminar Series (Pathology 900)

Students are required to register for the pathology seminar series each semester (Fall & Spring). Students are required to present for the pathology seminar series, the year before they graduate, if the schedule permits. On days when outside speakers are presenting, and the seminar is given face to face, lunch will be provided following the seminar for the CMP students and the speaker. We ask students to put

computers and phones away and give each speaker their full attention. Students are allowed one unexcused absence per semester.

Problems Registering

If you are unable to register for a course, call the corresponding department to obtain authorization. The department office will need your name and UW ID number to enter you into the appropriate system. They will provide you with a five-digit number which will allow you to register for the course.

CMP ROTATIONS

The CMP program requires that you do three rotations during your first semester. The rotations are meant to make sure that you fit in/get-along with the lab you are interested in and that you get into the lab that you feel will best match your goals for graduate school. After all, you will be spending at least 3-6 years in the lab you choose; you want to be confident you are happy with your decision.

It is imperative to try to arrange your lab rotation schedule as early as possible. **Trainers in CMP also participate in other graduate training programs, so late requests for rotations may be responded to with “sorry, already full” replies.** CMP Orientation and The CMP Research Retreat/Poster Session is an ideal place to acquaint yourself with the research and professors and to fill your rotation schedule if you have not already done so.

First year students must rotate in three laboratories before making their final decision. The rotations should last about 4 weeks.

Questions to Keep in Mind When Making Your Decision

Being new to the program, it can be difficult to decide among the trainers which labs would be beneficial and interesting to rotate in. To help with the process of deciding, the program orientation includes a series of trainer talks to help students get a glimpse of what each lab has to offer and is currently researching. You should also discuss your lab choices/rotation plan with your assigned first year advisor.

Below are a few questions students should keep in mind when choosing lab rotations and should ask the faculty member about if it is unclear:

- Are you looking for a graduate student to join your lab this year?
- Is the funding for a graduate student position already available or pending?
- If I joined your laboratory, will I be expected to establish my own funding (through fellowships, teaching assistantships, project assistantships, etc.)?
- How many graduate students have you agreed to have rotate through your laboratory?
- How many graduate students are you expecting to accept from those that are rotating (in both the Pathology Graduate Program and other programs)?
- What expectations do you have for rotating graduate students?
- What is the expectation for the amount of time spent in the lab?
- Approximately how long does a graduate student in your lab take to complete their Ph.D. degree?
- How accessible are you to a rotating student? (Be sure to discuss the specific time you would be rotating in the lab.)

Example Rotation Schedule

Lab Rotation 1	September 6-October 4
Lab Rotation 2	October 5-November 2
Lab Rotation 3	November 3- December 1

**You should not have gaps between your rotations
After each rotation please contact your first-year advisor with an
update. It's possible your advisor may suggest meeting.
CMP Advisors:**

**Donna Peters, PhD, dmpeter2@wisc.edu
Tyler Ulland, PhD, tulland@wisc.edu
Adam Bailey, MD, PhD, albailey@wisc.edu**

What to Expect during Rotations

Rotations are meant to be an introduction into a laboratory where the student may have an opportunity to do their thesis research. The rotation time should be spent on a project decided on by the student and the primary investigator (PI) of the laboratory. The project should be something that the student could realistically accomplish in a month's time and should reflect work similar to that which they would be performing in the laboratory.

The student should decide with the primary investigator how much time they are expected to be in the lab when they are not in class and what expectations the primary investigator has for them during their lab rotation. This time should be spent not only researching but also interacting with the current lab members and the primary investigator to make sure that the student has the same expectations of themselves as those expectations held in the lab.

As previously mentioned, the lab rotations should last **about 4 weeks**. This time is spent getting familiar with the research focus, the work expectations, and the people in the lab. This also gives the trainer time to get to know you. During a rotation you will often participate in a short-term project. At the end of the three or four rotations, students should report their final lab decision along with the written concurrence from the PI of that laboratory to the department office.

First Rotation

The first rotation should begin in the first few weeks of classes and the last rotation should be completed by the end of the first semester. At the completion of each rotation, both you and the faculty member sponsoring the rotation will need to fill out a rotation evaluation form. Both student and faculty forms can be found here: <https://cmp.wisc.edu/cmp-forms/>

After the completion of all your rotations, you should choose your major professor as soon as it is possible, **but not later than December 15**. You should contact Joanne and Dr. Peters, Dr. Ulland, or Dr. Bailey with any problems/concerns.

Things to do your first week on rotation

When you start a rotation you will be assigned bench space in the lab to carry out your research. Early on you need to familiarize yourself with the layout of the lab—where is the clean glassware kept? Where are reagents pHed? You will also need to pay attention to how the lab is run—who does what jobs and what hours are people in the lab? Good ways to answer these questions is to observe first and ask if you still do not have the answer. Your first week, take the initiative to introducing yourself to everyone in the lab (at a time when they are not in the middle of an experiment).

Asking people about their projects is a good way to learn more about the particular facets of your lab's research and the people who inhabit it.

Your first week in lab--take notes!

You will have a plethora of new information thrown at you and it is impossible to remember every detail. Don't be intimidated if you are not familiar with the experiments performed in the lab. A lab rotation is a great learning experience! Also, there is nothing wrong with ignorance when you first encounter a problem—there is a problem only if you do nothing about your lack of knowledge. Always plan to do a lot of background reading on the lab focus.

Reading orients you so you can properly place the research question you seek to answer in context with what is already known.

Your first week perform an experiment! There is no better way to get your feet wet. Try to keep your first one simple to increase the odds of success.

Things NOT to do your first week on rotation

It can take a few days to start running new experiments. During this time you will have some downtime. Avoid the temptation to check Facebook or read the newspaper. You will make a better first impression if that time is spent reading lab publications.

Everyone is prone to mistakes the first time they do anything. If you make a mistake, fess up. Do not pretend that nothing happened. On this note, when you are handed a protocol, follow it exactly as you are told. If anything goes wrong with an experiment, lab members will be unable to help you if you tried something different than what they are familiar with running.

If you happen to run a familiar experiment during your rotation, listen and take notes on the new protocol. It is a mistake to frequently mention how you used to do the experiment in a previous lab. You can try to vary or improve the protocol later. For now, your comments will be better received if they are about the experiment you are currently doing rather than one you tried in the past.

Lastly, it is wise to avoid misusing the lab printer or photocopier for personal reasons. Lab budgets are tight and this includes paper and ink. Many professors are ok with printing some class materials in the lab, but ask for permission first.

PROGRAM BENEFITS

Stipend and financial support

All students will receive an annual stipend \$33,000 (pre-tax) for a 12-month appointment during the 2023-2024 year. Students need to maintain full time student status during their training. During the rotation period, for most students, the stipend will be funded by the department. After selecting a laboratory, the student will either be funded as a Research Assistant by the PI of the lab or through a fellowship. There are fellowships available outside the university and there are several opportunities at UW, including:

- Funding through the CMP program – Each year, several students receive funding through the T32 CMP training grant for a single year with an opportunity for renewal.
- Molecular Biosciences Training Grant Program
- Advanced Opportunities Fellowships (AOF) for underrepresented minorities
- **You can also visit:** <https://grad.wisc.edu/funding/>, and <https://grad.wisc.edu/funding/external-fellowship-database/> and <https://traininggrants.wisc.edu/currenttraininggrants/> for other funding ideas

Tuition & fees <http://www.bussvc.wisc.edu/bursar/tuitdued.html>

Tuition is paid by the department during rotations. Once a PhD thesis lab is chosen, tuition is paid by the PI. Students should not receive a tuition bill, if they are enrolled full time. **If a student receives a tuition bill, contact Joanne Thornton (jmthornt@wisc.edu; 608-262-2665) in the CMP office, as soon as possible.** Failure to clear up the mistake will make you responsible for the \$100 non-refundable fee issued by UW for a late tuition payment. Visit the Bursar's Office website for deadlines and late fee information.

All Research Assistants are required to pay a mandatory segregated fee of approximately \$1500/year (approx 650 fall and spring semesters, summer is less) to cover the cost of student union membership, bus passes, university health services, student organizations on campus, use of the recreational facilities, etc. Students who are on training grants or fellowships are not required to pay these segregated fees.

Payment can be made either online at MyUW or at the Bursar's Office (333 East Campus Mall #10501; office hours: 7:45am - 4:30pm) through the Friday of the third week of classes. Failure to do so will result in a \$100 non-refundable late fee issued by the university. Fee charges must be paid by the due date indicated on the tuition and fee statement to avoid a \$100 late fee. Information about fees can be found here: <https://grad.wisc.edu/documents/tuition-and-fee-information/> The university does have a fee payment plan available for all students for fall and spring semesters. You can find that information here: <https://bursar.wisc.edu/student-tuition-account> Look for information on BadgerPay. There are some instances when fees are covered. Students on our T32 training grant have fees covered for all semesters on the grant. **Unless you have documentation saying your fees are covered, contact Joanne immediately at the beginning of a semester if you do not see a fee charge in your student center. The problem will compound if you disregard.**

Health insurance and other benefits

Graduate students and their spouses and children are eligible for state health insurance benefits at minimal cost. A research assistantship also awards additional benefits such as life insurance, dental insurance, etc. Contact Janelle Rees (jlrees@wisc.edu, (608-265-5611) for further information regarding these benefits.

Another health care option is University Health Services (UHS), which is covered by the segregated fees. (Call 608- 265-5600 or go online for an appt.) UHS does not cover hospitalization, prescriptions, or emergency room fees.

DIRECT ADMIT STUDENTS

Direct admit students are accepted to the CMP Program directly under a CMP trainer that will serve as their major professor from their start date in the program. Thus, they do not participate in laboratory rotations. Direct admit students must, however, be accepted by the Recruitment Committee and meet the minimum application requirements of the program.

Direct admit students will obtain benefits, registration, payroll information, etc. from the home department of their major professor. For example, if the student is directly admitted into a lab where the trainer's main department affiliation is Pathology, he or she would contact the HR staff person for Pathology.

Academic issues (i.e. submitting certification and progress forms, warrant requests) will be sent to the Pathology Graduate Office (not the primary trainer department)

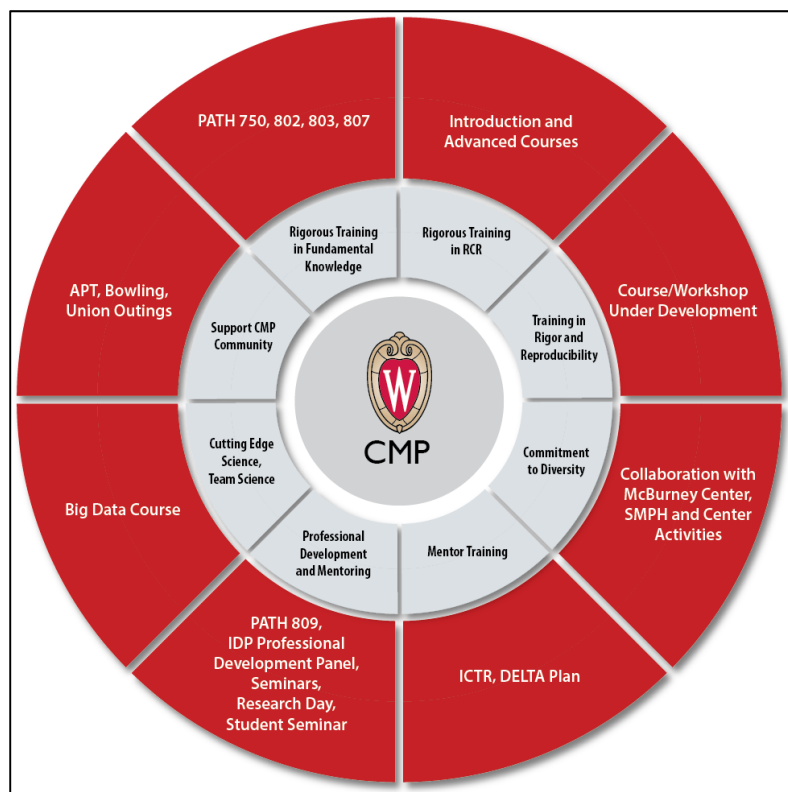
Registration

Registration will remain the same for direct admit students as it is for those who will be rotating. The only difference is that a direct admit student will register for research credit under their major professor, not the Director of the CMP Program.

Stipend

The stipend for any directly admitted student will be paid by the major professor's funding.

CURRICULUM



The overall **objective** of CMP is to educate trainees so that they have a fundamental knowledge of pathology and molecular medicine, and have an in-depth research experience that combines pathobiological and translational clinical research. Additionally, we aim to increase each student's appreciation of how specific disease processes directly impact individual patients, while fostering the application of the student's specific research area to challenge existing concepts in clinical care and treatment. CMP trainees are also encouraged to gain teaching experience and obtain a unique perspective on the possibilities and challenges of teaching cellular and molecular biology and pathology at both the undergraduate and graduate level. Our **specific objective** is to ensure optimal PhD completion rates and time-to-degree with the implementation of monitored IDPs, student success and progress monitoring using program online administrative databases and mentoring committee support. CMP objectives will integrate

measurable outcomes the program intends to achieve, such as appropriate completion rates, career placement outcomes and diversity student retention rates.

The Goals of CMP training are to provide:

Operational Skills:

- Focus on rigorous fundamental knowledge, significant training in ethics (RCR), rigor (RR) and state-of-the art methods for innovative research design and critical thinking.
- Experience for conceptualizing scientific problems, hypotheses and developing appropriate experimental approaches to test these.
- Empower students with rigorous knowledge combined with analytics that will enable them to critically challenge existing paradigms of disease treatments and pathogenic mechanisms.
- Provide inclusive and collaborative team-based interdisciplinary educational environment that will support diversity.

Technical Skills:

- Training in state-of-the-art methods and technology.
- State-of-the-art quantitative and computational training.
- Integrate RR training with all courses and teaching experiences.

Professional Skills:

- Provide skills needed for transition into careers in the rapidly evolving field of biomedical research and emphasize trainee development (organize professional development panels and career workshops).
- Provide platforms for presenting research findings and an environment for interacting with members of the scientific community at scientific meetings and workshops (support student seminars and presentations at national or international meetings).
- Provide a nurturing inclusive environment with commitment to all trainees through the completion of their training by offering individual development plans (IDPs) integrated with careful oversight and mentoring.
- Provide teaching experience that will prepare CMP trainees for diverse careers in the rapidly evolving biomedical research.
- Provide leadership training and opportunities ensuring student participation on all program committees including the Steering Committee. Listening to our students is a crucial component of CMP training and it is important for program improvement and evolution.

The CMP program specifically focuses on the pathogenesis of human diseases with an integration of basic and clinical medical knowledge of disease into graduate education. Our Program offers pathology-based insights into human diseases with unique courses, such as PATH 803 “Pathogenesis of Major Human Disease” and PATH 802 “Histopathology for Translational Scientist.” PATH 802 is offered only to CMP students. This is a unique opportunity for graduate students to integrate medicine into graduate training and to gain medical and clinical laboratory knowledge. The CMP Program is the only graduate program on the UW campus where this hands-on translational research opportunity is available. This course clearly distinguishes our Program from other training programs on this campus. Our goals are to increase each individual CMP student's appreciation of how disease processes directly impact an individual patient and to stimulate ideas for the possible applications of the student's own laboratory research into specific disease processes. No other program on the UW campus provides an opportunity for clinical, autopsy/gross organ anatomy-based pathogenesis training to PhD candidates.

A typical curriculum should include the following courses:

CMP Core Curriculum

Trainees will be expected to have in-depth knowledge of cellular and molecular biology and pathology. Courses are chosen to provide each student with a background in the four focus group areas and in basic areas of biochemistry, cell and molecular biology, and genetics in preparation for in-depth study of the cellular and molecular pathogenesis of disease. Courses taken to satisfy the PhD requirement are selected by the student and his/her advisor. Courses must contribute to an organized program of study and research.

The CMP Steering Committee has designed a set of guidelines to aid the students and their advisory committees in the task of constructing an appropriate series of formal course requirements.

Each semester, CMP students are required to sign up for research credit and two seminars, Path 900 and Path 901. These do NOT count towards the 16 credits required for the major.

Required Core Courses for CMP include the following courses:

Course	Semester Offered	Professor	Credits
Path 802 Histology for Translational Scientists	Fall 1 st year	Xiaofei Zhang (Clinical contributor)	3
Path 750- Cellular & Molecular Biology/Pathology	Spring 1 st year	Dan Matson	2
Path 752- Cellular & Molecular Biology/Pathology Seminar	Spring 1 st year	Dan Matson	1
Path 803- Pathogenesis of Major Human Diseases	Fall 2 nd year	Zsuzsanna Fabry , Matyas Sandor, and Tyler Ulland	3
Pathology 809- Prelim A course Cellular & Molecular Mechanisms of Disease	Spring 2 nd year	David Evans	2
Pathology 901- Student Seminar Course	Fall/Spring	Student-run	1
Pathology 900- Pathology Seminar Series	Fall/Spring	Matyas Sandor	0
Professional Development Courses and workshops, Ethics	continuous	CMP trainers	0-1
RCR: introductory and advanced	Fall 1 st and Spring 3 rd year	CMP trainers	1-2
Statistics (no longer required beginning with 2021 incoming class.)	Fall 1 st or 2 nd year	Stats Dept	2-4
Path 755- RCR/Rigor and Reproducibility (starting Fall Semester 2022)	Fall 1 st year	Tyler Ulland Mariana Pehar	2
OBGYN 956 Advnced RCR training	Spring 3 rd year	TBD	1

Students must also take at least one of the following courses or equivalent courses approved by the student's mentoring committee:

Course	Semester Offered	Professor	Credits
Pathology 751- Cell & Molecular Biology of Aging	Fall (even years)	Rozalyn Anderson	2
Pathology 807- Immunopathology	Spring (even yrs)	William Karpus	2
Path 970 — genomics, proteomics, and metabolomics: a deep dive into omics data analysis (two week intensive course)	Spring	Thomas Raife (Clinical contributor)	2

Courses that are selected for the core curriculum are detailed below:

Path 750 Cellular & Molecular Biology/Pathology - Emphasizes 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. Focuses on different cell types and how cells function. We also discuss how cells talk to themselves and each other. Topics include mechanisms of cell survival and division. Provides an overview of a broad set of cell biology topics to demonstrate the breadth and diversity of cellular functions.

Path 752- Cellular & Molecular Biology/Pathology Seminar- 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. Discussions focus on immunology and cancer biology. Topics include mechanisms of cell survival, cell division, signal transduction, gene expression, vesicular transport, autophagy and cell death. Explore a broad set of cell biology topics, in greater detail such that they will have a better understanding of the breadth and diversity of cellular functions by the end of the semester. Learn how to critically evaluate the literature and the rigor of research.

Pathology 802 Histopathology for Transitional Scientists- At the conclusion of this course, students should: gain an appreciation of how disease processes directly impact patients; be able to distinguish the morphologic patterns of normal versus pathologic tissues; be familiar with the pathogenesis of selected common disease processes; and recognize how basic laboratory research may be applied to specific disease processes.

PATH 803 Pathogenesis of Major Human Diseases -This course focuses on the mechanisms of diseases that are major causes of global death and disability.

PATH 809 Cellular & Molecular Mechanisms - This course is evidence-based learning that is given in lieu of a Preliminary A exam. This course will help to determine whether CMP students meet the requirements of the CMP competency standards (in-depth knowledge; critical thinking; excellent writing skills, capable of challenging standard

disease treatments; synthesizing complex problems). The course consists of professional development lectures on individual development plans and career choices, grantsmanship, group discussions, and one written mini-grant proposal. The discussion is student run and faculty monitored and provides background discussion designed to help the students write their grant proposals. The hypotheses of the R21-style grant proposals are provided by the students and must be from areas outside the student's research area (outside of the student's focus group affiliation). Each student is also expected to write a critique similar to an NIH review (Scale 1-9) on two of the R21 grant proposals. A student who fails the course can only retake it once. If students pass with deficiencies, they work with the course director to correct the deficiencies in their proposal.

PATH 900 Pathology Seminar Series - The bi-monthly Pathology seminars provide both a broad and in-depth knowledge into the pathogenesis of diseases. Invited speakers from UW and other institutions present seminars. When outside speakers are invited for a face to face presentation, we host a luncheon for the students to interact with the speaker less formally. This is an opportunity for the CMP students to set up possible collaborations or postdoctoral positions.

PATH 901 Student Seminar Course - This is an outstanding opportunity for CMP students to meet bi-monthly to discuss their research, and gain presentation experience. Similar to other seminar series, the student speaker distributes an abstract in advance of his/her talk. Although these seminars are student-focused, CMP faculty, including each individual's Principal Investigator, are also invited. In order to include all students, some students may co-present a topic. First year students may present a journal article or a brief overview of their chosen area of study so they can get experience giving presentations. Students and faculty evaluate student presentations in order to provide feedback and opportunities to strengthen each student's presentation skills.

RCR Courses (Appendix):

All trainees who are in CMP will complete an approved whole semester 14-week Introductory Research Ethics courses (Path 755, 2 cr) and one Advanced Research Ethics Course (OBGyn 956, 1 cr). Compliance is administered in the CMP Administration Office and reviewed at trainees' individual yearly mentoring committee meetings.

Professional Development: Life Sci Comm 560, Scientific Writing, 3 cr. Neuroscience 700, Professional Development for Biomedical Graduate Students, 1 cr. Grantsmanship professional development is part of the Path 809 (Prelim A) course.

UW-Madison offers a wealth of resources intended to enrich graduate studies and enhance professional skills. The Program encourages students to take advantage of the resources that best fit their needs and support career goals. Specific to CMP, during the PATH 809 we discuss information on the following resources provided by the Graduate School Office of Professional Development (<http://grad.wisc.edu/pd/>): Academic and professional skills; fellowship announcements and professional development opportunities, teaching, research, and entrepreneurship programs, graduate student awards, grants, travel money, and fellowships, as well as yearly events and symposiums. Career planning, choosing an advisor, developing a portfolio, applying for positions, getting funding, negotiating a salary are also addressed using resources provided by the Graduate School.

Additional Annual ethics/professional development training

Please go to the OHR Responsible Conduct of Research website and review the additional ethics/profession development training seminars <https://grad.wisc.edu/professional-development/> **You are required to attend a minimum of two PD seminars/workshops from this this or from other sources, every academic year.** After attending please send Joanne an email at jmthornt@wisc.edu with the date & title and sponsor of the seminar you attended.

CMP's organized Professional Development Event happens each August as the **Pathology Research Day(August) OR CMP Welcome Week/ Poster Session** and is a required activity for all students. Attendance at this event can count as one of the two required professional development/ethics activities.

State-of-the-art quantitative backgrounds relevant to the proposed training to pursue cutting-edge biomedical research: To monitor adequate quantitative education, CMP trainer, Dr. Karl Broman, Professor, Department of Biostatistics & Medical Informatics presents seminars in the Path Seminar series. We are working with him to monitor statistical courses, programing approaches and "big data" workshops for our students. Dr. Broman is also involved in Rigor and Reproducibility training and recently (November 2018) presented a seminar on Data Reproducibility for CMP students. Dr. Broman currently teaches "Introductory applied statistics for the life sciences" (Statistics 371), and is a co-instructor for "Statistical Methods for Molecular Biology" (Statistic 992). Dr. Broman also often presents a professional

development seminar in the Pathology Seminar Series on data presentation. (For example, “How to display data badly.”)

Statistics Courses (No longer required beginning with Fall 2021 incoming class but available for those interested)

Students in the CMP program are required to take a statistics course. This will help expose students to the key concepts needed to understand how to statistically analyze experimental data and how to design experiments with appropriate power. The following list of courses fulfills this requirement:

- *Biostatistics 541, Intro to Biostatistics, 3 credits*. This course provides a breadth in biostatistical methods for public health practitioners. **(Fall Only) This course is for students who have never had a statistics course.**
- *Biostatistics 571, Statistical Methods for Bioscience, 4 credits (Fall Only)*
- *Biostatistics 572, Statistical Methods for Bioscience II, 4 credits (Spring Only)*
- *Statistical Methods for Molecular Biology 877, 3 credits, (Spring Only-biennially)*

Electives that are selected for the enrichment of student’s curriculum are detailed below:

In addition to the core courses and electives outlined above, all students have the opportunity to complete an additional 9 graduate level credits toward a distributed minor. A suggested distributed minor would consist of advanced courses from the following areas: cell and molecular biology, genetics, immunology, biochemistry, oncology, virology or statistics. These courses should provide the student and their committee with the flexibility to complement a broad range of disease-oriented basic research projects. New, experimental, or special topics courses that offer advanced level training in these areas are highly recommended. <https://grad.wisc.edu/documents/minors/> **However, a minor for a CMP degree is not required. Please contact Joanne if you intend to add a minor to your degree.**

PATH 970 Clinical Genomics and Big Data. 2 credits. Integration of genomics with clinical data is key to transform personalized treatment of patients. Empowering students with the knowledge of genomics data combined with analytics will enable them to critically challenge existing paradigms of treatments. The course proposes a bottoms-up approach of dissecting sequencing platforms and methods for handling and obtaining somatic and germ line samples. A basic understanding of handling and analyses of electronic data formats and its utility with clinical variables will be extracted. Students who undertake this course will end up with a pipeline of designing experimental genomics with controls and analyzing data with standard routine statistical approaches that will create functional quantitative biological information at the global level. This course is a two-week 40 hour/week obligation that would pull you out of the lab and other coursework. Generally, students interested in this take it in the fall of their third year and need PI permission for the time commitment.

Additional Seminars: As part of fulfilling the CMP objective to provide a platform for student presentation, students are required to give a minimum of three seminars throughout their graduate career. Seminars can be given as part of the Pathology Seminar Series or at a regional, national, or international meeting. Additionally, dissertators are to present in Path 900 once, should the schedule permit. The following is a list of seminar courses that can be taken for credit: Biochemistry 907, Advanced Molecular Genetics; Biochemistry 903, Membrane Biochemistry; Botany/Zoology 965, Cellular and Developmental Biology; Bacteriology 901, Microbiology; Genetics 993, Seminar in Genetics; Oncology 901, Seminar.

Grades

PhD students must maintain a B average or better in all graduate courses. The Graduate School requires that a student maintain a minimum graduate cumulative GPA of 3.0 in all graduate-level work.

Timetable for Progress towards the PhD in CMP: The student’s progress is monitored by an Evaluation Rubric incorporated into the committee progress forms that need to be turned in as indicated in the timeline below. Failure to hand in the forms on time results in a warning from the CMP office; followed by a hold being placed on the student’s registration until the student complies. The student’s progress is noted on front of the forms as satisfactory, some concerns or unsatisfactory. All forms are signed by members of the thesis committee. If the CMP office sees that concerns or

unsatisfactory progress is noted, the Steering Committee is notified and the student's progress discussed. These forms also serve as a way to monitor the thesis mentor's training. Chronic unsatisfactory progress noted could result in trainer being removed as a trainer in CMP. CMP also requires the completion of an Evaluation Rubric <https://cmp.wisc.edu/cmp-forms/> by Student Advisory Committee members at the student's regular yearly progress meetings through the Prelim B exam. Evaluation Rubrics are kept in a digital database by the program office and reviewed by the Steering Committee to monitor student progress and success.

Year 1 (year 1 of T32 or supported Pathology Department, by advisor funds or individual fellowship)

Welcome Week

Follow HR guidance regarding signing up for Benefits

Attend Faculty Orientation Talk, and Path Research Day/CMP Poster session in August

Meet with Assigned Orientation Advisors (First Year Advisory Committee)

Contact faculty for rotations August 21-31- CMP requires 3 research rotations.

Register for classes, Fall semester by August 29.

Required coursework: RCR Introductory course, PATH 900; 901, PATH 750, 752 (Spring), and PATH 802 (Fall) and Research credits

First day of classes, September 6.

Choose three Lab rotations (supported by CMP or departmental resources or individual fellowships).

Complete & return rotation schedule to CMP office - you can also email Joanne with rotation dates and lab

Establish a Thesis Lab

Complete and return signed choice of Thesis Lab Form to CMP office by December 14.

Start in Thesis Lab December 15

Form a Thesis committee in consultation with thesis advisor.

Hand in Signed Thesis Committee Approval Form to CMP office by March 31

Hold Thesis committee meeting to review course work and research proposal by May 16.

Submit Thesis Committee Meeting Form signed by committee members by May 16.

Year 2 (year 2 of T32 or supported Pathology Department, by advisor funds or individual fellowship)

Continue bench research in trainer / thesis advisor's lab.

Required coursework: Pathology 803, 809, PATH 900; 901, one elective (PATH 751 Fall or PATH 807(alternate years) Spring), or equivalent course approved by the student's mentoring committee:

Schedule Preliminary B Exam by August 31 (may be for a fall date) – contact Joanne if you need more time

Attend CMP meetings and participate in CMP activities.

Year 3 (supported by advisor funds or individual fellowships)

Continue bench research in trainer / thesis advisor's lab.

Preliminary B Exam and hand in signed Preliminary B Exam Certificate to CMP Office by December 31

Required Coursework: PATH 900; 901 and additional optional electives depending on the student's interest

Attend CMP meetings and participate in CMP activities.

Advanced RCR course spring semester

Year 4 (supported by advisor funds or individual fellowships)

Continue bench research in trainer / thesis advisor's lab.

Schedule Thesis Committee to discuss student's Progress by March 31

Meet with Thesis Committee and hand in signed Progress Report Form to CMP office by August 31

Required coursework: PATH 900, 901

Give formal research presentation in the Pathology Seminar Series, if seminar schedule allows (PATH 900).

Attend CMP meetings and participate in CMP activities.

Strongly encouraged to participate in national or international meetings

Years 5 (supported by advisor funds or individual fellowships)

Continue bench research in trainer / thesis advisor's lab.

Required Coursework: PATH 900, 901

Schedule Thesis Committee to discuss student's Progress by March 31

Meet with Thesis Committee and hand in signed Progress Report Form to CMP office by August 3.

Attend CMP meetings and participate in CMP activities. Write, present, and defend thesis (3rd presentation); graduate; move on to postdoctoral fellowship or other diverse position in biomedical sciences.

Although there is no teaching requirement for CMP trainees, we encourage students to explore teaching experiences. Multiple teaching programs (DELTA, ICTR) are available for obtaining teaching skills. Several of our students have taken advantage of these opportunities. Most recently, one of our students received a research-education position based on her DELTA training. CMP also provides leadership training and opportunities ensuring student participation on all program committees including the Steering Committee.

CMP students also take advantage of the wealth of resources available outside the program intended to enrich graduate studies and enhance professional skills. The Program encourages students to take advantage of the resources that best fit their needs and support career goals.

Career Development: CMP uses Individual Development Plans (IDPs). CMP's goal is to provide assistance with appropriate individual development plans integrated with careful oversights and offering professional development experiences. IDPs are required for every trainee. IDPs are incorporated into the Advisory Committee review forms and discussed at trainees' committee meetings. Advisory Committee review forms and proof of student IDPs are digitally kept in a secured database on CMP server. Our informal survey indicates that IDPs help trainees to identify the career goals that are right for them and develop a step-by-step plan to reach those goals. The IDP is the product of a thoughtful analysis of the background, interests and needs of each student. IDPs include a mentoring plan that assesses the needs and goals of each student, description of short- and long-term career objectives, and outlining of professional development activities needed to reach them. IDPs are viewed as dynamic documents that are periodically reviewed and updated throughout an individual's training. The UW Graduate School has just completed work on their DiscoverPD website. Discover PD is an innovative tool for UW-Madison graduate students to advance their academic and professional goals. The site lists 9 facets of professional development and offers a self-assessment tool. Students who complete the survey receive a customized report of areas of strength and weakness. The report comes with recommendations to help students strengthen their abilities within each area. Over the last 5 years the UW graduate school has developed a strong, comprehensive series of professional development workshops and seminars. CMP students are now able to identify personal professional weaknesses using the survey tool and then select training that directly addresses their needs. <https://grad.wisc.edu/documents/individual-development-plan/>

Student Advisory Committees.

From the student's perspective, the most important administrative committee is the Student Advisory Committee that supervises their training progress. Each student's advisory committee is made up of a major professor, 2-3 CMP faculty and 1-2 UW or outside faculty, as outlined below. The student's major professor helps in choosing the additional Advisory Committee members. Responsibilities of the Student Advisory Committee include monitoring trainees to ensure they obtain their PhD degrees in a timely fashion with the skills, credentials and experiences to transition into careers in the biomedical research workforce that are consistent with the trainees' interests. This will be accomplished with a yearly meeting with students and completing student progress reports and evaluation rubrics. Progress reports are submitted to the program office and stored electronically.

Following the lab rotation period of graduate school, you will choose a thesis lab. At this point you need to complete and return the ***Thesis Lab Form by Dec 15th of your first semester*** to the CMP office. You and your new major professor will now work together to choose the members of your Student Advisory Committee.

An Advisory Committee of four or more tenure-track or tenured faculty members will supervise the training of each graduate student. At least three members of the Committee should be members of the CMP Program (including the major professor). Advisory Committee members will not only ensure your research aims and experimentation logically follow from the hypothesis you are trying to answer. They will also be a future source of recommendation letters and networking when you are searching for a postdoctoral position.

A more detailed composition overview of Student Advisory Committees:

Committee Composition: Four faculty members required, 3 must be CMP trainers, including the PI

- The PhD student's major professor*
- 3 tenure-track or tenured faculty members in the CMP program(including PI)

- 1-2 tenure-track or tenured faculty members outside the CMP program
- Occasionally, 1 extra trainer outside of the CMP program or UW can also be selected
- At least two different UW departments must be represented on your committee

(CMP strongly encourages students to include an MD on their thesis committee, but it is no longer a requirement)

- 3 committee members must be designated “readers”.
Readers are committee members who commit themselves to closely reading and reviewing the entire dissertation. The rationale for specifically designating non-reader status is to facilitate faculty participation in dissertations without automatically expecting the level of commitment associated with deeply engaging a PhD thesis. Given faculty workloads, designating a non-reader in some cases may permit faculty participation where engagement would otherwise be impossible.)
- Major Professor/s (either single major professor or “dual-mentorship” including one PhD and one MD mentor): When a student has “Dual-mentorship” committee, student supervision will be provided predominantly by the basic PhD mentor in the first year of training. After the student completes Prelim A and Prelim B requirements, students may be predominantly supervised by the MD mentor doing research in the student’s area of interest. Basic and clinical mentors will have joint lab meetings monthly, student committee meetings in every semester and regular joined journal clubs. Students freely move between the laboratories of major professors to complete their projects as necessary.
- Student Requirement - Doctoral degree recipients must acknowledge in the dissertation contributions received from other individuals, including co-authors of published work that appears in the document, such as in designing the research, executing the research, analyzing the data, interpreting the data/research, or writing, proofing, or copyediting the manuscript. Learn more here <https://grad.wisc.edu/currentstudents/doctoralguide/>

Roles of the Committee

1. To determine the coursework, the student should complete for his or her area of research specialty
2. To provide guidance to the student throughout their PhD studies
3. To evaluate the student’s preliminary exams and thesis defense

Typically, the first Committee meeting occurs during the summer of the student’s first year. The goal of this meeting is to discuss the student’s research area and choose appropriate classes to fulfill the completion of the coursework requirement. You will generally give a short PowerPoint presentation about your research aims and any data you have generated up to this point. The main purpose of this meeting is to pick classes, so do not stress yourself too much before the meeting. The Curriculum Certification form is filled out and signed by all committee members at this time.

Curriculum Certification Meeting

The student’s first meeting with the Advisory Committee is the Curriculum Certification Meeting. It should be scheduled by March 31, the same date by which the Committee composition must be decided, and completed by June 1.

The goals of this meeting are:

1. To discuss the student’s research area and choose appropriate classwork to take towards completion of coursework requirement
2. To complete and sign the [Certification Form](#)

The second committee meeting (often Prelim B) is typically scheduled in the summer of a student’s second year for the fall semester of the student’s third year. Following completion of the Prelim B, a student becomes a dissertator and committee meetings are continued to be scheduled annually to review progress. The goal of these meetings is to provide an evaluation for the student and learn about their overall progress towards degree as well as identify areas of strength and weakness. ***The Rubric Progress Report form should be used through the prelim B***

*meeting. The committee can fill a single form out after the presentation or each individual can complete a form. Generally, committees choose to complete a single form after the meeting concludes. **If you and your PI feel you are not ready for your Prelim B in the summer of your second year or fall of your third year, please contact Joanne.***

After each meeting you will also need to submit the Rubric(s) your committee used as assessment tool(s) as well as a summary of your professional presentations, professional development workshops attended, outside seminars, and conferences attended, etc. The Preliminary B exam and the final PhD thesis defense will also occur at these meetings.

About a month before your prelim B exam and 2 months before your Final Defense you'll need to contact your graduate program administrator. He/She will order warrants for the exams.

Mentoring Committee Meetings

The student and supervisor will hold progress reviews with the entire Thesis Committee at least once a year. These meetings help to ensure satisfactory progress towards the student's intended defense and graduation dates by ensuring seamless communication across the entire Thesis Committee on the student's aims, progress, and any issues encountered during their thesis research trajectory.

Students must have four types of Committee Meetings:

1. Annual Thesis Committee Meeting – Progress report will be submitted to CMP Office.
2. Prelim B: Oral Qualifying Exam – Thesis proposal presentation – documentation will be submitted to the CMP office
3. Final Thesis Committee Meeting Report within 6 months of defense.
4. Oral Defense of the Thesis

Annual Thesis Committee Meeting

Students are responsible for scheduling the meeting and reserving a room. **The Committee should be scheduled for max 1.5 hours, but preferably for 1 hour.** Students can contact the CMP Office for help reserving a conference room.

Progress Report Form

Prior to the meeting, students should fill out the Progress Report (CMP website) and bring hard copies for each Committee Member.

Timing

The first Annual Committee Meeting must be held within 6 months of the student's selection of the research lab. Annual Committee Meetings are required once a year or more frequently if the Thesis Committee so requests. More frequent one-on-one meetings are strongly recommended.

While CMP recognizes that there may be extenuating circumstances leading to a delayed Annual Thesis Committee meeting, but CMP reserves the right to withhold registration if the one-year mark has passed.

Preparation

One week prior to each Committee Meeting, the student is encouraged to share the Specific Aims of their project with their Committee Members. The Specific Aims should be approximately one to two pages long (12 pt font), with a few sentences describing the status of each Aim and a chart showing the anticipated timelines for their completion.

Students should prepare a presentation outlining the progress they have made towards accomplishing their research aims. Students should also plan to discuss career goals, IDPs and a timeline to graduation.

Students are encouraged to handout hardcopies of their presentation slides to their Thesis Committee Members, including a summary of their Specific Aims.

Meeting Format

- Start of meeting:
 - Student leaves room: Committee checks in with advisor
- Body of Meeting:
 - Bullet-point overview of progress toward PhD accomplishments, completed courses, goals, anticipated timeline
 - Specific issues and struggles to be addressed
 - Anticipated career trajectory
 - Detailed scientific progress
 - Including risks and alternate pathways
 - Publication plan
- Close of Meeting:
 - Reiteration of PhD objectives and anticipated timeline

PRELIMINARY EXAMINATIONS

Preliminary Exam A

The prelim A is satisfied upon successful completion of the Pathology 809 course. As previously mentioned, the course is designed to give the student exposure to science of the four Focus Groups in the Program, teach them how to write the research proposal required for Prelim B and provide guidance with IDP development. This course is taken in the spring semester of the student's second year. The course can only be retaken once if failed. If students are put on probation, they have to write a proposal correcting their weaknesses and submit it to an exam committee. The course is for 2 credits. Course objectives: 1. Provide IDP and career choice guidance; 2. Teach the students how to critically evaluate research papers.; 3. Teach students how to formulate a hypothesis and design an experiment to test it; 4. Teach the students how to write a grant proposal and give a talk; 5. Provide a standardized mechanism to determine if students are ready to take prelim B (Evidence-Based Learning).

Preliminary Exam B

The prelim B exam is taken within approximately six months following Path 809. Prior to the examination, students must fulfill the following requirements: Complete CMP Curriculum Requirements; Successfully complete Path 809; Begin working on thesis proposal and have substantial preliminary data to support feasibility and significance. The exam consists of a written NIH style R01, NSF or AHA (or similar level) grant proposal that outlines their research project. The students are also expected to give a presentation on their research proposal and defend it orally to their thesis committee. The students are evaluated on the written and oral aspects of the exam. The grade scale is pass, pass but with deficiencies or fail. A student who fails the exam can only retake it once. If students pass with deficiencies, they work with their thesis committee to correct the deficiencies in their proposal.

The goals of the Preliminary exam B are the following:

- Confirm that the student can think independently

- Test that the student can propose hypothesis-based aims and defend the rationales for them
- Test that the student can design experimental approaches to test the proposed hypothesis

The written Preliminary exam B is in the format of a standard NIH grant application. There is no length requirement, but it is recommended that it does not exceed 12 pages (single spaced, 12-point font, including figures). It is then given as an oral research presentation to the PhD thesis committee. This is typically given within about six months after successful completion of Preliminary exam A. Keep in mind that the objective of this exam is to clearly and concisely express your ideas, plans, and rationale. Often shorter, more focused applications have greater success because the reviewers comprehend the issues better and do not get lost.

Prior to the Preliminary exam B:

- Complete the curriculum requirements
- Successfully pass Preliminary exam A (Path 809)
- Submit the written Preliminary exam B proposal to their PhD thesis committee at least two weeks before the exam
- Notify the CMP office of the scheduled exam date at least three weeks before the exam so that the office can request a preliminary warrant. Be prepared to send your list of committee members with your two readers (in addition to your PI) to the program's Graduate Program Manager.

If the written document and oral presentation meet the expectations of the PhD thesis committee, the members of the committee will then sign the preliminary warrant form. If the exam is not successful, then the student and the PhD committee will decide the appropriate actions

Preliminary Exam B NIH Format




Specific Aims – limit one page

- State your goals and expected outcomes of the research.
- Describe succinctly and realistically what your research is intended to accomplish.
- Include any hypotheses to be tested.




Research Strategy—limit twelve pages.

Organize this section by the following headings:





Significance

-  Explain the importance of the project in the field
-  Explain how your project will advance scientific knowledge in one or more fields
-  Describe how the field will change if the proposed aims are achieved

Innovation

-  Explain how the application challenges the existing research models
-  Explain anything novel or advantageous about the research
-  Describe new, refined, or improved concepts

Approach

-  Discuss your overall strategy to accomplish the specific aims
-  Discuss potential problems and solutions as well as how you will measure success
-  Describe the feasibility of the work and any aspect that may be high risk
-  Mention any part of the work that may be hazardous to personnel and the precautions planned to protect them

Preliminary Studies

- Provide an account of any preliminary studies pertinent to the application and/or any other information that will help to establish your experience and competence to pursue the proposed project.

Literature Cited

- In each citation, include the title, names of all authors, book or journal, volume number, page numbers, and year of publication.
- Attempt to be judicious in compiling a relevant and current list of literature citations; it need not be exhaustive.

Figures

- Figures critical to the proposal should be included within the stated page limits.
- The student will have the opportunity to present other figures at the oral examination.

For more information regarding the NIH format, please visit link to the NIH SF424 general guide:

<https://grants.nih.gov/grants/how-to-apply-application-guide/forms-f/general-forms-f.pdf>

At the Exam

- Give a 30-45 minute oral presentation describing research proposal.
- Respond to questions asked by meeting participants.
- Following the presentation, a closed meeting will be held with the student and his/her advisory committee where the student will respond to committee members' questions regarding the proposal and any related material.
- Exam usually takes about 2 hours.
- Committee will make recommendations for changes, if any, and sign the preliminary warrant form.

Evaluation Criteria

The following questions are used to evaluate Preliminary Exam B:

- Can the student identify important problems to study?
- Can the student develop a hypothesis-based proposal?
- Can the student distinguish between a realistic experiment and one that is impossible to complete within the scope of a PhD dissertation?
- Can the student see possible difficulties in the long-term planning of the research proposal?
- Does the student present the proposal successfully both as an oral presentation and a written proposal? Is the student able to defend the proposal and answer questions about alternate experimental models?

Following the Exam

- If successful, the student submits the signed preliminary warrant to the Graduate Program office.
- If unsuccessful, the advisory committee and student will decide which action to take and present it to the CMP Steering Committee. Recommendations include: a. pass the candidate conditionally - this should be allowed only once and specifics for the time frame and required tasks that would need to be completed should be included in the letter to the CMP Steering Committee, b. advisory committee petitions the CMP Steering committee to allow the student to terminate with a Master's degree or c. student leaves the CMP Graduate Program without a Master's degree. A letter outlining the selected course of action is sent to the CMP Steering Committee.

The goals of the Preliminary exam B are the following:

- Confirm that the student can think independently
- Test that the student can propose hypothesis-based aims and defend the rationales for them
- Test that the student can design experimental approaches to test the proposed hypothesis

PHD DEFENSE

Students must defend their thesis within five years of completion of Preliminary exam B. If the thesis is not completed within this time period, the student must retake the Preliminary exam B or request an extension from the graduate school.

Prior to the PhD defense

- Notify the CMP office of the proposed PhD defense date at least one month prior to allow time to process the necessary forms
- The CMP office will fill out and submit a final warrant form to the Graduate school
- The CMP office will send the student information, guides for degree completion.
- Students should visit this website for critical defense process information, <https://grad.wisc.edu/current-students/doctoral-guide/>

Following the PhD defense

- The student must submit a copy of the PhD thesis, a copy of the signed warrant form, a non uw email address, a forwarding address, and the name of a prospective employer and position to the CMP office. The CMP office appreciates being notified of its graduates' changes of address in order to keep in touch.
- Submit a thesis copy to the CMP Program
- **Reminder:** To receive your diploma, all fines and charges must be satisfied with the university.

PROFESSIONAL RESOURCES

UW-Madison offers a wealth of resources intended to enrich graduate studies and enhance professional skills. The Program encourages students to take advantage of the resources that best fit their needs and support your career goals.*

Fellowship announcements: <https://grad.wisc.edu/funding/> Professional Development opportunities: <https://grad.wisc.edu/professional-development/>

Journal Clubs

Several weekly journal clubs in special topics exist. Generally, one paper is presented each week. Some are offered as formal courses; others meet informally. Below is a list of some of the journal clubs that CMP trainers currently participate in:

- Biotechnology Training Program Student Seminar Series
- Cancer Biology Literature Group (every other week)
- Cardiovascular Research Center Journal Club (Thursdays once a month)
- Developmental Biology Journal Club (Wednesdays at 12:00pm)
- Geriatrics Journal Club (Tuesdays at 7:30pm)
- Glaucoma Research Group
- Neuroimmunology Journal Club (Fridays at 11:00pm)
- Immunology Research Group (Thursdays at 12:00pm)
- MSTP Student Journal Club
- Neurological Surgery Journal Club (bi-weekly)
- Ophthalmology & Visual Sciences Research Colloquium (Fridays at 12:00pm)
- Ophthalmology and Visual Sciences Grand Rounds (Fridays at 7:30pm)
- Ophthalmology and Visual Sciences Retina Group (Tuesdays at 7:00pm)
- Seminar in Cellular Biology and Cytoskeletal Dynamics
- Stem Cell Biology Journal Club (Fridays at 12:00pm)
-

- Transcriptional Mechanisms Research Group (monthly)
- UWCCC Tumor Immunology Journal Club (Tuesdays at 9:00am) Vascular
- Biology Research Colloquium (monthly)
- Zebrafish Research Group (last Tuesday of month)

PROBLEM RESOLUTION

Steps to take to resolve a problem in the lab

1. **The student is advised to initiate a written record containing dates, times, persons, and description of activities, and to update this record while completing the procedures described below.**
2. **If the student is comfortable doing so, efforts should be made to resolve complaints informally between individuals before pursuing a formal grievance.**

The student and major professor should attempt to resolve the problem through discussion.

If the student is not satisfied with the result, they should present the problem to another member of their advisory committee, the CMP Program Director, the CMP Program Co-Director or the CMP Program Administrator.

If a committee has not yet been formed, the student should contact the Chair of the CMP Program. The Chair will then attempt to resolve the problem to the satisfaction of both the major professor and student.

3. **Should a satisfactory resolution not be achieved, the student should contact the program's grievance advisor or program director to discuss the complaint. Dr. Bo Liu, liub@surgery.wisc.edu is CMP's grievance advisor. When disputes translate into lab changes, CMP guidelines can be found below.**

If the decision warrants the student leaving the laboratory, the CMP program will provide financial support while the student rotates in other laboratories for no more than three months (except direct admit students).

The financial support is one month at a time with required program check-in's re: status. This additional rotation experience should not be viewed as the new student experience, but one with a different goal of selecting a best possibility first and, should things go well, joining that lab if given the opportunity.

If, after three months, the student has not successfully found another laboratory to settle in, the CMP Grievance Advisor, along with the CMP Steering Committee, will again review the case and make a final decision which may result in the student being dismissed from the program

PROBLEM RESOLUTION

Direct Admission Students

Direct Admit Problem Resolution

If a problem between a direct admit student and a major professor/lab member develops, the following steps should be taken:

1. Follow Steps 1-2 above before the step below.
2. If after following the grievance policy a student chooses to leave the lab, the student and advisor must notify the CMP program coordinator office immediately, and the faculty advisor/CMP Trainer must provide financial support for the student for no more than a 3-month rotation/transition period.

Before admitting a student directly, the faculty advisor/CMP Trainer must obtain a commitment from his/her department chair to support the student for the 3-month transition period (in the event that the faculty member is unable to supply the funds directly). The signature of the faculty advisor/CMP Trainer's department chair on this DA agreement will indicate this support. The commitment of the faculty member will terminate sooner if the student finds a new lab before the end of the 3-month rotation/transition period.

CELLULAR AND MOLECULAR PATHOLOGY ADMINISTRATION AND COMMITTEES

Administrative Structure

Position	Name	Email	Phone
Director	Zsuzsanna Fabry	zfabry@wisc.edu	(608) 265-8716
Co-Director	Andreas Friedl	afriedl@wisc.edu	(608) 265-4262
Program Administrator	Joanne Thornton	jmthornt@wisc.edu	(608) 262-2665
Department Administrator	Rachel Kulow	ragrimm@wisc.edu	(608) 263-3665

CMP Steering Committee

The CMP Steering Committee consists of at least six trainers and at least one current PhD candidate. Trainers are nominated by the Chair of Pathology and the Chair of the CMP Steering Committee (who is also the chair of the CMP Graduate Program). The CMP Steering Committee Chair is appointed by the Chair of Pathology. The CMP Steering Committee Chair ensures that the CMP Steering Committee carries out its responsibilities as detailed below. Specifically, this includes calling meetings and acting as an official liaison to the office of the Dean of the Graduate School. Additionally, the CMP Steering Committee Chair is responsible for signing all legal documents and warrants related to the membership of the program.

Responsibilities of the CMP Steering Committee

- Review applications for trainer status in the CMP program
- Attend to the formation and ongoing composition of the administrative subcommittees, as well as oversee the functioning of the subcommittees and delegate responsibilities to subcommittee members. The members of these subcommittees are appointed by the CMP Steering Committee in early fall. Any responsibilities not expressly delegated to a subcommittee reside with the CMP Steering Committee chair.
- Ruling on petitions to obtain exceptions of changes to existing guidelines, requirements, and policies. Any faculty member or student in the CMP Graduate Program has the right to petition the CMP Steering Committee to consider specific exceptions or changes to existing guidelines, requirements, or policies. The petitioner is expected to present arguments to demonstrate that the circumstances are sufficient to warrant exception. The CMP Steering Committee has complete authority to grant or deny exceptions and changes. Exceptions and changes are decided by a majority vote of the CMP Steering Committee.
- Update, revise, and publish the Program's poster, website, and marketing materials
- Identify a mechanism for raising flexible funding for the CMP Graduate Program
- Review T32 Student nomination packets and award T32 funds

CMP Steering Committee Contacts

- Zsuzsa Fabry, PhD (CMP Steering Committee Chair)
- Andreas Friedl, MD, (Co-Chair)
- Anna Huttenlocher, MD
- Donna Peters, PhD
- Matyas Sandor, PhD
- Erin Brooks, MD
- Emery Bresnick, PhD
- Bo Liu, PhD

- Shelby O'Connor, PhD
- Deanne Mosher, PhD
- James Gern, MD
- Raghu Vemuganti, PhD
- Corinna Burger, PhD
- Tyler Ulland, PhD
- *ex officio* Joanne Thornton, Graduate Program Manager

Program Oversight

CMP is a department-based program. Thus, the vast majority of resources for the program originate in the Department of Pathology & Laboratory Medicine.

A key feature of the CMP program that facilitates innovation, responsiveness and collegiality is the faculty/staff/student-shared governance, a tradition at UW. Students, staff and faculty members are all represented on the CMP program's standing oversight committees. Each committee consists of 3-8 faculty members and one *ex officio* administrative member. In addition, two student representatives serve on the Steering Committee and at least one student representative is on each of the other committees. Student representatives are essential to these committees and have equal voting rights. Because of this shared governance, the CMP program is able to continually evolve to meet the changing needs and circumstances of our doctoral students. Subcommittees are advisory to the Steering Committee and the Chairs of CMP. The Steering Committee has executive authority, but its meetings are open to all faculty. CMP faculty is asked to volunteer for service on one of the Program's committees once every three years.

Additional Cellular and Molecular Pathology Committees

Committees concentrate on keeping the CMP program running smoothly. Different aspects of the program such as student admissions, diversity, and curriculum are addressed in individual subcommittees. Students are encouraged to help! Typically, each committee has one non-dissertator and one dissertator student volunteer. Volunteering is a great way to learn more about the program and help your fellow students.

Admission and Recruitment Subcommittee

This committee determines the makeup of the student body. Members are involved in all aspects of the admissions and recruitment process. Committee responsibilities include reviewing student applications, making final admission recommendations, making fellowship recommendations, and evaluating transfer student applications. This committee is also in charge of creating novel recruitment tools and innovative ways of recruiting minority applicants. Volunteers should keep in mind the heavier time commitment of this position. Meetings occur as needed, and are usually 4-5 times for 2-3 hours each, from mid-January to the end of April. Interviews of prospective applicants takes place over a weekend, including Monday, in February or March.

First Year Advising and Orientation Committee

This committee (or assigned advisor) takes care of new CMP students during the first semester of their graduate life. Members provide advice to rotating 1st year students and create orientation activities (See Welcome Week Events). This committee meets with incoming students at the end of August or in the first week of September. This meeting is critical for the incoming students to help them make final decisions regarding lab rotations. During this first meeting, incoming students will get all the information necessary to "survive" their first semester. Following these organization tasks, the First Year Advising and Orientation Committee will connect with all the students approximately once a month in the first semester. This ensures the close monitoring of first year students. After the students find their research lab, the Student's Advisory Committee takes over monitoring the student's progress. With remote conferences becoming more common, we have begun to hold this first meeting remotely in July, to answer incoming students' questions and address their concerns.

Curriculum Committee

This committee ensures curriculum requirement completion. Other focuses include proposing curriculum changes to GEC and assisting in the development of new courses by faculty. The curriculum committee also evaluates the new courses proposed and implemented by faculty. Meetings are scheduled as needed.

Diversity Committee

The program is committed to actively encouraging diversity within its community of scholars and engaging in activities that inspire individuals from disadvantaged or underrepresented backgrounds to choose careers in translational medical research. This committee seeks to promote this activity by gathering information on successful methods for recruiting minorities and ensuring the success of minority students that come to the program. Meetings are scheduled 1-2 times per year.

Pathology Seminar Series Committee

The central forum for intellectual exchange in the program is the Pathology Seminar. The *Pathology Seminar Series* is a bi-weekly event sponsored by the CMP Program. Under its auspices, pre- and post-doctoral trainees, residents and faculty come-together to interact and listen to a detailed and in-depth scientific presentation of original research. This committee oversees the selection and implementation of the Wednesday noon Seminar topics. Meetings occur primarily later spring or in early summer.

Ethics Committee

The NIH mandates that all students supported by federal training grants receive annual instruction in scientific ethics. This committee organizes and guides the students in RCR training and assures that appropriate ethic courses are taken.

DEFINITIONS AND OTHER INFORMATION

This section is a hodgepodge of information about the CMP administrative committees, further details about essential forms required for CMP, and general tips about everyday issues such as weather, transportation, and campus mail.

Seminar Series

The Department of Pathology and Laboratory Medicine has a seminar series that takes place every other Thursday from 9:00am to 10:00am in HSLC during the fall and spring semesters. All CMP students are required to sign-up and attend this seminar. To find the schedule go to <https://pathology.wisc.edu/> and scroll to the bottom of the page. When outside speakers present on site, the department hosts a lunch for the CMP students and the speaker as an informal way to get to know what the speaker and their research.

There are a number of other seminar series that take place across campus at different times. You may feel that one of them would also be useful to your research and should sign up for it, but this is not a requirement.

Certification Form

The certification form is a form that is to be filled out by you and your committee at your first meeting, which should take place within 6 months of deciding on a lab. The form can be downloaded from the pathology website at <https://cmp.wisc.edu/cmp-forms/>. The form is designed to help you and your committee see which classes you have already taken and which classes would be beneficial for you to take. You should hand in (or send electronically) this form to the administrative office to be put in your personnel file. This helps the committee have a clearer understanding of where you are currently and where you should be going in terms of classwork.

Progress Form

After the Certification form you will use the Progress Form Meeting 2 through Prelim B until you pass your prelim b and become a dissertator. The progress form should be filled out every time you meet with your committee after the first initial meeting. It is designed to make sure you are going down the path you should be going down and that you are fulfilling the obligations your major professor feels you should. Once you become a dissertator you will use Progress Form Post Prelim B at every committee meeting until you graduate.

Campus ID

A student must present a photo ID to receive their student ID cards. The Campus ID card is issued at Union South in Room 149.

Transportation

As you may have guessed by now, the university in no way has ample space for everyone that attends or works here to park on campus. This is where a great metro bus system comes in. The university has tried to solve this problem allowing all students, free bus passes to ride any of the metro buses. This includes the metro buses that go around campus. You simply need to go pick up your bus pass and have a valid UW ID to ride the bus for free. Students can pick up their bus pass at **Distribution begins starting on August 21rd at 10 am outside Union South Box Office (Orchard Street mall)**. <https://asm.wisc.edu/buspass/> Check this link for times, start and end dates for bus pass distribution. This is an exceptionally great program when the weather is less than ideal for walking a lot or riding your bike.

Weather

Speaking of weather, all the stories you have heard about Wisconsin's winter are probably in some way true. The winter here can be (but isn't always) extreme. We are talking about frostbite when you're outside for just 10 minutes. So, please always remember that tidbit when getting ready to go outside during the winter. Layers are a student's best friend here.

Campus Mail

While you are going through rotations, as you probably know, it's hard to keep track of where to send your mail. So, until you have decided on a permanent lab, your campus mail will be addressed to 3170-10K/L, MFCB (Medical Foundation Centennial Building), near Joanne's office. She will then forward your mail to the lab you are currently rotating in. So, once again, it is extremely important for you to make sure that you keep her informed when you change rotations. Once you decide on a laboratory, we will change your address in the campus system so that all of your mail goes directly to your lab.

Well, that's it for the CMP Student Handbook. Hopefully, this has helped you learn more about your graduate studies. Once again, please ask if you have questions. We are willing to help with anything we can. In ending, here are a couple websites that may be useful to you:

UW-Madison Website <https://www.wisc.edu/>

CMP Web Site <https://cmp.wisc.edu/>

Health Benefits:

<http://www.ohr.wisc.edu/benefits/new-emp/sgh.aspx>

Graduate School

www.wisc.edu/grad

UW IT Policies

<http://www.wisc.edu/policies/>.

If you need additional help, have questions or comments regarding your graduate studies or this survival guide, you can contact Joanne Thornton.

Joanne Thornton

Graduate Program Manager

UW Department of Pathology and Laboratory Medicine

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