PATH 750 — CELLULAR AND MOLECULAR BIOLOGY/PATHOLOGY
2-3 credits.

The emphasis is on our current understanding of molecular and cellular mechanisms. Wherever possible, human diseases are used to illustrate the outcome at the organismal level of defects in these mechanisms. Lectures will draw from the current research literature and cover topics such as cell and tissue organization, intracellular sorting, cell migration and growth. Students in Cellular and Molecular Pathology graduate program must enroll for lectures, 2 credits and discussion section, 1 credit. All other students should enroll for lecture only, 2 credits. Enroll Info: None
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2020

PATH 751 — CELL AND MOLECULAR BIOLOGY OF AGING
3 credits.

Cellular and molecular pathophysiology of human disease typically afflicting the aged, such as Alzheimer’s, osteoporosis, Type II diabetes and arthritis, experimental systems to study aging. Enroll Info: None
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2019

PATH 802 — HISTOPATHOLOGY FOR TRANSLATIONAL SCIENTISTS
3 credits.

This course is unique among the graduate curricula, introducing students to the pathogenesis of disease via integration of actual autopsy patient cases. Emphasis is placed on understanding the basic mechanisms of disease at the level of cell, organ, and body, as well as the morphologic expression patterns of selected common specific disease processes. In addition to attending twice-weekly lectures, students will participate in weekly autopsy gross organ conferences as well as microscopic review sessions. In this way, the concepts covered in lectures will be applied and reinforced in the interactive autopsy sessions. Students will also observe at least one full autopsy, gaining a three-dimensional understanding of structure and disease. The grade for this course is derived from a final multiple-choice exam and a short essay regarding an autopsy case. 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. Enroll Info: None
Requisites: Declared in Cellular and Molecular Pathology graduate program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2019
### PATH 803 — PATHOGENESIS OF MAJOR HUMAN DISEASES
3 credits.

This course will focus on disease pathogenesis and discussion of the leading disease research model. Throughout the course, we will combine expert clinicians, basic scientists, and literature review on specific major diseases. Enroll Info: None

**Requisites:** Graduate/professional standing  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2020

### PATH 807 — IMMUNOPATHOLOGY: THE IMMUNE SYSTEM IN HEALTH AND DISEASE
2 credits.

Gain fundamental knowledge of immunopathology and molecular immunology medicine, and have an in-depth research experience that combines pathobiological and translational immunology research. Enroll Info: None

**Requisites:** Graduate/professional standing  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2020

### PATH 809 — MOLECULAR MECHANISMS OF DISEASE
2 credits.

Focuses on molecular mechanisms of diseases. Course will focus on four modules: Neuroscience, cancer biology, growth factor/matrix biology, and immunology. Course will consist of a one hour lecture and a one hour group discussion. Enroll Info: None

**Requisites:** Declared in Cellular and Molecular Pathology graduate program  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2020

### PATH 900 — SEMINAR
0 credits.

Weekly Seminar for graduate students, professional students, medical professionals. Enroll Info: None

**Requisites:** Graduate/professional standing  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** Yes, unlimited number of completions  
**Last Taught:** Spring 2020

### PATH 901 — STUDENT SEMINAR / JOURNAL CLUB
1 credit.

Review of current publications on relevant topics selected by department faculty and trainer. Enroll Info: None

**Requisites:** Graduate/professional standing  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** Yes, unlimited number of completions  
**Last Taught:** Spring 2020

### PATH 920 — GENERAL PATHOLOGY CLERKSHIP
2-4 credits.

Understand the central role that diagnostic pathology and laboratory testing play in medical care in all specialties. Review your course work in anatomic and clinical Pathology and add to your fund of knowledge. Familiarize yourself with the workings of a busy diagnostic tissue laboratory. Participate in daily “clinical-pathologist” discussions concerning the effects of various pathological conditions as they relate to specific clinical problems. Understand the role of anatomic and clinical pathology as they contribute to the understanding of disease processes. Enroll Info: None

**Requisites:** Graduate/professional standing  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** Yes, unlimited number of completions  
**Last Taught:** Spring 2020

### PATH 921 — TRANSFUSION MEDICINE CUSTOMIZED
2 credits.

Maximize preparedness for residency by correlating basic science concepts with practical decision-making in clinical transfusion medicine. Tested topics are customized based on the student’s specialty interests. Topics include hemostasis, immunology of transfusions, transfusion reactions, red blood cell (RBC) antigens and antibodies, product modifications, lab tests, indications, therapeutic apheresis, blood donation, special patient populations and circumstances such as obstetrics or neonates, and massive transfusion in surgery and trauma. Enroll Info: None

**Requisites:** MED SC-M 810, 811, 812, and 813  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2020

### PATH 925 — LABORATORY MEDICINE: CLINICAL TOXICOLOGY ELECTIVE-CSC
2-12 credits.

Toxicology is a subspecialty within clinical chemistry involving the testing of blood, urine, or other samples for the presence of toxic compounds, drugs, or drug metabolites with clinical relevance in addiction medicine, emergency medicine, infectious disease, and transplantation. Enroll Info: None

**Requisites:** Declared in Medicine program  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** Yes, unlimited number of completions  
**Last Taught:** Spring 2012

### PATH 926 — PATHOLOGY: CLINICAL MICROBIOLOGY-MARSHFIELD
2-12 credits.

Clinical elective for fourth year medical students. Enroll Info: None

**Requisites:** Declared in Medicine program  
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** Yes, unlimited number of completions  
**Last Taught:** Spring 2019
PATH 949 — GENETICS THROUGH THE LIFE CYCLE
4 credits.

The genome impacts human health and disease from the moment of conception throughout growth, development, and aging. This course offers a comprehensive overview of clinical laboratory testing in the fields of medical genetics and public health. Topics include how genetic testing is integrated into patient care, including prenatal genetics, newborn screening, genetic testing in children and adults, and oncology genetics. Students will develop a strong foundational knowledge of basic genetics principles, identify indications for genetic testing, interpret population screening results and the implications for public health, assess the utility of diagnostic testing, and recognize the limitations of genetic testing and clinical laboratory medicine. It is anticipated that students will incorporate these concepts, knowledge, experiences, and evidence in their future clinical practice. Enroll Info: None

Requisites: Declared in Medicine program

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2019

PATH 950 — INFECTIOUS DISEASE DETECTIVES
2 credits.

In much of the world, infection remains the leading cause of disease and death. While medicine has made great strides in the diagnosis and treatment of infection, new and deadly pathogens continue to emerge, and antibiotic resistance continues to grow. No matter what a physician’s specialty, understanding principals of infectious disease manifestations, diagnosis and treatment are key. Enroll Info: None

Requisites: Declared in the Medical program with 4th year standing

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2020

PATH 960 — PATHOLOGY FOR SURGEONS
2 credits.

The surgeon-pathologist relationship is an integral aspect of the surgical care process. The intraoperative and postoperative findings of the pathologist confirm that the appropriate course of action was taken, and this information determines what the surgeon will tell the patient and his or her family about the disease entity, prognosis, and recommended next steps. In this basic science selective, future surgeons will have the opportunity to refresh their understanding of essential anatomy and histology, and deepen their knowledge of disease pathophysiology. They will also engage in multiple practical learning activities such as cutting a frozen section, working up a transfusion reaction, staining and interpreting an FNA cytology slide, assisting in prosecting (grossing) surgical pathology and autopsy specimens and following up on the diagnosis/molecular testing/tumor board discussion to enhance their understanding of the pathologist’s critical role in managing surgical patients. Enroll Info: None

Requisites: MED SC-M 810, 811, 812 and 813

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2019

PATH 970 — GENOMICS, PROTEOMICS, AND METABOLOMICS: A DEEP DIVE INTO OMICS DATA ANALYSIS
2 credits.

Advances in medicine are increasingly being driven by "big data" analyses, including proteomics, genomics, and metabolomics. Basic knowledge of how to analyze these datasets can allow one to generate and test hypotheses that have the potential to transform a field. In this course, students will conduct individual data mining expeditions using a collection of large proteomics and metabolomics data sets. Formulate hypotheses about the interrelationships of molecules and their potential relationship to health, disease, and biological phenotypes. Basic background instruction on "omics" methodologies, heritability studies, and analytical methods will be provided. Provides the basic knowledge to carry out future ‘omics analyses; using scientific inquiry to potentially transform the practice of medicine. Enroll Info: None

Requisites: MED SC-M 810, 811, 812 and 813; or Declared in Cellular and Molecular Pathology Graduate Program

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

PATH 990 — RESEARCH
1-8 credits.

For Grad and medical students desiring advanced pathology; work done under the direction of a senior staff member. Enroll Info: None

Requisites: Declared in Medicine program or Cellular and Molecular Pathology graduate program

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: Yes, unlimited number of completions

Last Taught: Spring 2020