IMMUNOLOGY AND MICROBIOLOGY

Office: 7374 Scott Hall; 313-577-1591
Chairperson: Philip E. Pelett
Deputy Chairperson: Harley Y. Tse
http://www.immunomicro.med.wayne.edu

The Department of Immunology and Microbiology offers diversified programs leading to the Doctor of Philosophy degree. Faculty members are actively engaged in individual and collaborative research in the areas of immunology, virology, and bacteriology. Current faculty research in immunology includes autoimmune diseases, cancer immunology, infectious diseases, lymphocyte biology, neuroimmunology, mucosal immunology, and immune regulation. Faculty research in virology includes regulation of viral gene expression at the transcriptional and translational levels, virus assembly, and innate immunity to viral infections. Bacteriological research includes investigation of the molecular mechanisms of bacterial pathogenesis, regulation of bacterial gene expression during infection of eukaryotic hosts, ocular infections, drug delivery systems, structure-function properties of bacterial toxins, and mechanisms by which microbiomes affect animal behavior, human reproduction, and holobiont phenotypes. The Department consists of eight faculty members with primary appointments in the Department, as well as graduate students and post-doctoral fellows and administrative and technical staff. In addition, affiliated faculty in other School of Medicine departments as well as Detroit Medical Center, Henry Ford Health System, Providence Hospital, St. John Health System and the Karmanos Cancer Institute participate in departmental activities.

Assistantships and Research, Immunology and Microbiology

Assistantships for Ph.D. students are available through the IBS program on a competitive basis. All students accepted into the Doctor of Philosophy degree program are considered for financial assistance and no application forms are necessary for this purpose. All students, whether or not they hold a fellowship or an assistantship, are encouraged to assist the graduate faculty in teaching and research activities as a component of their educational experience. Departmental assistantships and fellowships are not available for M.S. students. M.S. applicants should consult the Graduate School website for information on funding their education.

BOROS, DOV L.: Ph.D., M.S., Hebrew University; Professor Emeritus
HOLLAND, THOMAS C.: Ph.D., M.S., Pennsylvania State University; B.S., Massachusetts Institute of Technology; Associate Professor
HUDSON, ALAN P.: Ph.D., City University of New York; B.A., Hamilton College; Professor
JACKSON, MATTHEW P.: Ph.D., Kansas State University; M.S., B.S., University of Missouri at Kansas City; Associate Professor
LEFFORD, MAURICE J.: M.B., B.S., University of London; Professor Emeritus
LEVINE, SEYMOUR: Ph.D., M.S., University of Illinois; B.S., University of Chicago; Professor Emeritus
MONTGOMERY, PAUL C.: Ph.D., University of Pennsylvania; B.S., Dickinson College; Professor
RATNER, STUART: Ph.D., University of Massachusetts; B.A., City University of New York; Assistant Professor
SUNDICK, ROY S.: Ph.D., M.A., State University of New York at Buffalo; B.A., State University of New York at Binghamton; Professor
TSE, HARLEY Y.: Ph.D., University of California at San Diego; M.B.A., Rutgers University; B.S., California Institute of Technology; Professor
WITHEY, JEFFREY: Ph.D., University of Michigan; Associate Professor
ZHANG, KEZHONG: Ph.D., Fudan University; Associate Professor

IM 7010 Fundamentals of Immunology Cr. 2
Basic concepts and current developments in immunology, including cellular and molecular aspects, regulation, and immunopathological mechanisms. Offered Winter.
Prerequisite: BMB 7010 with a minimum grade of C
Restriction(s): Enrollment is limited to Graduate level students.

IM 7020 Fundamentals of Microbiology Cr. 2
Basic aspects of bacteriology, genetics and mycology. Offered Fall.
Prerequisite: CHM 2260 with a minimum grade of C- and BIO 2200 with a minimum grade of C-
Restriction(s): Enrollment is limited to Graduate level students.

IM 7030 Molecular Biology of Viruses Cr. 2
Basic principles of virology including virus host interactions and the molecular biology of virus multiplication and genetics. Offered Winter.
Restriction(s): Enrollment is limited to Graduate level students.

IM 7040 Fundamentals of Research Cr. 2
Lecture/discussion of practical aspects of professional scientific research. Offered Fall.
Restriction(s): Enrollment is limited to Graduate or Medical level students; enrollment limited to students in the School of Medicine.

IM 7060 Laboratory Research Cr. 2
Preparation for doing Master’s thesis research in a laboratory. Students complete 3-4 week rotations in three different research laboratories prior to choosing a thesis research lab. Offered Fall.
Prerequisite: IM 7040 with a minimum grade of C
Restriction(s): Enrollment is limited to students with a major in Immunology and Microbiology; enrollment is limited to Graduate or Medical level students; enrollment limited to students in a Master of Science degree; enrollment limited to students in the School of Medicine.
IM 7410 Cancer Immunology and Immunotherapy Cr. 3
Cancer immunotherapy based on the molecular mechanisms of T cell development, tolerance and activation. Topics include T cell receptor and co-stimulatory signal-mediated regulation of T cell activation, transcriptional regulation of T cell differentiation, T cell effector function and regulatory mechanisms. Each week will consist of a one-hour lecture and a two-hour discussion for 11 weeks. Offered Yearly.
Prerequisite: IBS 7090
Restriction(s): Enrollment is limited to Graduate level students.
Equivalent: CB 7410

IM 7450 Current Trends in Immunology, Microbiology and Virology Cr. 1-5
Lectures and discussions on current literature and research problems. Offered Irregularly.
Restriction(s): Enrollment is limited to Graduate level students.

IM 7520 Molecular Mechanisms of Bacterial Pathogenesis Cr. 2
The roles of bacterial virulence factors such as tissue colonization, invasion, and exotoxins in pathogenesis. The genetic regulation of bacterial virulence factors will be discussed. Offered Winter.
Restriction(s): Enrollment is limited to Graduate level students.

IM 7850 Research Conferences in Immunology and Microbiology Cr. 1-5
Seminars and discussions in selected areas. Offered Every Term.
Restriction(s): Enrollment is limited to students with a major in Immunology and Microbiology; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy or Master of Science degrees.
Repeatable for 20 Credits

IM 7890 Seminar Cr. 1
Offered Every Term.
Restriction(s): Enrollment is limited to students with a major in Immunology and Microbiology; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy or Master of Science degrees.

IM 7996 Research Cr. 1-8
Offered Every Term.
Restriction(s): Enrollment is limited to students with a major in Immunology and Microbiology; enrollment is limited to Graduate level students.
Repeatable for 25 Credits

IM 8999 Master's Thesis Research and Direction Cr. 1-8
Offered Every Term.
Restriction(s): Enrollment limited to students with a class of Candidate Masters; enrollment is limited to Graduate level students.
Repeatable for 8 Credits

IM 9990 Pre-Doctoral Candidacy Research Cr. 1-8
Research in preparation for doctoral dissertation. Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students.
Repeatable for 12 Credits

IM 9991 Doctoral Candidate Status I: Dissertation Research and Direction Cr. 7.5
Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students.

IM 9992 Doctoral Candidate Status II: Dissertation Research and Direction Cr. 7.5
Offered Every Term.
Prerequisite: IM 9991 with a minimum grade of S
Restriction(s): Enrollment is limited to Graduate level students.

IM 9993 Doctoral Candidate Status III: Dissertation Research and Direction Cr. 7.5
Offered Every Term.
Prerequisite: IM 9992 with a minimum grade of S
Restriction(s): Enrollment is limited to Graduate level students.

IM 9994 Doctoral Candidate Status IV: Dissertation Research and Direction Cr. 7.5
Offered Every Term.
Prerequisite: IM 9993 with a minimum grade of S
Restriction(s): Enrollment is limited to Graduate level students.

IM 9995 Candidate Maintenance Status: Doctoral Dissertation Research and Direction Cr. 0
Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students.
Course Material Fees: $348.67
Repeatable for 0 Credits