

IMMUNOBIOLOGY

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<https://medicine.yale.edu/immuno>

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For a complete listing of immunology-related courses, see <http://bbs.yale.edu>.

IBIO 5300a / MBIO 5300a / MBIO 530a and MBIO 5300a / MCDB 5300a, Biology of the Immune System Esen Sefik, Carrie Lucas, Carolina Lucas, John Tsang, David Martinez, David Schatz, and Nikhil Joshi

The development of the immune system. Cellular and molecular mechanisms of immune recognition. Effector responses against pathogens. Immunologic memory and vaccines. Human diseases including allergy, autoimmunity, cancer, immunodeficiency, HIV/AIDS.

IBIO 5310b, Advanced Immunology Noah Palm

The historical development and central paradigms of key areas in immunology. The course attempts to develop a clear understanding of how these paradigms were established experimentally. Landmark studies are discussed to determine how the conclusions were obtained and why they were important at the time they were done.

Lecture and discussion format; readings of primary research papers and review articles. Prerequisite: IBIO 5530 or equivalent. Enrollment limited to fifteen.

IBIO 5320b, Inflammation Ruslan Medzhitov

This course covers fundamentals of inflammation from a broad biological perspective, with a focus on both physiological and pathological aspects of inflammation.

IBIO 5370a, Immunobiology Seminar: B Cells in Immunity and Disease Joseph Craft, Ann Haberman, and Coraline Mlynarczyk

This is a limited-enrollment graduate seminar course that can serve as a required seminar course for immunobiology graduate students. Students for whom this course does not fulfill a course requirement may not be allowed to enroll. This course explores B cells in immunity and disease, including in autoimmunity and malignant transformation. A central goal of the course is for students to be able to use the knowledge gained to identify critical unanswered questions in the field. The emphasis is on fundamental aspects of B cell development and tolerance, maturation, and function, and dysregulation in disease and upon addressing unanswered questions in the field. Assigned readings include review articles and papers from the primary literature, but students are expected to identify additional readings from the literature as they develop their ideas. Each class features two presentations by students on aspects of the topic of that week, as well as substantial input from other students. Student evaluation is based on class participation, oral presentations, and a short written grant, and its evaluation by student peer review. Prerequisites: IBIO 5300, Biology of the Immune System. IBIO 5310, Advanced Immunology, is recommended but not required. Enrollment limited to twenty, with preference given to students who require participation in IBIO seminars to complete their course requirements.

IBIO 5503b / C&MP 5503b / PATH 5503b / PHAR 5503b / PTB 5503b, Responsible Conduct of Research, Refresher Course Staff

The NIH requires that students receive training in the responsible conduct of research every four years. This course meets that requirement for fourth-year students. The course has two components: (1) one large-group session is held for all fourth-year students through the BBS; the main topics are scientific misconduct and authorship; (2) two Immunobiology faculty facilitate discussions based on RCR topics, gathered in advance from the students; anonymous or hypothetical stories are selected by the faculty and discussed in a workshop environment in which students are then asked to analyze each case and suggest courses of actions.

IBIO 6000a, Introduction to Research: Faculty Research Presentations Staff

Introduction to the research interests of the faculty. Required of all first-year Immunology/BBS students. Pass/Fail.

IBIO 6110a, Research Rotation 1 Staff

Intensive experience in the design and execution of experiments in immunology or other areas of biology. Students design a focused research project in consultation with a faculty mentor and execute the designed experiments in the mentor's laboratory. Students are expected to read relevant background papers from the literature, design and perform experiments, interpret the resulting data, and propose follow-up experiments. Students are also expected to attend the mentor's weekly lab meeting(s) as well as weekly Immunobiology departmental seminars and Research in Progress seminars. The course concludes with the student giving a brief presentation of the work

performed at Rotation Talks, attended by other first-year immunology-track graduate students. Evaluation is by the mentor; students also evaluate the rotation experience. Students must turn in a prioritized list of four possible mentors to the office of the DGS at least one week prior to the beginning of the course. Mentors are assigned by the DGS. Graded Satisfactory/Unsatisfactory. Minimum of twenty hours per week. Required of all first-year Immunology/BBS students.

IBIO 6120a, Research Rotation 2 Staff

Intensive experience in the design and execution of experiments in immunology or other areas of biology. Students design a focused research project in consultation with a faculty mentor and execute the designed experiments in the mentor's laboratory. Students are expected to read relevant background papers from the literature, design and perform experiments, interpret the resulting data, and propose follow-up experiments. Students are also expected to attend the mentor's weekly lab meeting(s) as well as weekly Immunobiology departmental seminars and Research in Progress seminars. The course concludes with the student giving a brief presentation of the work performed at Rotation Talks, attended by other first-year immunology-track graduate students. Evaluation is by the mentor; students also evaluate the rotation experience. Students must turn in a prioritized list of four possible mentors to Barbara Cotton in the office of the director of graduate studies at least one week prior to the beginning of the course. Mentors are assigned by the DGS. Graded Pass/Fail. 1 course credit; minimum of 20 hours/week. Required of all first-year Immunology/BBS students.

IBIO 6130b, Research Rotation 3 Carrie Lucas

Intensive experience in the design and execution of experiments in immunology or other areas of biology. Students design a focused research project in consultation with a faculty mentor and execute the designed experiments in the mentor's laboratory. Students are expected to read relevant background papers from the literature, design and perform experiments, interpret the resulting data, and propose follow-up experiments. Students are also expected to attend the mentor's weekly lab meeting(s) as well as weekly Immunobiology departmental seminars and Research in Progress seminars. The course concludes with the student giving a brief presentation of the work performed at Rotation Talks, attended by other first-year immunology-track graduate students. Evaluation is by the mentor; students also evaluate the rotation experience. Students must turn in a prioritized list of four possible mentors to Barbara Cotton in the office of the director of graduate studies at least one week prior to the beginning of the course. Mentors are assigned by the DGS. Graded Pass/Fail. 1 course credit; minimum of 20 hours/week. Required of all first-year Immunology/BBS students.