Course Overview
Friday 11:00-1:00pm
2 hour interactive discussion sessions
CRTB Rm 601
Course Director:
Pascale Alard, Ph.D.
Department of Microbiology and Immunology, CTRB, Room 609.
Telephone: (502) 852-5364; email: p0alar01@louisville.edu
Students will need to register to a Tophat account (join code: 839015) to participate.

Course Purpose & Learning Objectives
Our hope is to expose you to methods utilized frequently in Microbiology & Immunology research, so you get familiarize with material that you are likely to encounter in seminars and research papers (presented in journal club, during rotation, and advanced courses). Senior graduate students (*) and faculty will describe the theory and practice behind experimental methods they are using in the laboratory. This is a unique opportunity for first year graduate students to learn more about local technical expertise they can call upon in their independent research. This course also provide opportunity for senior graduate students to gain experience in teaching. The course will include an introduction on methods as well as in class activities in order to evaluate the quality of experimental data and the strengths and weaknesses of the approaches used. Handout and necessary information pertinent to preparation of in class activity will be posted by the instructors prior the session. We anticipate that our diverse backgrounds and experiences will generate fruitful discussion and exchange of opinion.
Upon completion of this course, you should be able to:
1) Understand methods utilized frequently in Microbiology & Immunology research
2) Design a simple experiment using the taught methodologies
3) Recall the taught methodologies when attending seminar/journal club presentation or reading research papers

Feedback and Grading
Letter grades will be assigned based on take-home exam questions (50% of final grades) and participation in workshops and discussions associated with the topics (50% of final grades). Letter grades will employ the +/- grading system (see below).
Exam questions will be given at the end of each session and will be due by the end of the day unless instructed differently by the instructors. They should be emailed to the course Director and will be corrected blindly by the instructors. You are expected to be able to answer basic questions about a chosen methodology described during the session.

Expectation about oral participation will be provided by each instructor at the beginning of each session. Formative feedback for the in-class activities will be provided by the instructors. You will be expected to attend each session, prepare beforehand anything required by the instructors, and participate in the in-class activities.

Course grade	Approximate percent score
A+	98-100
A	92-97
A-	89-91
B+	86-88
B	82-85
B-	78-81
C+	75-77
C	72-74
C-	69-72
D	65-68
F	<65

Course Schedule

Date	Topic	Instructor
8/26	Introduction to methods & Online resources	Alard
9/2	Literature search and other tools	Lapreze
9/9	Flow cytometry/CYTOF	Shin*
9/16	Confocal Microscopy	Srivastava*
9/23	RNA-based analysis of gene expression	Garrison*
9/30	Electrophoresis/blotting	Rasche*
10/7	*In vitro* analysis of immune function	Whitley*
10/14	Hypothesis generation and testing	Salter
10/21	*In vitro* virology methods	Karki*
10/28	*In vivo* selection of mutants	Price*
11/4	Use of animals in research	Ford*
11/11	Metagenomic/metabolomic	Jala
11/18	Genomic/Big data analysis (algorithm/representations)	Smith
11/25	***Thanksgiving break* (no meeting)**	
12/2	Animal models of infections	Warawa

*Student instructors

Diversity & inclusion Statement

University of Louisville strives to foster and sustain an environment of inclusiveness that empowers us all to achieve our highest potential without fear of prejudice or bias. We commit ourselves to building an exemplary educational community that offers a nurturing and challenging intellectual climate, a respect for the spectrum of human diversity, and a genuine understanding of the many differences-including race, ethnicity, gender, socio-economic status, national origin, sexual orientation, disability, and religion that enrich a vibrant metropolitan research university. We expect every member of our academic family to embrace the underlying values of this vision and to demonstrate a strong commitment to attracting, retaining, and supporting students, faculty, and staff who reflect the diversity of our larger society.

Policy on Instructional Modifications

"The University of Louisville is committed to providing access to programs and services for qualified students with disabilities. If you are a student with a disability and require accommodation to participate and complete requirements for this class, notify me immediately and contact the Disability Resource Center (Stevenson Hall, 852-6938) for verification of eligibility and determination of specific accommodations."

Title IX/Clery Act Notification

Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain **confidential** support from the PEACC Program (852-2663), Counseling Center (852-6585), and Campus Health Services (852-6479). To report sexual misconduct or sex discrimination, contact the Dean of Students (852-5787) or University of Louisville Police (852-6111).

Disclosure to **University faculty or instructors** of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is **not confidential** under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX officer.

For more information, see the Sexual Misconduct Resource Guide (http://louisville.edu/hr/employeerelations/sexual-misconduct-brochure).