

Selected Topics in Vaccinology

July 8-13, 2018 | Course No: 0158.1270

Course Instructors: Dani Cohen (Tel Aviv University), Sandra Crouse Quinn (University of Maryland), Khitam Muhsen (Tel Aviv University), Ron Ellis (Human Vaccines & Immunotherapy Journal), Elizabeth Miller (Tel Aviv University; London School of Hygiene & Tropical Medicine), Myron M. Levine (University of Maryland Baltimore), Ron Dagan (Ben Gurion University), Oana Falup-Pecurariu (Transilvania University), Vicki Freimuth (University of Georgia)

Date & Time: S, M, T, Th 14:00-18:30 / W 09:00-15:00

Final Exam: F, July 13th | 09:00-11:00 | Room 215

Location: Room TBA | Sackler Faculty of Medicine

Teaching Assistant: TBA

Course Documents: TBA

Pre-requisites & Intended Audience

The course is intended for Master's and PhD level students or above. There are no prerequisites for the course.

Academic Credit & Course Requirements

2 Academic Credits (4 ECTS). Participants must pass the final exam with a grade of 60 (D). Noncredit participants will receive a certification of participation and are not required to take the final exam, but are expected to participate in exercises and presentations.

Grade Breakdown:

Exercise- 10%

Final Exam- 90%

Course Description

This course will cover key concepts in vaccinology. It will review the evolution of vaccines and present the characteristics of currently licensed vaccines. Lectures will review the process from the concept and vaccine development approach, through pre-clinical development and initial human studies. This will be followed by the analysis of the clinical development phases of new vaccines including post-licensure evaluation of effectiveness and signal detection of adverse events. Highlights and challenges of the present immunization programs worldwide will be described vis-à-vis the burden of corresponding vaccine preventable diseases. Special attention will be given to the analysis of psychosocial factors associated with hesitancy to vaccination in various populations.

Accomplishments and challenges with selected licensed and investigational vaccines at both developmental and implementation levels will be presented and discussed (pneumococcal conjugates, live-attenuated cholera and rotavirus vaccines, shigella candidate vaccines etc.). In addition, the course will offer the opportunity to learn about recent experiences with novel immunization strategies against vaccine-preventable diseases such as immunization of pregnant women to prevent pertussis in infants and new vaccines and immunization strategies against influenza. Throughout, the course will emphasize the importance of the use of advanced epidemiological tools to prioritize development and assess post-licensure use of vaccines. Frontal lectures will be combined with exercise assignments

Course Timetable (Course Documents: TBA)

Sunday, July 8 (Day 1)	
14:00-15:30	Course Introduction Vaccine and vaccination in historical perspective. Characteristics of the current licensed vaccines (live-attenuated, killed whole cell and subunit, recombinant) Lecturer: Dani Cohen
15:30-16:00	Break
16:00-16:45	Immunization programs in developed and developing countries Lecturer: Dani Cohen
16:45-17:00	Break
17:00-18:30	Burden of infectious diseases: basis for decision-making in vaccine development; How do we quantify the burden of infectious diseases? <i>Lecture and Exercise</i> Lecturer: Khitam Muhsen
Monday, July 9 (Day 2)	
14:00-15:30	From concept to R&D to first-in-man studies – vaccines as pharmaceutical products? Lecturer: Ron Ellis
15:30-16:00	Break
16:00-17:30	Clinical development of vaccines (phase 1, 2 and 3 studies); Safety, immunogenicity and protective efficacy evaluation; correlates of protection Lecturer: Dani Cohen
17:30-17:45	Break
17:45-18:30	Post-licensure evaluation of vaccines: effectiveness, impact Lecturer: Dani Cohen
Tuesday, July 10 (Day 3)	
14:00-15:30	Post-licensure evaluation of vaccines, signal detection of adverse events. <i>Lecture and Exercise</i> Lecturer: Elizabeth Miller
15:30-16:00	Break
16:00-16:45	Novel strategies of immunization against vaccine-preventable diseases: immunization of pregnant women and impact on morbidity in infants Lecturer: Elizabeth Miller
16:45-17:00	Break
17:00-18:30	The development path of PaxVax CVD 103-HgR single-dose live oral cholera vaccine. Stockpiling and use of cholera vaccines in global public health emergencies Lecturer: Myron Levine

Wednesday, July 11 (Day 4)	
09:00-09:30	Welcome and Registration
09:30-10:10	From diseases burden to vaccine development: Enteric vaccines development priorities in view of the Global Enterics Multi-Center Study (GEMS) findings Lecturer: Myron Levine
10:10-10:50	Accelerated development of <i>Shigella</i> vaccines Lecturer: Dani Cohen
10:50-11:30	Evaluation of rotavirus universal immunization Lecturer: Khitam Muhsen
11:30-11:50	Break
11:50-12:30	The vaccine probe approach: The case of pneumococcal vaccine Lecturer: Ron Dagan
12:30-13:10	Challenges of the national program of immunization in Romania: resurgence of measles and other vaccine preventable diseases Lecturer: Oana Falup-Pecurariu
13:10-13:50	Lunch
13:50-14:30	New vaccines and strategies of immunization against influenza Lecturer: Elizabeth Miller
14:30-15:10	Vaccine Hesitancy and Confidence: Contemporary Issues in Diverse Populations in the US, Israel and Beyond Lecturers: Sandra Crouse Quinn, Vicki Freimuth
15:10-15:20	Conclusions Lecturer: Dani Cohen
Thursday, July 12 (Day 5)	
14:00-14:45	Understanding and Addressing the Impact of Trust and Risk Perception on Vaccine Acceptance Lecturers: Sandra Crouse Quinn, Vicki Freimuth
14:45-15:00	Break
15:00-15:45	Basic Principles and Practices of Risk Communication in Public Health Emergencies Lecturers: Sandra Crouse Quinn, Vicki Freimuth
15:45-16:00	Break
16:00-18:00	<i>Group Exercise:</i> Communication with the Public about Vaccine Uptake in a Pandemic Lecturers: Sandra Crouse Quinn, Vicki Freimuth
18:00-18:30	Conclusions, certificate ceremony and class photo
Friday, July 15 (Final Exam)	
09:00-11:00	Room 215, Sackler Faculty of Medicine (Teaching Assistants will be present)