BIOL 506: Vaccines

Spring 2014, Tuesdays 4:30 pm – 7:10 pm
Bull Run Hall, Rm 246

Instructor: Dr. Aarthi Narayanan
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Office Hours: By appointment
Office: Biomedical Research Laboratory 1010

Course description

All power point presentations for every class will be uploaded to blackboard prior to class.

This course will cover the scientific, social and regulatory issues relevant to vaccines.
Specific focal points will include the following:
1. General overview of vaccine history
2. Overview of how the immune system works relevant to vaccines and host response
3. Licensed vaccines
4. Combination vaccines
5. Biodefense and specific pathogen vaccines
6. Vaccines in development
7. Technology for new vaccines
8. Vaccinations for special groups
9. Public health and regulatory aspects

Grading:

- **Oral presentations (20%)**
  - Students will be assigned papers from the literature and will present PowerPoint presentations explaining the papers.

- **Mid-term (35%)**
  - Questions should be answered thoroughly, but concisely. The exam will consist of 6-7 essay questions that should be answered in no more than 1 page/question. Providing well -labeled figures is encouraged.

- **Take home final (35%)**
  - Questions should be answered thoroughly, but concisely. The exam will consist of 6-7 essay questions that should be answered in no more than 1 page/question. Providing well -labeled figures is encouraged.

- **Participation (10%)**

- You need to come to class, and you have to be there mentally as well as physically. A sign up sheet will be available during every class, which you will be expected to initial. You are expected to read any assigned literature prior to class so that you can discuss the paper and ask questions during the class period.

- **Late Work Policy**
  - Late work will only be accepted if it has been **prearranged** and this is up to the professor's discretion. Exceptions will be made for emergency situations.

Class Schedule

Date	**Topic**
January 21st	General overview on vaccines (history)
January 28th	How the immune system works (basics)
February 4th	Adjuvants; Vaccine manufacturing process
February 11th	Licensed vaccines: YFV
February 18th	Biodefense pathogens – viral vaccines
February 25th	Vaccines in development – HIV vaccines (Dr. Guo – guest lecture)
March 4th	Influenza vaccine
March 11th	NO CLASS (SPRING BREAK)
March 18th	**Mid term exam**
March 25th	Bacterial vaccines – Tularensis (Dr. Van Hoek – guest lecture)
April 1st	Bacterial vaccines – Y. Pestis (Dr. Hakami – guest lecture)
April 8th	Animal models in vaccine studies (Dr. Cawthon – ATCC – guest lecture)
April 15th	Novel vaccine platforms
April 22nd	Vaccinations for special groups
April 29th	Regulatory aspects in vaccine manufacture (Mr. Brian Roberts – Leidos [former SAIC] – guest lecture)
May 6th	NO CLASS (STUDY DAY)
May 13th	**Final exam**

Disability Statement

- If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703.993.2474. All academic accommodations must be arranged through that office.

Honor Code Statement

- George Mason University has an Honor Code, which requires all members of this community to maintain the highest standards of academic honesty and integrity. Cheating, plagiarism, lying, and stealing are all prohibited
- All violations of the Honor Code will be reported to the Honor Committee.
- See honorcode.gmu.edu for more detailed information.

Enrollment Statement

- Students are responsible for verifying their enrollment in this class.
- Schedule adjustments should be made by the deadlines published in the Schedule of Classes.
- After the last day to drop a class, withdrawing from this class requires the approval of the dean and is only allowed for nonacademic reasons.
- Undergraduate students may choose to exercise a selective withdrawal.
- See the Schedule of Classes for selective withdrawal procedures.

Articles for class presentations:

- Presentations will start from class 3. No presentations in classes 1 and 2.
- Students should pick 1 article for presentation in class.
- The choice of article should be communicated to the professor two weeks prior to presentation.
- Review articles are OK, as long as they are thorough and convey the required information about the topic and they don't overlap with the material that will be presented by the professor. However, primary research articles are preferred.