

<b>Faculty In Charge Of Course:</b>	Herbert L. DuPont, MD
<b>Participating Faculty:</b>	Zhi-Dong Jiang, MD, DrPh
<b>Location:</b>	Kelsey Seybold Clinic and UTHealth School of Public Health
<b>Offered:</b>	Blocks 5, 7 and 11
<b>Max. # Students/Period:</b>	4

**Course Objective**

- Understand how the microbiome controls health and disease and the power of fecal microbiota transplantation (FMT).
- Learn the principles and practice of diagnosis and treatment of patients with *C. difficile*, and identify/decrease hospital acquired infections.
- Students are expected to fully develop deep knowledge of *C. difficile* and understand how to diagnose the infection and how to treat it.
- Students should obtain a working knowledge about the intestinal microbiome in health and disease and to learn laboratory methods important in infectious diseases, including PCR, ELISA and metagenomics.
- Students should know why probiotics have little value for healthy people.

**Material Covered:**

Students will work with Drs. Herbert L. DuPont and. Jiang at the UTHealth School of Public Health (SPH), UT McGovern Medical School and Kelsey Seybold Clinic (KSC). They will learn how the microbiome effects the brain and produces health and disease and learn about hypothesis-driven research which restore the microbiome in disease states with fecal microbiota transplantation (FMT). They will also learn about the importance of *Clostridium difficile* infection (CDI) and hospital acquired infections. During non-COVID times they will attend research meetings and a research journal clubs and present one journal club article to the research team during their rotation. They will work with Dr. Jiang in her CLIA-certified laboratory to learn infectious disease diagnostic tests. During their last week they will meet with Dr. DuPont to go over all aspects of their time with the team to be sure there are no knowledge gaps.

**Skills Acquired:**

Students on this elective will be able to explain how a microbiome contributes to health and disease and to understand the value and limitations of FMT in reversal of microbiome disease states. The students will understand the pathogenesis of CDI including microbiology, immunology and clinical features and know how to treat acute and recurrent CDI. They will learn about current research we are conducting with FMT in recurrent *C. difficile* infection, non-alcoholic fatty liver disease, IBS and Parkinson’s disease, and how the laboratory drives current research in infectious disease.

**Activities of Elective**

**Number of New Patients/Student/Week:** Approx. 5-10/week

**Responsibilities of Student for Assigned Patients:**

The students will help monitor patients on research protocols. They may complete case report forms and other data tools required in the studies. They may contact attending physicians to discuss protocols and clinical treatment options.

Does history/physical:	No
Who critiques:	HLD
Follows patients, with appropriate notes as needed:	No
Who supervises:	HLD
Does student see ambulatory patients:	No

Lab Procedures	Observe	Perform
ELISA, PCR, Culture and Pathogen identification		X

**Scheduled Duties of Student:**

The students will work a standard work week reporting to Dr. DuPont and his staff. The student will learn all study protocols and be informed about standing conferences to attend. The expectations and responsibilities will be spelled out in the students’ first meeting with Dr. DuPont.

Frequency of rounds on patients	TBD
Presents patients to preceptor or attending physician	As required
Weekly schedule of required teaching sessions	Lectures, journal club and laboratory work on infectious disease diagnosis

**Describe Optional Rounds And Activities, If Any:**

**Other Required Activities:**

Dr. DuPont will hold a weekly teaching session covering many areas of enteric infectious diseases, microbiome health and infectious diseases. For interested students an opportunity to perform an individual study will be made available. In these situations, a hypothesis-driven study or review of the literature will be carved out with the expectation that the student will continue to work on the project leading to presentation at a national meeting and or publication of a peer review journal article.

	Reading/review of current literature	
	Writing or presenting a paper	

**How Is Student Evaluated:**

The student will be evaluated based on a composite of three items: quality of journal club presentation, reliability of attendance and contributions during daily lab or clinical work and by displaying information learned during a meeting with Dr. DuPont at the end of the elective.

**Who Evaluates Students:**

Dr. Herbert L. DuPont

**Unique Features of This Elective:**

*Clostridium difficile* infection is the most common hospital-associated infection. It is difficult to diagnose and with a high recurrence rate, it is difficult to treat. The intestinal microbiome is daily being shown to influence disease and health. Proper diet and avoidance of antibiotics are key in microbiome health. Students in this elective will learn all that is known on this topic which has huge implications in metabolic, central nervous system, gastrointestinal and infectious diseases. Students are exposed to modern molecular infectious diseases.