FOS 6936, Section 2C16/HUN 6936, Section 2E11  
The Causes and Impacts of Alterations of Intestinal Permeability  
1 Credits, Spring 2018  
362 FSHN – Period 6-7 (begins 02/27/18)  
Current Syllabus

Departmental Course Instructors  
Douglas Archer, Ph.D.  
Food Science and Human Nutrition Department  
103 Aquatic Food Products Lab  
Email: dlarcher@ufl.edu  
Office Hours: Tuesday/Thursday, 9:00 – 11:00 AM; or by appointment

Course Hours/Location  
- Tuesdays period 6-7 (12:50 – 2:45 PM), 362 FSHN

Overall Course Objectives and Description  
The human gastrointestinal (GI) tract is recognized as an often underappreciated interface between the environment and internal organ systems. Perturbations in the population makeup of the densely packed microbes within the GI tract can have many causes including dietary components and ingested microorganisms, which can result in both beneficial and adverse health consequences. The GI tract is truly the nexus for nutritional and food sciences. Food components and pathogenic microorganisms can alter intestinal permeability. Increasing intestinal permeability can permit the passage entry of normally excluded larger substances, including antigenic molecules, that may result in disease states such as chronic heart failure, various autoimmune diseases, diabetes, liver and kidney failure, and depression, to name but a few. Since foodborne pathogenic microorganisms dramatically alter GI permeability, the resulting influx of antigenic substances may account for the various sequelae to such infections. Concomitantly, altered GI permeability can result in mild to severe disruptions of specific nutrient uptake. Studies suggest that probiotics may help prevent or restore a disrupted GI tract to its normal state, and thus positively affect GI permeability and maintain good health. The objective is to give each student a basic knowledge of the complexities of the GI tract in health and disease, and to gain confidence in presenting and discussing scientific papers.

Communications

We will answer individual student emails promptly during stated office hours, and generally within 24 hrs during the work week. Please denote FOS/HUN 6936 in the “Subject” line in your emails, direct them to the email address noted above, and utilize your official ufl.edu email account for course correspondence. It’s a good idea to keep
your email inbox as empty as possible so that messages from instructors are not rejected. If electronic submission of work is requested, please use dlarcher@ufl.edu and name your files with the course number, your last name, and assignment title.

**Class Rules**

*Attendance AND full participation is critical to the goals of the course.* Students will be assigned key papers to present to the class, and will be expected to lead discussions. Unexcused (as defined by UF) absences/lateness will result in adverse impacts to the class participation score.

Other rules for the class are simple and essentially involve common sense and courtesy towards your colleagues and the instructor: no eating or drinking in the classroom; no side conversations; keep cell phones and other communication devices muted and stored away; if you are late, take your seat quietly and unobtrusively. Those that use electronic devices for note taking should not distract other students or instructors by such use (no keyboard noise, please). **MOST IMPORTANT: PARTICIPATE!**

**Texts and References**

All references and reading materials will be supplied as links. Assembling a binder of materials is suggested, but not mandatory.

**Required Text:** NONE

**Suggested reading:**

Will be assigned and links provided. Students may be asked to perform limited Pub Med searches.

**Grading**

The grade you earn in this course is totally dependent on attendance, class participation and presentation of assigned papers and discussion leadership. As appropriate to a graduate level course, you will be expected to demonstrate development of oral communication competence. It is expected that we will learn from one another in this course.

**Assessments**

Participation is 100% of the grade.

**Course Outline**

The order of the topics presented may vary due to the schedules of invited guests and other factors. Changes will be pre-announced whenever possible.
February 27

**Period 6** – Syllabus review, goals for class, introductory overview.

**Period 7** – Intestinal structure/architecture/tight junctions

March 6 – Spring Break

March 13

**Period 6** – Permeation in health and disease; testing permeability

**Period 7** - The immune system of the gut

March 20

**Period 6** – The intestinal microbiome

**Period 7** – Fluctuations and alterations of the microbiome and disease

March 27

**Period 6** – Probiotics and prebiotics

**Period 7** – Xenobiotics, Intestinal pathogens and permeability

April 3

**Period 6** – molecular mimicry and post enteritis sequellae

**Period 7** – Inflammation

April 10

**Period 6** – The “leaky gut” and Irritable Bowel Syndrome, chronic heart failure, and other bad things

**Period 7** – IBD, Crohn’s Disease, Ulcerative Colitis, Celiac Disease

April 17

**Period 6** – Gut permeability and Diabetes
Period 7 – Stress-permeability-inflammation-neuroimmunologic disorders

April 24

Period 6 – Nutrient uptake in the leaky gut; malnutrition and disease

Period 7 – Restoration to “normalcy”- and - Summing up and the “BIG Picture”

Information for All Students

Academic Honesty:
In the process of enrolling and registering for classes at the University of Florida, every student has signed and presumably understands the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.”

The following information is implicit in all exams and assignments:
On my honor, I have neither given nor received unauthorized aid on this exam/assignment.

Use of Library, Reference Material, Computer Programs, and Electronic Databases:
These items are university property and should be utilized with other users in mind. Never remove, mark, modify nor deface resources that do not belong to you.

Software Use:
All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.
We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

Disability Issues:
Students requesting classroom accommodation should register with the Dean of Students Office, who will then provide necessary documentation to the student. Please provide this documentation to the Instructor when requesting accommodation.

UF Counseling Services:
We hope to establish an effective and professional class relationship and encourage dialog so that students feel comfortable discussing academic problems directly with me. In addition, resources are available on-campus for students having personal problems or lacking clear career and academic goals that interfere with their academic performance. These resources include:
1. Student Affairs Consultation: Dean of Students Office, 352-392-1261, 352-392-1111 (after hours)
2. Mental Health Consultation or Referral: Counseling and Wellness Center, 352-392-1575, 352-392-1575 (after hours)
3. Office of Victim Services, 352-392-5648 (after hours call UF Police Department at 352-392-1111 and request on call staff person)
5. UF Police Department (UFPD): 352-392-1111; call 911 for emergencies where safety is of immediate concern