DEPARTMENT: Environmental Health

COURSE NUMBER: EH 590R    SECTION NUMBER: SEMESTER & YEAR: Spring 2018

CREDIT HOURS: 1

COURSE TITLE: Application of ‘Omics Technologies in Public Health Research

INSTRUCTOR NAME
Carmen Marsit, PhD

INSTRUCTOR CONTACT INFORMATION

EMAIL: carmen.j.marsit@emory.edu

PHONE: 404-712-8912

SCHOOL ADDRESS OR MAILBOX LOCATION: CNR 2021

OFFICE HOURS
Tuesdays 10am-12 pm

BRIEF COURSE DESCRIPTION
Introductory course to provide an overview of the systems biology, genomics, epigenomics, metabolomics, microbiome studies, and the potential policy and translational implications of this line of research. The course will include overviews of the underlying biological principles driving these analyses, the laboratory methods involved, approaches for the analysis, and the strengths and limitations of the approaches. Upon completion of this course, students should be better equipped to read and interpret the scientific literature utilizing these methods and begin to consider how these approaches could be included in their own research.

LIST SCHOOL LEVEL, DEPARTMENT, AND/ OR PROGRAM COMPETENCIES

- Use analytic reasoning and quantitative methods to address questions in public health and population-based research.
- Describe the use of epidemiological methods to study the etiology and control of disease and injury in populations.
- Apply the principles of toxicology to assess health effects of environmental exposures.
- Interpret results of epidemiologic studies of an environmental health question.
- Interpret advanced methods in exposure assessment of environmental contaminants.
LIST LEARNING OBJECTIVES ASSOCIATED WITH THE COMPETENCIES

Recognize the utility of large scale molecular data approaches applied to public health research
Understand the biological basis of the molecular features being interrogated
Explain the experimental basis of these techniques and recognize the strengths and limitations of these approaches
Be able to read, critically evaluated, and interpret scientific papers utilizing –omics technologies
Consider how these technologies could inform new research in various aspects of public health
Reflect on how results of these studies could be utilized to drive policy or inform prevention or intervention approaches

EVALUATION

Class Participation: 25%
Presentations: 25%
Article Critiques: 25%
Quizzes: 25%

Grading: Pass/Fail

ACADEMIC HONOR CODE

The RSPH requires that all material submitted by a student in fulfilling his or her academic course of study must be the original work of the student.