Independent Research IV

INSTRUCTOR INFORMATION

THE UNIVERSITY OF TEXAS RIO GRANDE VALLEY- Brownsville Campus
BMED 3122-03B: Independent Research II
Term: Spring 2017,
Meeting time and location: Thursday 9:30-10:30 pm, room BRHP, room 1.120
Instructor name: Dr. Chun Xu
Instructor office: BRHP, room 1.120, Dept. of Health and Biomedical Sciences
Instructor email: chun.xu@utrgv.edu Phone: (956) 882-4193

Contact Methods:

You may contact me using any of the information shown above, preferably email. Please feel free to reach me if you have any questions regarding content, if you need clarification, or would like assistance.

This syllabus represents the current course plans and objectives. As we go through the semester, those plans may need to be change to enhance the class learning opportunity. Any changes made will be updated in the syllabus and communicate with the students.

COURSE DESCRIPTION

The interconnected world of science and medicine research is critical. This course is designed for students interested in becoming research scientist and/or health care professionals such as medical doctors, dentists, physician assistants, and pharmacists. The goal of the Independent Research II is to prepare students to be actively engaged in the field of translational science through academic training and research. The core course in the program focuses on the basic components of translational science and allow students to have opportunity to conduct research in the research lab and be familiar with basic molecular genetics, and write a translational research grant and research manuscripts. Student(s) is/are exposed to a broad range of settings and must successfully complete at least 15 semester credit hours of coursework.

As a result of participation in the program, it is expected that students will:

- develop skills in designing translational research studies and writing scientific paper and grant based current findings and/or a mini translational research grant;
- apply statistical procedures and bioinformatics analysis for translational research problems;
- student(s) can conduct literature search, writing manuscript, research grant at home, library or research lab and is required to spend more time on these tasks in addition to the class hours
- learn basic molecular biology technique such as DNA purification, DNA concentration or genotyping;

Course Pre-Requisites, Co-Requisites, and/or other restrictions:

Admission to the BMED program. Completion of Independent Research I

Course Objectives:

- The student will be able to integrate knowledge of previous BMED courses with different basic science and clinical experiences.
- The student will be able to have a great understanding how to initiate translational research proposals and how to submit translational research grant for neuropsychiatric disorders (Alzheimer's disease) and neurodevelopmental disorders (epilepsy and ADHD).
- The student will have understanding how to write scientific research papers and grants.

Departmental Learning Outcomes:

- Students will acquire a basic knowledge of translational research, basic skills of molecular biology and basic skills to write scientific papers and translational research grants.
- The student will be able to initiate translational research projects together with basic scientists and clinicians

TOPIC OUTLINE/SCHEDULE

Date	Topics	Assignment Due
1/19/17	Literature search for Alzheimer's disease (AD)	
1/26/17	Literature search for Alzheimer's disease (AD) focus on genetics and genomics	Update AD genetics and genomics between 2007-2017
2/2/17	Literature search for Epilepsy and scientific manuscript writing (I)	Update Epilepsy genetics and genomics between 2007-2017 and prepare manuscript for epilepsy sequencing study
2/9/17	Basic lab skill, DNA purification	
2/16/17	Literature search for Epilepsy	prepare manuscript for epilepsy sequencing study
2/23/17	Literature search for Epilepsy focus on genetics and genomics	prepare manuscript for epilepsy sequencing study
3/2/17	Basic lab skill, DNA concentration measurement and genotyping	
3/9/17	Literature search for ADHD focus on genetics and genomics	Update ADHD genetics and genomics between 2007-2017
3/16/17	Spring Break. No classes	
3/23/17	Scientific manuscript writing (II)	
3/30/17	**Midterm**	
4/6/17	Scientific manuscript writing (III)	Prepare manuscript for

		ADHD sequencing study
4/13/17	Scientific manuscript writing (IV)	Prepare manuscript for ADHD sequencing study
4/20/17	grant writing skill (I)	
4/27/17	grant writing skill (II)	
5/4/17	Study Day. No classes	Paper due
May 5 – 11 /17	**Final Exams**	assay

GRADING POLYCY/EVALUATION

In-class group activity (30%):

You will perform an activity as a group which will help you further understanding how to prepare a scientific paper and a research proposal. If you do not attend class, you will get a **zero** for the in-class group activity.

Inquiries (70%)

Student(s) will be required to develop, carry out, analyze and present three (3) inquires throughout the semester

- Inquire #1 – Student(s) will present the abstract/summary/full proposal of research grant (30%)
- Inquire #2 – Student(s) will present the scientific paper of whole exome sequencing for epilepsy (20%)**.**
- Inquire #3 -- Student(s) will present the scientific paper of whole exome sequencing for ADHD (20%)**.**