Special Problems: PCR Analysis of Host Transcripts from Arachidin Treated Rotavirus-infected Cells

Name: Rebecca D. Parr  
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Office: S112  
Office Hours: TBA

Department: Biology  
Class meeting time and place: S205 TBA

Course Description: The student project is to learn and perform PCR and qRT-PCR on RV-infected/ arachidin treated cells. Pre-requisite: Approval of department chair.

Program Learning Outcomes:
PLO 1 The student will perform and analyze gradient PCR and qRT-PCR assays.  
PLO 2 The student will demonstrate writing skills to clearly transcribe and outline the experiments.  
PLO 3 The student will acquire the ability to interpret and present scientific research data.

General Education Core Curriculum Objectives/Outcomes:  
This course is not included in the general education core curriculum.

Student Learning Outcomes:  
After completion of BIO475, the student should have satisfactorily completed the following experiments that will be displayed in a poster presentation.  
1. The student will have mastered PCR techniques and qRT-PCR assays  
2. The student will demonstrate writing skills to complete a laboratory notebook that clearly dates and details the experiments performed on their projects outlining the scientific methods and design of the original scientific research.  
3. The student will demonstrate the ability to interpret and present their data and clearly draw conclusions from the research project.

Text and Materials:  
There are no formal textbooks for this class. The student will need to utilize literature search engines such as Pubmed. The student may not use websites as sources. The student is encouraged to utilize books that show correct grammar use, bibliography formats, as well as a scientific dictionary.

Course Calendar: The following is a tentative schedule for completion during the 2019 Spring semester.  
1. Complete experiments  
2. Presentation in lab meeting
Syllabus BIO475
Spring 2019
2 credit hour

Special Problems 475
Western blot analyses of cellular proteins from RV-infected cells with and without arachidin 3/1.

Name: Rebecca D. Parr
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Department: Biology
Class meeting time and place: S205 TBA

Course Description: The student will analyze MA104/HT29.f8 cell lysates by Western blot techniques to detect the differential expression of cellular and viral proteins with the addition of arachidin-3. Prerequisite: Approval of department chair.

Program Learning Outcomes:
PLO 1 The student will perform protein assays (BCA assay) and western blot techniques using cell lysates to visualize viral and cellular proteins in RV-infected/arachidin 3 treated cells.

General Education Core Curriculum Objectives/Outcomes:
This course is not included in the general education core curriculum.

Student Learning Outcomes:
After completion of BIO475, the student should have satisfactorily completed the following experiments.
1. The student will learn to quantify proteins, determine how much protein to add to western blot assays, and complete all the steps necessary to discern the results.
2. The student will demonstrate writing skills to complete a laboratory notebook that clearly dates and details the experiments performed on their projects outlining the scientific methods and design of the original scientific research.
3. The student will demonstrate the ability to interpret and present their data and clearly draw conclusions from the research project.

Text and Materials:
There are no formal textbooks for this class. The student will need to utilize literature search engines such as Pubmed. The student may not use websites as sources. The student is encouraged to utilize books that show correct grammar use, bibliography formats, as well as a scientific dictionary.

Course Calendar: The following is a tentative timeline for completion during the Spring 2019 semester.
1. BCA protein assays will be performed on frozen cell lysates
2. Western blot assays will be used to determine the presence of cellular and viral proteins.
Special Problems: Fluorescent Staining of Arachidin Treated Rotavirus-infected Cells

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Office Hours: TBA

Department: Biology  
Class meeting time and place: S205 TBA

Course Description: The student project is to learn and perform fluorescent studies to detect lipids and viral and host proteins on RV-infected/ arachidin treated cells. Pre-requisite: Approval of department chair.

Program Learning Outcomes:  
PLO 1 The student will perform and analyze fluorescent studies for lipids, host and cellular proteins.  
PLO 2 The student will demonstrate writing skills to clearly transcribe and outline the experiments.  
PLO 3 The student will acquire the ability to interpret and present scientific research data.

General Education Core Curriculum Objectives/Outcomes:  
This course is not included in the general education core curriculum.

Student Learning Outcomes:  
After completion of BIO475, the student should have satisfactorily completed the following experiments that will be displayed in a poster presentation.  
1. The student will have mastered labeling lipids, host and viral proteins for microscopic detection.  
2. The student will demonstrate writing skills to complete a laboratory notebook that clearly dates and details the experiments performed on their projects outlining the scientific methods and design of the original scientific research.  
3. The student will demonstrate the ability to interpret and present their data and clearly draw conclusions from the research project.

Text and Materials:  
There are no formal textbooks for this class. The student will need to utilize literature search engines such as Pubmed. The student may not use websites as sources. The student is encouraged to utilize books that show correct grammar use, bibliography formats, as well as a scientific dictionary.

Course Calendar: The following is a tentative schedule for completion during the 2019 Spring semester.  
1. Complete experiments  
2. Presentation in lab meeting
BIO475 Syllabus 3 credit hours
Spring 2019

Special Problems: PCR Analysis of Host Transcripts from Eukaryotic Cells

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Department: Biology
Class meeting time and place: S205 TBA

Course Description: The student project is to learn and perform PCR and qRT-PCR for four autophagy genes on RV-infected/ arachidin treated cells. Pre-requisite: Approval of department chair.

Program Learning Outcomes:
PLO 1 The student will perform and analyze gradient PCR and qRT-PCR assays.
PLO 2 The student will demonstrate writing skills to clearly transcribe and outline the experiments.
PLO 3 The student will acquire the ability to interpret and present scientific research data.

General Education Core Curriculum Objectives/Outcomes:
This course is not included in the general education core curriculum.

Student Learning Outcomes:
After completion of BIO475, the student should have satisfactorily completed the following experiments that will be displayed in a poster presentation.
1. The student will have mastered PCR techniques and qRT-PCR assays
2. The student will demonstrate writing skills to complete a laboratory notebook that clearly dates and details the experiments performed on their projects outlining the scientific methods and design of the original scientific research.
3. The student will demonstrate the ability to interpret and present their data and clearly draw conclusions from the research project.

Text and Materials:
There are no formal textbooks for this class. The student will need to utilize literature search engines such as Pubmed. The student may not use websites as sources. The student is encouraged to utilize books that show correct grammar use, bibliography formats, as well as a scientific dictionary.

Course Calendar: The following is a tentative schedule for completion during the 2019 Spring semester.
1. Complete experiments
2. Presentation in lab meeting