

Pharmacology Immersion Program (PIP)

Offered for ASPET SURF fellows, June 25-28th 2018

Organizer: Dan Wesson, Ph.D., Assoc Professor (office: ARB 5-204, danielwesson@ufl.edu)

Participating faculty: Drs' Erica Levitt (ARB 5-130), Olga Guryanova (CGRC 260), Jonathan Bird (ARB 5-126), Steven Munger (ARB 5-250), Edgar Rodriguez (BMS J-487), Nikhil Urs (ARB 5-128), Dan Wesson.

Additional details regarding each faculty member and their research interests can be found at: <http://pharmacology.med.ufl.edu/faculty-primary/primary-faculty/>

Description: The Pharmacology Immersion Program is a one week immersive lecture, discussion, and laboratory methods program for students interested in Pharmacology and Therapeutics. The Pharmacology Immersion Program is designed to accomplish three overall goals:

- 1) Render a general knowledge base of fundamental concepts in Pharmacology.
- 2) Provide hands-on experience with methods commonly used within the multiple disciplines and experimental approaches within Pharmacology.
- 3) Facilitate engagement of students with primary faculty and other trainees in the Department of Pharmacology and Therapeutics.

PIP is organized into four successive daily themes, each consisting of modules focusing upon different research approaches common to the discipline of Pharmacology. Each module is led by faculty members in the Department of Pharmacology and Therapeutics who engage fellows in the concepts and methods relevant in their expertise. This includes a short engaging lecture on the methods, their goals, and an emphasis on their historical origins to increase appreciation of the fellows for innovation. Fellows are expected to participate in the lectures by asking questions and are encouraged to consider how they may possibly incorporate these methods and approaches in their future education and careers. Following the lectures, fellows will be given practical experience with the approaches in faculty laboratories, hosted by the faculty as well as lab personnel.

Schedule of events:

Day 1 (Monday, June 25):

Gene expression and cellular localization (Munger)

Introduction to the PIP program (11AM: Wesson: ARB R5-231 [Maren conference room])

Module 2 (1PM: Munger lab: ARB R5-285)

- *in situ*/RNAscope
- immunohistochemistry

Day 2 (Tuesday, June 26):

Cellular identity and Imaging (Bird & Guryanova)

Module 1 (9AM: Bird lab: ARB R5-144):

- Fluorescence microscopy and analysis

Module 2 (1PM: Guryanova lab: CGRC 260):

- Flow cytometry

Day 3 (Wednesday, June 27):

Gene therapy and manipulation and Methods for screening drugs (Rodriguez & Urs)

Module 1 (9AM: Rodriguez lab: BMS Building – BMS J-451):

- Crispr/Cas9, RNAi
- Viral vector production and use

Module 2 (1PM: Urs lab: ARB R5-140):

- Cell transfection and protein-protein interactions

Day 4 (Thursday, June 28):

Physiological and Behavioral measures (Levitt & Wesson)

Module 1 (9AM: Wesson lab: ARB R5-156):

- Physiological measurements during behavior
- Single-unit recordings, Ca²⁺ imaging

Module 2 (1PM: Levitt lab: ARB R5-136)

- Intracellular physiology

Considerations for fellows:

- Conceptualize lectures as foundations for what you will participate in within the laboratory. You will also be provided with reading material prior to the lectures to help prepare you in the subject matter.
- As you know, research laboratories are sacred places. You will be spending time in numerous active faculty laboratories and as part of the exercises will be using valuable equipment and materials. Ongoing experimentation will be occurring in addition to the exercises you will participate in. Therefore, when you are in a laboratory, be mindful not to disturb items. Also, be considerate of those around you who may be working on pressing experiments.
- The modules have been developed so that you will not be required to disturb or handle any research animals in the course of this program.
- In between the morning and afternoon modules there will be a break for you to go for lunch and/or attend the ASPET SURF faculty seminar.