

# IGPBS - NEUROSCIENCE (PHD AND MD/PHD)

## Curriculum

### Graduate Committee

Dr. Keshore Bidasee (Chair & Program Director), Dr. Valia Gumenyuk (Vice Chair), Dr. Daniel Monaghan, Dr. Huangui Xiong, Dr. Matthew Van Hook, Dr. Kaushik Patel, and Dr. Ryan Wong

Students enrolled in the IGPBS - Neuroscience doctoral program gain foundational knowledge in biochemical, cell biology, physiological, and immunological aspects of neuroscience, leading to research in diverse areas such as neurodevelopment, neurosignaling, behavioral and cognitive neuroscience, autonomic neuroscience, and the biology of neurological disorders.

### PhD Curriculum

Code	Title	Credit Hours
<b>Required Courses</b>		
GRAD 800	RESPONSIBLE CONDUCT IN RESEARCH TRAINING *	0
IPBS 805	FUNDAMENTALS OF CELLULAR PROCESSES	3
BIOS 806	BIOSTATISTICS	3
NSC 820	METHODS IN NEUROSCIENCE *	2
NSC 896	RSCH OTHER THAN THESIS (or IPBS 896)	1-9
NSC 911	SPECIAL TOPICS JOURNAL CLUB	1
NSC 922	MOLECULAR & CELLULAR NEUROSCIENCE *	3
NSC 932	SYSTEMS NEUROSCIENCE *	3
NSC 970	SEMINAR (each semester)	1
NSC 999	DOCTORAL DISSERTATION	1-15

Three completed courses must be at the 900 level (including electives and required courses)

**Electives (minimum of 2 courses; 2 graduate-level electives must be completed prior to taking comprehensive exam)**

IPMM 916	CARDIOPULMONARY FUNCTION IN HEALTH & DISEASE	2
IPMM 930	PHYSIOLOGY & PATHOPHYSIOLOGY OF THE KIDNEY	2
BMB 915	PROTEINS & NUCLEIC ACID	3
BMB 921	BIOPHYSICAL CHEMISTRY	3
BMB 975	CRITICAL THINKING AND APPLICATIONS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY	3
MGCB 912	MODERN APPROACHES IN CELL BIOLOGY & MOLECULAR GENETICS	3
MGCB 945	STEM CELL AND DEVELOPMENT BIOLOGY	2
MMI 901	DEVELOPMENTAL NEUROBIOLOGY	3
NSC 930	NEUROIMMUNOLOGY	3
PMI 940	MOLECULAR BASIS OF DISEASE	3
PHAR 901	RECEPTOR & CELL SIGNALING	3

PHAR 902	HUMAN SPECIFIC DISEASE MODELING IN MICE	2
PHSC 910	PHARMACOKINETICS AND BIOPHARMACEUTICS	3
PHSC 950	ADVANCED TOXICOLOGY	3

Each student and his/her Supervisory Committee will determine the appropriate elective courses

**\*Indicates course must be completed prior to Comprehensive Exam**

### MD/PhD Curriculum

Upon successfully completing Phase 1 of the College of Medicine curriculum, the requirements for completing **IPBS 803**, **NSC 820**, and **2 electives** will be waived. Hence, MD/PhD students enrolled in the IGPBS - Neuroscience doctoral program must complete only the following courses:

Code	Title	Credit Hours
<b>Required Courses:</b>		
GRAD 800	RESPONSIBLE CONDUCT IN RESEARCH TRAINING *	0
BIOS 806	BIOSTATISTICS	3
NSC 911	SPECIAL TOPICS JOURNAL CLUB	1
NSC 932	SYSTEMS NEUROSCIENCE	3
NSC 970	SEMINAR	1
NSC 999	DOCTORAL DISSERTATION	1-15

**\*NOTE: See Graduate Program Director for requirements regarding Comprehensive Exam.**