

**PRINCIPAL ADMINISTRATIVE
POSITION DESCRIPTION**

for the period 09/15/2020 to 07/30/2023

NAME: _____

TITLE: Postdoctoral Fellow

DEPARTMENT: Pharmacology

POSITION FUNCTION

The Postdoctoral Fellow will perform independent and/or directed research activities to fulfill the aims of the laboratory's NIH-funded grant under the direction of the laboratory Principle Investigator (PI), Dr. Ben Richardson in the Department of Pharmacology at Southern Illinois University School of Medicine in Springfield, IL. Broadly, this laboratory addresses issues in understanding neural circuits and their role in disease using a multi-level state-of-the-art approach. The primary activities of the Fellow will be to perform viral injections in rodents, whole cell electrophysiology, microscopy, and training of students and laboratory staff.

The main role of the Fellow is to design and execute studies aimed at performing functional assessment of sensorimotor circuits. Specifically, these studies will identify the anatomical and functional components of direct projections from the basolateral amygdala (BLA) and cerebellum (CB) to the thalamic reticular nucleus (TRN), which may be important for providing emotional and multi-modal sensory modulation of sensory filters in the TRN. Using an optogenetic approach, the fellow will assess the neurotransmitter released by each projection and the functional and molecular identity of neurons forming this projection in cerebellar nuclei and amygdala. These data will provide a foundation for identifying the functional impact of cerebellar and/or amygdala projections to the thalamic reticular nucleus regarding dynamics of this network, influence auditory processing in the thalamus, and involvement of these projections in stimulus selection and attention.

Funding for the position is for three years, but may be extended dependent upon acquisition of additional funding and Fellow performance.

ORGANIZATIONAL RELATIONSHIPS

The Fellow will report to (PI) Principal Investigator. PI reports to the Chairman of Pharmacology. The Chairman of Pharmacology reports to the Dean and Provost.

DUTIES AND RESPONSIBILITIES

The Postdoctoral Fellow will work with Dr. Richardson to design and execute experiments in order to maintain progress on NIH-funded research projects and/or develop new or independent research projects. Specifically, the fellow will lead ex vivo electrophysiological experiments to assess the function of the CN→TRN and BLA→TRN pathways. She/He will be involved in experimental design, electrophysiological recording, surgical preparation of animals, statistical data analysis, and manuscript preparation for all electrophysiological and anatomical experiments in the project. The Fellow will also contribute to general laboratory management and training of graduate students or other research staff.

Demonstrates, by actions, commitment to the mission and the behavioral standards of SIU School of Medicine. Provides excellent service to both internal and external customers through collaboration and partnership; compassion and respect; integrity and accountability; diversity and inclusion; as well as continuous learning and improvement.

“The following information is intended to be representative of the work performed by incumbent in this position and is not all-inclusive. The omission of a specific duty or responsibility will not preclude it from the position if the work is similar, related, or a logical extension of position responsibilities.”

I. Administration	<u>10</u> %
1. Help obtain information relevant to making purchase decisions.	
2. Direct the management and genotyping of the animal colony in conjunction with research staff.	
3. Help order approved laboratory supplies and reagents.	
4. Assist with scheduling experiments, laboratory equipment usage and availability.	
II. Teaching	<u>15</u> %
1. Assist in training students and laboratory staff.	
III. Research	<u>75</u> %
1. Conduct investigator-initiated and independent research projects under the general supervision of the PI or in conjunction with graduate students.	
2. Perform survival viral injection surgery in rodents.	
3. Design neuron tract tracing and whole-cell electrophysiology experiments.	
4. Perform or direct histological preparation (including microscopy) and neurochemical procedures consistent with the project.	
5. Prepare reagents used for experiments with accuracy and consistency.	
6. Perform data reduction and analysis.	
7. Maintain detailed records of laboratory work performed.	
IV. Service	<u>0</u> %

AUTHORITY AND RESPONSIBILITY

The Fellow may supervise graduate student or research staff as assigned by the PI. The Fellow will maintain accurate and updated laboratory records and protocol compliance. The Fellow can make recommendations to PI regarding employee hiring but has no authority to act.

MINIMUM QUALIFICATIONS

PhD in an appropriate field (e.g. pharmacology, biology, neuroscience, etc.).
Experience in at least one of the following: stereotaxic viral injection or electrophysiology
Sensitive to the needs of underrepresented minority populations.

DESIRABLE QUALIFICATIONS

Experience in data analysis and preparation for publication.
Excellent written and oral communication skills.
Self-motivated, well-organized, detail-oriented, displays initiative.
Ability to work well in a team and independently.
Previous experience working with mice or rats.

WORKING CONDITIONS/PHYSICAL DEMANDS

The Postdoctoral Fellow will work in Dr. Richardson's laboratory and in the SIU animal facility, which includes the use of potentially hazardous chemicals. No physical demands are present.

Incumbent

Date

Supervisor

Date

Department Head/Chair

Date