Neuroscience Faculty Membership Application

Dear Faculty Member,

Thank you for your interest in joining the University of Utah Interdepartmental Program in Neuroscience (IPN). Please find below our official policy regarding faculty membership. Membership in the program requires both the willingness and the ability to mentor graduate students, as well as participation in teaching and administrative duties. All program members are expected to engage in program responsibilities, including instruction and governance. Members are also required to complete a faculty mentorship training equivalent to the 8 hour CIMER-based introduction to mentoring course within 1 year from the start of IPN faculty membership.

Applicants must submit the following materials:

- A current curriculum vitae.
- A letter from the department chair requesting membership and confirming departmental support for graduate student funding should the mentor be unable to provide it.
- A personal statement from the applicant outlining their commitment to mentoring graduate students, participating in teaching and administration, describing research alignment with programmatic themes, and suggesting potential courses they can teach or develop.
- The completed attached form.

Applications should be submitted directly to the Program Manager. Submissions will be reviewed by the IPN Directorate. For inquiries regarding these requirements or your current membership status, please email nicole@neuro.utah.edu.

Sincerely,

Nicole Chelesté Caldwell
Program Manager

Enclosures: Course Descriptions; Neuroscience Program Participation Form

NEUROSCIENCE PROGRAM COURSES

NEUSC:

6010 Frontiers in Neuroscience (1)
Presented by program faculty, updating ongoing research in the Neuroscience Program.

6030 Current Issues in Neuroscience (1)
Conducted in a journal club format where each semester involves faculty-guided analysis and discussion of current and fundamental literature in a topical area using student presentations. Topics range from development, brain imaging, membrane biophysics, channels, sensory transduction, etc.

6040 Cellular and Molecular Neuroscience (4)
The bulk of this course will focus on the cellular mechanisms of signaling. The topics to be covered include basic neuronal/glial morphology and cell biology; neurostructural mapping and identification; basic neural development; cytoskeleton-structure and biochemistry; basic membrane biophysics; cable properties; ion channel biophysics and molecular biology; synaptic transmission; neurotransmitter gated ionotropic systems; and neurotransmitter gated metabotropic systems.

6050 Principles of Systems Neuroscience: (4)
Understanding how the brain works is one of the deepest and most exciting challenges confronting modern science. This course will explore systems-level functioning of the nervous system, beginning with relatively concrete issues of sensory coding and motor control, and expanding into more abstract, but equally important, higher-order phenomena, such as language, cognitive and mood disorders, states of arousal, and experience-dependent modifications of neuronal operations.

6100 Visual Neuroscience I (3) Prerequisite: NEUSC 6040.
Advanced course addressing optics, photochemistry, biochemistry, biophysics, anatomy, neurochemistry, circuitry, and electrophysiology of visual processing at the level of the vertebrate retina.

6200 Didactic Lectures in Pain and Functional Disorders (1)
Lectures by experts in the field include topics from Philosophy to Neurosurgery, Yoga to neuroablation, holistic treatment to pharmacotherapy all focused on the mechanisms and treatment of Pain and related disorders (including Fibromyalgia, Chronic Fatigue Syndrome, neuropathic pain, chronic back pain, irritable bowel syndrome, interstitial cystitis, headache, and others). All lectures are scheduled by the Director of the Pain Research Center, Dr. Richard Chapman, and Dr. Shane Brogan, Director of the Chronic Pain Center.

6245 Cellular and Molecular Neurophysiology Laboratory (1)
Electrophysiology and video microscopy study of nerve, muscle, and synapse. Meets M-F 8AM-5PM for one week before the start of the fall semester.

6250 Molecular Biology Laboratory (1)
An accelerated course designed to introduce graduate students to basic laboratory techniques used to study DNA, RNA, and proteins. Techniques covered include solution preparation, PCR, digestion of DNA with restriction enzymes, DNA cloning, bacterial transformation, plasmid minipreps, in vitro transcription, electrophoretic separation of DNA, RNA, and proteins, and computer analyses of DNA and protein sequences. Meets M-F 8AM-5PM for one week before the start of the fall semester.

6300 Computational Neuroscience (3)
This course focuses on use of computational models to explore classical and modern problems in neurophysiology, including the integrative properties of single neurons, representation of sensory stimuli in single neurons and neuronal populations, pattern representation and completion in neural networks, and mechanisms of learning and adaptive behavior. Students are expected to perform a substantial amount of programming in problem sets and a course projects.

6500 Advances in Vision Research (3)
A landscape course surveying the major problems in vision research and ophthalmology, integrating basic principles of visual pathways, significant unsolved problems in the field, clinical correlations, and profiles of key research projects.

6900 Neuroscience Rotations (1)
Neuroscience rotations are the prime mechanisms by which students become exposed to working laboratory science and attempt to match up with prospective mentors. All students complete three rotations in the first year as part of their formal training and to find prospective mentors.

7750 Developmental Neurobiology (1.5) *Cross listed as ANAT 7750.*
Cellular and molecular biology of nervous system development.

7790 Light Microscopy and Digital Imaging (2) *Cross listed as ANAT 7790.*
Laboratory and lecture course of basic and advanced microscopic techniques. Phase contrast, fluorescence, polarization microscopy, photo and cinemicrography, transmission, scanning electron microscopy, and confocal user scanning microscopy.

7920 Quantitative Methods in Neuroscience (1)
This course teaches the fundamentals of common quantitative methods in neuroscience and best practices for experimental design, execution, and analysis in neuroscience with the goal of improving scientific rigor and reproducibility.

7950 Professional Skills/Grant Writing (2)
This course will provide a brief overview of professional skills for graduate students and postdoctoral fellows and will focus on how to write grant proposals in the biomedical sciences.

Interdepartmental Program in Neuroscience
Participation Form

This Program is developed and managed by participating faculty. Each member is expected to participate in Program functions, including mentoring graduate students, teaching courses, serving on committees, interviewing prospective students, and attending Program events.

Some of the Program annual activities include the Bioscience Symposium, the regional Neuroscience symposium at Snowbird, seminar series, and recruiting weekends. Recruiting weekends are usually in January and February, and faculty participation is crucial to the continuing success of the Program.

The committees of the Neuroscience Program are:

- Admissions Committee: reviews applications and selects the students that will be invited for interviews and accepted to the Program. (8-10 members)
- Curriculum Committee: meets throughout the year and coordinates the curriculum for the first-year students, i.e., journal clubs, electives, and core courses. (3-4 members)
- Advising Committee: regularly meets with first year students as an advisor prior to the student choosing a laboratory mentor. Also meets with other students as needed. (3-4 members)
- Recruitment Committee: helps the program become more visible through advertising and identifying conferences, colleges, universities to send literature. (3-4 members)

Please indicate which level you are applying for:

Participating Faculty: fully funded research program: _____
Associate Faculty: able to teach and serve on committees but not training students: ____

Please circle which committees you are interested in joining.

Admissions Committee	Student Advising Committee
Recruitment Committee	Curriculum Committee

Please list courses you are interested in co-teaching (see attached).

_____ _____

_____ _____

_____ _____

*Please initial that you agree to complete faculty mentor training within one year of joining the IPN _____

Policy on Faculty Responsibility for Graduate Students
NEUROSCIENCE – 2025

Stipend
The stipend for graduate students (currently $38,110/year) is determined by the Interdepartmental Program in Neuroscience (IPN). IPN pays the stipend for students during their first academic year from August - May.

- Advisors are responsible for the stipend of students working in their labs during subsequent years and must meet the stipend levels determined by the programs.
- Faculty without external funding (or a grant) but able to support a student must consult with the Neuroscience Director before accepting a student.
- Faculty who has never trained and graduated a University of Utah graduate student, must appoint a co-mentor who is a seasoned Neuroscience faculty who has successfully trained and graduate a grad student from their labs.
- Students and their advisor should complete a Faculty Agreement Form (obtained from the Neuroscience Admin Office) at the time the student is accepted to the lab.
- It is the responsibility of the faculty advisor to inform their department payroll personnel of the source of funds used to support each student. Department payroll personnel and the Neuroscience Admin office must be notified of changes in payroll support of a Neuroscience student promptly.

Tuition
The Graduate School provides tuition coverage via the Tuition Benefits program (TBP) for graduate students for a total of 10 semesters (5 years).

- Students must maintain a 3.0 GPA, remain in good standing and up to date with program requirements to be eligible for tuition coverage.
- Advisors are responsible for tuition payments once a student is no longer eligible for tuition benefit program.
- Note: Non-domestic/International students pay in-state tuition, providing they register ONLY for thesis research (NEUSC/ANAT 7970 or similar).
- Summer semesters do not count toward tuition waiver allotment.

Differential and Specialty Fees
Certain courses have differentials or special fees included which are not covered by the TBP.

- It is the student's responsibility to request their faculty pay for these fees or the student will be responsible for covering these costs.
- If the faculty advisor agrees to cover the costs on behalf of the student, department personnel are required to administer payment on time through the Scholarship Administration System. This fee **may** be payable from a Project.

Health/Dental/Vision Insurance
Faculty advisors are responsible for basic health insurance (including dental and vision) for individual students in their labs, although the mechanism for coverage depends on the classification of the student, as follows:

- Research Assistant (RA, job code 9314*) paid from an activity via department F&A
- or Research Assistant (RA, job code 9314*), paid from an external research grant (i.e., from a "Project," a 5000 account), **with** 0.50 FTE **and** receiving tuition benefit. The premium costs of health, dental and vision insurance is paid as bi-monthly deductions from the project's benefit allotment (termed "subsidized"

insurance or GSHIP*). Students paid from other projects should check with the Office of Sponsored Projects (OSP) and follow the guidelines for that award to determine if health insurance can be paid from that account.

- Graduate Fellow (GF*) (i.e., or from a fellowship that does not pay tuition). The faculty advisor is responsible for the entire premium cost of health, dental and vision insurance.
- Students not eligible for a tuition benefit program. The faculty advisor is responsible for the entire premium cost of health, dental and vision insurance.
- The decision to provide increased coverage or family coverage is left to the faculty advisor on a student-by-student basis. The cost of increased or family insurance cannot be paid from a Project and must be paid from an Activity. The Neuroscience Program Admin office must be notified immediately when increased or family coverage is agreed upon along with the Activity by which the coverage will be paid.

International Fees

- Faculty advisors are responsible for international fees for students in their laboratory (currently $150/semester). This fee cannot be paid from a Project and must be paid from an Activity. Department personnel are required to administer payment on time through the Scholarship Administration System.