THE UNIVERSITY OF UTAH

August 28, 2017

Approved
David W. Pershing
9-7-17

A. Lorris Betz
Interim Senior Vice President for Health Sciences
5th Floor, Clinical Neuroscience Center
Campus

RE: Graduate Council Review
Interdepartmental Program in Neuroscience

Dear Vice President Betz:

Enclosed is the Graduate Council's review of the Interdepartmental Program in Neuroscience. Included in this review packet are the report prepared by the Graduate Council, the Program Profile, and the Memorandum of Understanding resulting from the review wrap-up meeting.

After your approval, please forward this packet to President David Pershing for his review. It will then be sent to the Academic Senate to be placed on the information calendar for the next Senate meeting.

Approved:

A. Lorris Betz, MD, PhD
Interim
CEO, University of Utah Health
Executive Dean, University of Utah School of Medicine
Senior Vice President for Health Sciences

Sincerely,

David B. Kieda
Dean, The Graduate School

Encl.

XC: David Krizaj, Interim Director, Neuroscience Program
Richard Dorsky, Neuroscience Program
W. Rory Hume, Assoc. Vice Pres. for Academic Affairs and Education

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The Graduate School - The University of Utah

GRADUATE COUNCIL REPORT TO THE SENIOR VICE PRESIDENT
FOR HEALTH SCIENCES AND THE ACADEMIC SENATE

April 24, 2017

The Graduate Council has completed its review of the Interdepartmental Program in Neuroscience. The External Review Committee included:

David Morilak, PhD
Director, Neuroscience Graduate Program
Director, Center for Biomedical Neuroscience
Department of Pharmacology
University of Texas Health Science Center

Cheryl Sisk, PhD
University Distinguished Professor
Neuroscience Program
Michigan State University

The Internal Review Committee of the University of Utah included:

Donald H. Feener, PhD
Professor
Department of Biology

Nancy A. Nickman, PhD
Professor
Department of Pharmacotherapy

This report of the Graduate Council is based on the self-study submitted by the Neuroscience Program, the reports of the external and internal review committees, and a joint response from the Program Director and Vice President for Research to the external and internal committee reports.

PROGRAM PROFILE

Program Overview

The Interdepartmental Program in Neuroscience, which was formed in 1986, is a vibrant, collaborative training community, spanning both the main and medical campuses. In addition to the Program Director, there is a Program Directorate comprised of five additional faculty, four of whom serve as chairs of key operational committees (Recruitment, Admissions, Advising, Curriculum) and one who is the former Program Director. Two students are also on this leadership team, rotating annually. Altogether, this program has excellent leadership, enhanced further by a longstanding and highly-regarded Program Manager.

As stated in the self-study, the Program has three main objectives: 1) Recruitment, admission, and retention of outstanding doctoral students; 2) Academic training of PhD students; and 3) Enhancing collegial interactions between active neuroscientists at the University of Utah. At the time of review, the program encompassed around 70 faculty and 50 graduate students.

The Program substantively addressed the recommendations of the last Graduate Council Review. To achieve their strategic goals of decreasing time to degree and regaining NIH training grant funding, current plans include making curricular changes and creating ties to the Neuroscience Initiative on campus.

Although the interdepartmental nature of this program is similar to neuroscience programs nation-wide, its unique structure at the University of Utah creates specific challenges in terms of resource allocation and campus-wide coordination.

Faculty

This program does not have dedicated faculty lines, but instead draws faculty from over 15 departments who align within the disciplinary umbrella of neuroscience. This includes a wide array of expertise and approaches that range from molecular to translational. Faculty apply for Program membership with the expectations of an active research program in neuroscience, an appointment in a participating department, support from the department chair, and stated commitment to the Neuroscience Program.

Faculty from across the ranks are represented, with 63 tenure-line faculty distributed among full professor (41), associate professor (8), assistant professor (14) and six career-line (research) faculty. Although this is clearly an excellent critical mass of faculty, external reviewers note that improving communication to leaders of certain departments (such as those that are more clinical or engineering based) would help ensure that these diverse academic homes appreciate the value of participating in this graduate program and promote and encourage appropriate faculty to fully engage at this level. Internal

reviewers suggested that, in general, having more senior faculty participating at a higher level in Program teaching and service would be beneficial.

Collectively, this cadre of faculty brought in ~$45 million dollars in research funds (direct costs) this past year, due in part to leveraging research programs in which graduate students are integral.

Students

The Program admits 7-14 students a year in a selective admissions process. Reviewers were impressed by the gender and geographic diversity of the student body, and noted increasing racial and ethnic diversity, attributed to the Program's proactive recruiting efforts in this arena. Specifically, the self-study cites 37% of students matriculating in 2015, with 17% of total trainees being underrepresented minority individuals. Further efforts to recruit and retain URM students are planned. Although the 2016 census was fairly balanced by gender (19 female; 23 male), the pattern seems to be toward higher numbers of male students.

Students are highly engaged in program leadership and there are open channels of communication within this peer group as well as between students and faculty leaders. This contributes to high morale among the students as well as a strong sense of program ownership.

Curriculum

Coursework includes cell, molecular and systems neuroscience, neuroanatomy, and developmental neurobiology. "Bootcamps" are an innovative and effective feature of the curriculum that are intensive workshops focused on ensuring students have some of the central laboratory and technical skills they will need for their research. The external reviewers stated that this curriculum provided "a broad didactic education in Neuroscience." Notably, the program of study also includes professional skill building. In addition to coursework, students have many opportunities to give talks and get feedback. There is also a supervised teaching experience and an annual retreat. Students are involved in outreach and have opportunities to attend national and international scientific meetings.

Students conveyed to internal reviewers that the core coursework load was too high, sometimes redundant, and overly focused on cellular-molecular vs. computational-system level aspects of neurophysiology. Some of these issues will likely be addressed by the proposed changes to the curriculum, which will involve condensing some courses. Students also hoped for more flexibility in course offerings; this would need to be addressed – in collaboration with student input – in electives available to students after completion of the core curriculum.

Program Effectiveness and Outcomes Assessment

The overall retention rate is 78% and median time to degree is 6.2 years (56% of students finish in less than or equal to 6 years). There is a strategic goal to decrease time to degree to a target of 5 years.

Outcomes assessment includes an annual review in which external visitors focus on student poster and oral presentations. Feedback from students, alumni, and from the previous program review has influenced the curriculum and program planning. One sign of success of this interdisciplinary training environment is reflected in the placement record of graduates. The vast majority of graduates are employed (98% hold science-related positions). Many graduates obtained postdoctoral positions in competitive programs; longer-term occupations include FDA Consumer Safety Officer, Science Editor, Scientific Curator, Biostatistician, and faculty positions.

Students expressed a desire for more information about and exposure to career options outside of academia. They also wanted more consistent and helpful first-year advising, with bolstered resources for struggling students as well as more explicit and consistent expectations from rotation advisors.

A reviewer suggestion, already under consideration, is to make the qualifying exam be related to the research in the student's laboratory, which facilitates fellowship writing and potentially streamlines progress on the thesis topic.

Facilities and Resources

No major issues with physical facilities surfaced in the review, with the exception of laboratory needs for "bootcamp" sessions. In terms of resources, reviewers acknowledged that University administration has provided stability to the Program, especially in the face of a gap of T32 NIH training grant funding. However, the stability of central first-year student stipend support, which is crucial for this program, was not clear and there was concern about covering gaps in student support created by lapses in funding of individual faculty. The centrally supplied tuition benefit plan was acknowledged for its vital role, but also perceived to create inequities due to the time constraints on students who come in with master's degrees. The Neuroscience Initiative on campus appears to be a synergistic effort that will reinforce and bolster campus-wide connections.

COMMENDATIONS

1. The Neuroscience Program has created a collegial and cohesive community that supports student success and further reinforces the research excellence of its faculty.

2. Involvement of students in leadership and student-driven activities (seminars, Snowbird Symposium, Brain Awareness Week) stands out as a unique and valuable feature of the program.

3. Many activities centered on recruiting underrepresented minority students to the Program have been implemented with success, and will be important to maintain going forward.

4. The Program Manager, Tracy Marble, was uniformly lauded by students, faculty, and reviewers. Her commitment to and highly capable management of the program are commendable.

RECOMMENDATIONS

1. Continue with plans, endorsed by external reviewers, aimed to reduce time to degree. This includes streamlining the core curriculum and making the qualifying exam relate to the thesis research topic.

2. Develop a broad strategic plan for financing student training that includes, but extends beyond, the goal of renewing the T32 that has been associated with this Program.

3. Coordinate efforts to fully capitalize on and synergize with the University of Utah Neuroscience Initiative. This may lead to further breadth and support for trainee opportunities – including research support, travel support, symposium sponsorship, and outreach forums.

4. Implement improvements to communication with faculty and their home departments. Faculty may need more explicit guidance on expectations regarding student and rotation advising, conducting prospective student interviews, and developing innovative electives; departmental leaders may need more communication regarding the value of faculty participation.

5. Convey to administration that tuition benefit restrictions on students with master's degrees create inequity as these students do not typically take less time to graduate, which therefore creates a larger obligation to their faculty advisor.

6. Ensure that administrative support for the Program, including management of a central student database and web-site development, is sufficient to encompass programmatic growth.

Submitted by the Ad Hoc Committee of the Graduate Council:

Katharine Ullman
Professor, Department of Oncological Sciences
Associate Dean, The Graduate School

Lien Fan Shen
Associate Professor, Department of Film and Media Arts

Audrey Thompson
Professor, Department of Education, Culture and Society

INTERDEPARTMENTAL PROGRAM IN NEUROSCIENCE - OBIA PROFILE*

Interdepartmental Program in Neuroscience							
	Year	Year	Year	Year	Year	Year	Year
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Faculty							
Headcount							
With Doctoral Degrees (Including MFA and other terminal degrees, as specified by the institution)							
Full-time Tenured							
Full-time Non-Tenured							
Part-time							
With Master's Degrees							
Full-time Tenured							
Full-time Non-Tenured							
Part-time							
With Bachelor's Degrees							
Full-time Tenured							
Full-time Non-Tenured							
Part-time							
Other							
Full-time Tenured							
Full-time Non-Tenured							
Part-time							
Total Headcount Faculty (for 2016 only)							
Full-time Tenured							
Full-time Non-Tenured							
Part-time							
FTE (A-1/S-11/Cost Study Definition)							
Full-time (Salaried)							
Teaching Assistants							
Part-time (May include TA's)							
Total Faculty FTE							
Number of Graduates (based on program data – not OBIA)							
Certificates							
Associate Degrees							
Bachelor's Degrees							
Master's Degrees (MPhil)						1	1
Doctoral Degrees	2	6	5	10	9	6	6

*Many fields are blank because of the interdisciplinary nature of the Neuroscience program.

	Year 2009-10	Year 2010-11	Year 2011-12	Year 2012-13	Year 2013-14	Year 2014-15	Year 2015-16
Number of Students—(Data Based on Fall Third Week) Semester of Data: _____, 20__							
Total # of Declared Majors	49	48	50	50	52	50	43
Total Department FTE*	37.9	40.8	35.5	36.2	37.7	45.5	34.2
Total Department SCH*	758	816.5	711.5	725	755.5	911.5	685
*Per Department Designator Prefix							
Student FTE per Total Faculty FTE							
Cost (Cost Study Definitions)							
Direct Instructional Expenditures							
Cost Per Student FTE							
Funding							
Appropriated Fund							
Other:							
Special Legislative Appropriation							
Grants of Contracts							
Special Fees/Differential Tuition							
Total							

Memorandum of Understanding
Interdepartmental Program in Neuroscience
Graduate Council Review 2016-17

This memorandum of understanding is a summary of decisions reached at a wrap-up meeting on June 13, 2017, and concludes the Graduate Council Review of the Interdepartmental Program in Neuroscience. A. Lorris Betz, Interim Senior Vice President for Health Sciences; W. Rory Hume, Associate Vice President for Academic Affairs and Education; Richard Dorsky, Director of the Neuroscience Program; David Krizaj, Incoming Interim Director of the Neuroscience Program; David B. Kieda, Dean of the Graduate School; and Katharine S. Ullman, Associate Dean of the Graduate School, were present.

The discussion centered on but was not limited to the recommendations contained in the review summary report presented to the Graduate Council on April 24, 2017. The working group agreed to endorse the following actions:

Recommendation 1: Continue with plans, endorsed by external reviewers, aimed to reduce time to degree. This includes streamlining the core curriculum and making the qualifying exam relate to the thesis research topic.

The Neuroscience Program has redesigned its core curricular requirements in alignment with recent changes made to other University Bioscience Graduate Programs. These changes are intended to move students through requirements more quickly and will be implemented starting Fall 2017. Preliminary exams will be changed to focus on thesis research topics, facilitating earlier 'ownership' of research projects and positioning students to apply for external funding in an efficient manner. Among the metrics used to evaluate these changes, the Program will track both time-to-degree and success students have securing individual fellowships. The Program was also complimented on its unique bootcamp-style classes, which provide intensive training in specific areas and will continue to be offered.

Recommendation 2: Develop a broad strategic plan for financing student training that includes, but extends beyond, the goal of renewing the T32 that has been associated with this Program.

The Program's obligation for financing student training is centered on support for the first year in the Program. Beyond the T32, this largely falls to University administration, and SVP Betz acknowledged that discussion must take place at this upper level to create a strategic, stable plan. Alongside this, the Program should remain vigilant in seeking external sources of funding (e.g., potential opportunities for NSF funding or more focused T32s), as well as local opportunity for collaboration (see Recommendation 3).

Recommendation 3: Coordinate efforts to fully capitalize on and synergize with the University of Utah Neuroscience Initiative. This may lead to further breadth and support for trainee opportunities – including research support, travel support, symposium sponsorship, and outreach forums.

While the Utah Neuroscience Initiative is itself evolving, affiliation with the Interdisciplinary Program in Neuroscience seems natural, as graduate students provide an engine for research and thus are central to a robust neuroscience research community. Support for the annual symposium as well as student travel are already under discussion. And, as the directions and priorities of this Initiative become established, effort to find further synergistic opportunities will be ongoing.

Recommendation 4: Implement improvements to communication with faculty and their home departments. Faculty may need more explicit guidance on expectations regarding student and rotation advising, conducting prospective student interviews, and developing innovative electives; departmental leaders may need more communication regarding the value of faculty participation.

With faculty dispersed across campus and a wide range of home departments, active communication is essential for this Program. The Program Director and Interim Director are well aware of this and are thinking creatively about what would be useful. They are planning to send reports to chairs detailing student contact hours credited to their department via this Program. To ensure that each department recognizes the contribution that a faculty member is making to the Program, a template personalized with individual information was proposed as a mechanism that would also help make department chairs aware of the teaching, mentoring, and publishing accomplishments that relate to participation in the Program. This would be populated with information that the Program is already collecting and could be distributed to synchronize with annual faculty reviews, as well as retention/promotion milestone reviews. With regard to communication to Program faculty about various student issues, the Program Director mentioned that a new advising chair and some new advisors were coming on board and that they are charged with providing necessary guidance. More interest in developing innovative electives would likely flow from a greater sense of receiving credit for these efforts, which the communication planned with the chairs should help accomplish.

Recommendation 5: Convey to administration that tuition benefit restrictions on students with master's degrees create inequity as these students do not typically take less time to graduate, which therefore creates a larger obligation to their faculty advisor.

This issue was raised and discussed at a townhall meeting on graduate education and, by virtue of its inclusion here, has been brought to the attention of the Graduate School deans and Graduate Council. Ways to bolster and improve the tuition benefit program are under consideration, although there are significant practical constraints. Dean Kieda is looking at how to make this work as efficiently as possible in order to maximize resources. At the same time, faculty need to recognize that this program was not originally intended to cover all tuition and that budgeting for some of this cost on grants may be necessary.

Recommendation 6: Ensure that administrative support for the Program, including management of a central database and web-site development, is sufficient to encompass programmatic growth.

A new administrative assistant has some time dedicated to helping Tracy Marble, the long-time and much-appreciated Program Manager. Working in coordination with the other Bioscience Programs has helped with tactics for central database management. The website – and social media presence – are recognized as highly important and are a priority for administrative staff and the incoming chair of student recruitment.

This memorandum of understanding is to be followed by regular letters of progress, upon request of the Graduate School, from the Director of the Neuroscience Program. Letters will be submitted until all of the actions described in the preceding paragraphs have been completed. In addition, a three-year follow-up meeting may be scheduled during AY 2019-20 to discuss progress made in addressing the review recommendations.

A. Lorris Betz
W. Rory Hume
Richard Dorsky
David Krizaj
David B. Kieda
Katharine S. Ullman

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David B. Kieda
Dean, The Graduate School
August 28, 2017