Saint Louis University
Program Assessment Plan

Program (Major, Minor, Core): Neuroscience
Department: Biology and Psychology
College/School: Arts & Sciences
Person(s) Responsible for Implementing the Plan: Dr. Tony Buchanan, Dr. Judith Ogilvie, and Zack Thatcher
Date Submitted: November 13, 2015

Program Learning Outcomes	Curriculum Mapping	Assessment Methods	Use of Assessment Data
What do you expect all students who complete the program to know, or be able to do?	*Where is the outcome learned/assessed (courses, internships, student teaching, clinical, etc.)?*	*How do students demonstrate their performance of the program learning outcomes? How does the program measure student performance? Distinguish your direct measures from indirect measures.*	*How does the program use assessment results to recognize success and "close the loop" to inform additional program improvement? How/when is this data shared, and with whom?*
1. Students will be able to identify core concepts of neuroscience.	NEUR 3000: Introduction to Neuroscience I (Behavioral & Cognitive Neuroscience) NEUR 3020: Introduction to Neuroscience II (Cellular & Molecular Neuroscience) NEUR 4950: Senior Residency/ Senior survey	Selected exam questions from NEUR 3000/3020 that address the core concepts of behavioral and cognitive as well as cellular and molecular neuroscience will be identified. Student responses on these questions will be evaluated. (D) Students will be asked for self-assessment of core concepts acquired on a senior survey and which courses were most beneficial. The survey will be administered to all graduating seniors enrolled in NEUR 4950. (I)	We will determine whether the core concepts of behavioral and cognitive neuroscience are adequately covered in NEUR 3000/3020 as represented on exams and whether student performance on these questions demonstrates knowledge attained. Data will be shared with faculty. Adjustments will be made in the curriculum and/or the assessment process, as needed with particular emphasis on NEUR 3000/3020 and elective courses.

2. Students will be able to synthesize information to formulate hypotheses, design experiments and engage in scientific research.	NEUR 4000: Neuroscience Lab Capstone project NEUR 4950: Senior Residency/ Senior survey	A rubric will be used to assess student performance on these aspects of NEUR 4000 (D). Information on participation in research activities and an assessment rubric will be sent to all capstone research project mentors (D). Finally, students will be asked for self-assessment on a senior survey and which courses were most beneficial (I).	Assessment data will be shared with faculty. Adjustments will be made in the curriculum and/or the assessment process, as needed. We will determine if any of the capstone options currently available should be discontinued, modified, or expanded; whether this outcome is being appropriately addressed in NEUR 4000; and whether selected electives should be included in future assessments.
3. Students will be able to communicate neuroscientific information in a clear, reasoned manner, both verbally and in writing.	NEUR 4000: Neuroscience Lab, PSY 3100: Brain, Mind, & Society, PHIL 4280: Biology & Mind Capstone project NEUR 4950: Senior Residency/ Senior survey	Rubrics will be used to assess student performance in required courses that incorporate appropriate oral and/or written assignments (D). Information on presentation of research activities will be collected from all capstone project mentors (D) and senior surveys (I). Senior surveys will also include self-assessment (I).	Assessment data will be shared with faculty. Adjustments will be made in the curriculum and/or the assessment process, as needed. We will determine if any of the capstone options currently available should be discontinued, modified, or expanded; which courses are most successful in addressing this outcome; and whether selected electives should be included in future assessments.
4. Students will have the foundation to successfully pursue post baccalaureate education and/or professional career.	Outcome will be learned throughout the curriculum but particularly in group and individual mentoring meetings with Neuroscience faculty, CAS advisors, and Pre-professional Health advisors. Outcome will be assessed in senior surveys and post baccalaureate surveys.	The percentage of seniors that feel prepared to pursue their postgraduate career goals will be determined by the senior survey (I). The percentage of graduate that have entered graduate school, medical school or other post baccalaureate degree programs 4 years after graduation will be determined by the post baccalaureate survey (D).	Assessment data will be shared with faculty. Adjustments will be made in the curriculum, mentoring and/or the assessment process, as needed.

Note: D = Direct assessment; I = Indirect assessment

1. It is <u>not recommended</u> to try and assess (in depth) all of the program learning outcomes every semester. It is best practice to plan out when each outcome will be assessed and focus on 1 or 2 each semester/academic year. Describe the responsibilities, timeline, and the process for implementing this assessment plan.

> Year 1: Academic Year 2015-16 (AY2015-16): Because the Neuroscience Program is new and the first full offering of our curriculum (including NEUR 3000, 3020, & 4000) will not be complete until the end of AY2016-17, our assessment focus in Year 1 will be on developing the Senior Survey and rubrics to be used in future years. The results of the senior surveys will be reviewed to determine whether it should be modified before Year 2.

> Year 2: Academic Year 2016-17 (AY2016-17): At the end of our first year of offering our full curriculum, we will focus on assessing Program Learning Outcome #1 (*Students will be able to identify core concepts of neuroscience*). Faculty from NEUR 3000 & 3020 will be enlisted to provide specific exam questions that address the core concepts of behavioral, cognitive, cellular, and molecular neuroscience. Student responses on these questions will be assessed to determine level of mastery of these concepts. Additionally, senior surveys will be used to assess the indirect outcome of core competencies in neuroscience.

> Year 3: Academic Year 2017-18 (AY2017-18): The assessment focus of Year 3 will shift to Program Learning Outcomes #2 & 3 (*Students will be able to synthesize information to formulate hypotheses, design and conduct scientific experiments & Students will be able to communicate neuroscientific information in a clear, reasoned manner, both verbally and in writing*). We will refine rubrics developed in Year 1 to assess student research and student communication outcomes. Additionally, senior surveys will be used to assess research and communication skills.

> Year 4: Academic Year 2017-18 (AY2017-18): In Year 4, we will focus on Program Learning Outcome #4 (*Students will have the foundation to successfully pursue post baccalaureate education and/or professional career*) in order to examine the pattern of student success over the course of the first few years of the program. Additionally, we will reevaluate our assessment plan to determine those Program Learning Outcomes that previous year's assessments had indicated room for improvement. Finally, each year's assessment will include targeted questioning on the senior survey in order to examine specific issues of student concern that may need to be addressed on years in which a particular Learning Outcome is not specifically addressed.

2. Please explain how these assessment efforts are coordinated with Madrid (courses and/or program)?

The neuroscience faculty has been in contact with the Chair of the SLU Madrid Department of Psychology with the expressed goal of offering summer courses at the Madrid campus. Discussions between campuses continue, with a tentative plan to offer PSY 3100: Brain, Mind, & Society in the Summer of 2017. Other courses that may be offered on both campuses include BIOL 4930: Neurobiology of Disease. Currently, however, no neuroscience courses are offered at SLU Madrid and so our assessment efforts are not currently coordinated across campuses.

3. **The program assessment plan should be developed and approved by all faculty in the department. In addition, the program assessment plan should be developed to include student input and external sources (e.g., national standards, advisory boards, employers, alumni, etc.). Describe the process through which your academic unit created this assessment plan. Include the following:**

    a. Timeline regarding when or how often this plan will be reviewed and revised. (This could be aligned with program review.)

    The program assessment plan will be reviewed on an annual basis and revised annually or as warranted.

    b. How students were included in the process and/or how student input was gathered and incorporated into the assessment plan.

    Student input has been gathered in informal polling of students in classes and mentoring sessions. Students generally expressed a preference for course-embedded assessment rather than a Major Field Test, which is consistent with our current assessment plan.

    c. What external sources were consulted in the development of this assessment plan?

    Neuroscience programs from other universities have established criteria for the assessment of undergraduate neuroscience education. Several of these programs have made their assessment plans and materials freely available, including Emory University, St. Olaf College, and Wooster College. Further, a recent publication by Muir (2015) outlines the state of the science of undergraduate neuroscience assessment. Finally, Kathleen Thatcher was instrumental in providing information, support, and constructive feedback in the development of this plan.
    Muir, G. (2015). Mission-driven, manageable and meaningful assessment of an undergraduate neuroscience program. *The Journal of Undergraduate Neuroscience Education, 13*, A198-A205.

    d. Assessment of the manageability of the plan in relation to departmental resources and personnel

    In order to ensure that the assessment plan is manageable with the limited resources of our small (7 faculty) program, we will make extensive use of course-embedded assessments and the senior survey. Program faculty and administrative secretary will determine the time frame and assess the designated learning outcome on a rolling basis.