Ohio | Board of Regents
University System of Ohio

John R. Kasich, Governor
John Carey, Chancellor

Directions for submitting a request for approval of undergraduate degrees/degree programs

University System of Ohio (USO) institutions requesting approval from the Chancellor of the Ohio Board of Regents to deliver undergraduate programs are required to complete and submit the enclosed proposal as part of the approval process. If the institution has not already done so, it must submit an Initial Inquiry to begin the review process. Questions about the Initial Inquiry or the proposal template may be submitted to Matt Exline, assistant director for program development and approval, at (614) 728-3095 or mexline@regents.state.oh.us. Once the initial inquiry is received, an institutional mentor will be assigned to the institution to assist in the development and review of the request.

Depending on the nature of the request, the institution may be asked to submit additional information in the form of a **supplement or supplements** (e.g., online course offerings, off-campus locations, flexible delivery schedules etc.). The institutional mentor will assist the institution in determining what forms are needed to complete the review the process.

If the request also requires the approval of the Higher Learning Commission of the North Central Association of Colleges and Schools (HLC), or if the institution also intends to pursue programmatic/specialized accreditation for the request, the institution may submit materials prepared for HLC or the programmatic/specialized accrediting body in lieu of submitting this proposal and any applicable supplement forms.

If the institution is submitting a request for an **educator preparation program**, additional information will be requested to complete the review.

The institutional mentor will provide directions for submitting the request. Electronic submission of all review materials is preferred. The proposal itself must remain a Microsoft Word document. Appendix items should be clearly labeled and may be submitted as Microsoft Office documents (e.g., Word or Excel) or as PDF documents. If the electronic documents are too numerous or too cumbersome to email, you may copy them to a CD or "flash drive" and then mail the CD or flash drive to our office.

25 South Front Street
Columbus, Ohio 43215

phone 614.466.6000
fax 614.466.5866
web **www.OhioHigherEd.org**

REQUEST

Date of submission: January 12, 2017

Name of institution: Wright State University

Degree/degree program title: Bachelor of Science in Neuroscience

Primary institutional contact for the request

Name: Patrick Sonner
Title: Instructor and Director of the Undergraduate Program for Neuroscience
Phone number: 937-775-3212
E-mail: patrick.sonner@wright.edu

Delivery sites:
(List all sites where the proposed program will be delivered)
Wright State University Main Campus: 3640 Colonel Glenn Hwy. Dayton, Ohio 45435

Date that the request was approved by the institution's governing board (e.g. Board of Trustees, Board of Directors):

Proposed start date: August 28th, 2017

Institution's programs: associate, bachelor's, master's doctorate

Educator Preparation Programs:
Indicate the program request leads to educator preparation licenses or endorsements.

Licensure	**No**
Endorsement	**No**

SECTION 1: INTRODUCTION

1.1 *Provide a brief summary of the request that will serve as an introduction for the reviewers.*

Wright State University is applying for acceptance of a new interdisciplinary bachelor of science degree in neuroscience. Currently Wright State has a bachelor of science in psychology—behavioral neuroscience concentration; an M.S. degree in physiology and neuroscience; and a Ph.D. in biomedical sciences, neuroscience and physiology concentration. By emphasizing cellular and molecular neuroscience, the B.S. in neuroscience complements the existing psychology major. The B.S. in neuroscience will be primarily administered by the department of Neuroscience, Cell Biology and Physiology, with the departments of Psychology and Biological Sciences contributing significantly to the academic program. The core courses of the major are designed to be flipped classroom, active learning experiences. The interdisciplinary nature of the program will engage the students in applying physics, biology, chemistry and mathematics to key concepts, skills and practices of neuroscience. This will prepare graduates for a broad array of career choices.

SECTION 2: ACCREDITATION

2.1 Regional accreditation

- *Original date of accreditation:* 07/26/1968
- *Date of last review:* 06/28/2016
- *Date of next review:* 2025-2026

2.2 Results of the last accreditation review

- *Briefly describe the results of the institution's last accreditation review and submit the results (e.g., agency report, accreditation letters, requests for follow-up, etc.) as an appendix item.*

On July 1, 2016, Wright State received a letter from the Institutional Actions Council of the Higher Learning Commission continuing our accreditation. In that letter the Commission requested a report due in June 2017 on our operations, specifically asking for evidence of a more extensive compliance program. All academic-related aspects were found satisfactory. The action letter is attached in Appendix 1.

2.3 Notification of appropriate agencies

- *Provide a statement indicating that the appropriate agencies (e.g., regional accreditors, specialized accreditors, state agencies, etc.) have been notified of the institution's request for authorization of the new program.* ***Provide documentation of the notification as an appendix item.***

The Ohio Department of Higher Education has been informed of our intent to develop a new undergraduate Neuroscience major via an Initial Inquiry Form (Appendix 2). Jane Fullerton was assigned as our institutional mentor; both she and Matt Exline have been consulted at various points regarding the approval process.

To our knowledge, there are no regional or specialized accreditors for undergraduate neuroscience programs.

SECTION 3: LEADERSHIP—INSTITUTION

3.1 Mission statement

- *Insert/describe the institution's mission statement.*

  We transform the lives of our students and the communities we serve.
  We will:
  1. Build a solid foundation for student success at all levels through high quality, innovative programs
  2. Conduct scholarly research and creative endeavors that impact quality of life
  3. Engage in meaningful community service
  4. Drive the economic revitalization of our region and our state and empower all of our students, faculty, staff, and alumni to develop professionally, intellectually and personally

3.2 Organizational structure

- *Provide a copy of the institution's organizational chart as an appendix item.*

See Appendix 3.

SECTION 4: ACADEMIC LEADERSHIP—PROGRAM

4.1 Organizational structure

- *Describe the organizational structure of the proposed program. In your response, indicate the unit that the program will be housed within and how that unit fits within the context of the overall institutional structure. Further, describe the reporting hierarchy of the administration, faculty, and staff for the proposed program.*

The undergraduate Neuroscience Program will be offered through the Department of Neuroscience, Cell Biology and Physiology (NCBP), which is a matrix department within the College of Science and Mathematics and the Boonshoft School of Medicine. However, the Neuroscience degree program will reside exclusively within the College of Science and Mathematics. All schools and colleges are overseen by the Office of the Provost.

In addition to the department Chair, NCBP also has a Vice-Chair for Research and a Vice-Chair for Education. These administrators meet regularly to discuss matters centered around space, personnel, research, education, and service within the department.

Day-to-day operations of the Neuroscience Program will primarily be the responsibility of the Program Director (see below). The Program Director will report directly to the department Chair, and will discuss issues and questions with the department during monthly faculty meetings. Furthermore, the Program Director will meet with an interdisciplinary Advisory Board (see below) to discuss programmatic issues and recommendations. Finally, the Program Director will report annual assessment findings to various College and University level entities (see Section 7).

- *Provide the title of the lead administrator for the proposed program and a brief description of the individual's duties and responsibilities. Include this individual's CV/resume as an appendix item.*

Patrick Sonner, Ph.D. (Instructor) will serve as the *Bachelor of Science Degree Program Director in Neuroscience*. His duties will include: (1) design or aid in the development of new courses; (2) teach in the program; (3) serve as the academic advisor for undergraduate majors through the program; (4) serve in community outreach and recruitment efforts; (5) collect and evaluate data to assess student success during and after completion of the program; (6) work with faculty and outside organizations to optimize student research opportunities; (7) develop and implement strategies for enhancing student retention. Dr. Sonner's CV is attached (see Appendix 4)

- *Describe any councils, committees, or other organizations that support the development and maintenance of the proposed program. In your response, describe the individuals (by position) that comprise these entities, the terms of their appointment, and the frequency of their meetings.*

The Department of Neuroscience, Cell Biology, and Physiology developed an interdisciplinary Advisory Board comprised of faculty across the College of Science and Mathematics to aid in the development of the curriculum and identification of appropriate programmatic assessments. The Advisory Board meets at least once a semester to discuss the above issues. Furthermore, the Advisory Board will meet following each semester to discuss the level of success for course goals and

assessments. The Advisory Board consists of the following faculty members: Dr. Michal Kraszpulski (Instructor; Departments of Psychology and NCBP), Dr. Nick Ritucci (Lecturer; NCBP), Michael Hennessy (Professor; Psychology), Debra Mayes (Assistant Professor; NCBP), Andrew Voss (Assistant Professor; Biology), Javier Alvarez-Leefmans (Professor; Pharmacology & Toxicology), Dan Halm (Associate Professor; NCBP), Assaf Harel (Assistant Professor; Psychology), James Olson (Professor; Emergency Medicine), Sherif Elabasiouny (Assistant Professor; NCBP), Doug Petkie (Professor; Physics), Gale Kleven (Associate Professor; Psychology), Patrick Sonner (Instructor and Program Director; NCBP), Kathy Engisch (Associate Professor; NCBP), Chris Wyatt (Associate Professor; NCBP), David Goldstein (Professor; Biology), and David Ladle (Associate Professor; NCBP).

As well, a unique and small group of interdisciplinary faculty, created each new course for the program in conjunction with the Center for Teaching and Learning. These teams met weekly and discussed and developed best teaching practices, activities and assessment tools every lesson of each course.

4.2 Program development

- *Describe how the proposed program aligns with the institution's mission.*

The mission of Wright State University is: To transform the lives of our students and the community we serve by: (1) building a solid foundation for student success at all levels through high quality, innovative programs; (2) conducting scholarly research and endeavors that impact quality of life; (3) engaging in meaningful community service; and (4) driving the economic revitalization of our region and our state and empower all of our students, faculty, staff, and alumni to develop professionally, intellectually, and personally.

The proposed undergraduate Neuroscience Program is aligned will all of the aspects of Wright State University's mission. For point 1, the program has been designed from the beginning with an interdisciplinary approach and utilizing backward design. The courses have been developed with small interdisciplinary teams, focusing on identifying the learning goals first, then how to assess them, and finally what activities should be used support those assessments. As well, the courses have been designed with best educational practices in active learning to aid in student learning and retention of information and concepts. Regarding points 2 and 3, the Department of Neuroscience, Cell Biology and Physiology houses many laboratories, actively engaged in biomedical research. The program offers students opportunities to work with faculty in laboratory teaching courses, as well as directly in their labs, contributing to cutting-edge research that is clinically relevant, having obvious health benefits and contributions to enhancing quality of life for others. As well, there are many other opportunities across Wright State University for students to engage in community service, including *Friendship Food Pantry*, *Project Linus*, *Crayons to Classrooms*, and others. About point 4, students will have many opportunities to enhance career and personal development during their undergraduate careers. These include formal opportunities, such as resume instruction and advice in SM 1010 and Career Center experience in NEU 2000. As well, more informal opportunities will be available, including attending local and regional neuroscientific meetings and seminars.

- *Indicate whether the institution performed a needs assessment/market analysis to determine a need for the program. If so, briefly describe the results of those findings. If completed, submit the full analysis as an appendix item.*

In 2012, Hanover Research performed a needs assessment for the demand of a bachelor's degree in Neuroscience at Wright State University (see Appendix 5). Their findings suggest that there is an increasing trend in Neuroscience degree completions, in Ohio and nationally. Labor statistics further support these findings, indicating a national employment projection that favors growth in employment opportunities for students with Neuroscience degrees. As well, the report indicates that Wright State's academic and research facilities are comparable to similarly sized peer institutions that currently offer undergraduate neuroscience programs. However, an undergraduate neuroscience bachelor's degree program does not currently exist within a 50-mile radius, thus, allowing Wright State University to fill a need in the local area.

- *Indicate whether the institution consulted with advisory groups, business and industry, or other experts in the development of the proposed program. If so, briefly describe the involvement of these groups in the development of the program.*

The Department of Neuroscience, Cell Biology, and Physiology developed an interdisciplinary Advisory Board comprised of faculty across the College of Science and Mathematics to aid in the development of the curriculum and identification of appropriate programmatic assessments. The Advisory Board met at least once a semester to discuss the above issues.

- *Indicate whether the proposed program was developed to align with the standards of a specialized or programmatic accreditation agency. If so, indicate whether the institution plans to pursue programmatic/specialized accreditation for the proposed program and provide a timeline for achieving such accreditation. If the program is already accredited, indicate the date that accreditation was achieved and provide information on the next required review.*

An accreditation agency does not currently exist for undergraduate neuroscience education. However, if one is developed in the future, we will assess whether to seek accreditation at that time.

4.3 Collaboration with other Ohio institutions

- *Indicate whether any USO institutions within a thirty-mile radius of your institution offers the proposed program. If so, list the institutions that offer the proposed program and provide a rationale for offering an additional program at this site.*

- *Indicate whether the proposed program was developed in collaboration with another institution in Ohio. If so, briefly describe the involvement of each institution in the development of this request and the delivery of the program.*

Not Applicable

SECTION 5: STUDENT SERVICES

5.1 Admissions policies and procedures

- *Describe the admissions requirements for the program. In your response, highlight any differences between the admission requirements for the program and for the institution as a whole.*

  Students Directly Admitted from High School (Direct Admits). Requirements for direct admission into the Neuroscience Bachelor of Science degree program are in alignment with the Wright State University College of Science and Mathematics criteria, which can be found at https://science-mathc.wright.edu/advising/admissions. These criteria include:

  - Have a high school grade point average ≥ 3.00
  - ACT Math score ≥ 22 or SAT Math score ≥ 520
  - ACT English score ≥ 23 or SAT English score ≥ 530

  Students Not Directly Admitted from High School (Non-Direct Admits). Students who intend to enter into the Neuroscience Bachelor of Science degree program but do not meet the criteria to be directly admitted will begin in University College. Once the student has satisfied the following criteria, they can be admitted into the Neuroscience Bachelor of Science degree program:

  - Earned a grade of "C" or higher in all of the following courses: SM 1010, NEU 1000, BIO 1120, BIO 1120L, CHM 1210, and CHM 1210L.
  - Completion of at least 15 semester hours with a minimum cumulative GPA of 2.8.

  Current students at Wright State University who are interested in adding or changing their major can also be admitted into the Neuroscience Bachelor of Science degree program by meeting the above criteria.

  Transfer Students. Students interested in pursuing the Neuroscience Bachelor of Science degree can be admitted into the program by meeting the same criteria as non-direct admit students:

  - Earned a grade of "C" or higher in all of the following courses: SM 1010, NEU 1000, BIO 1120, BIO 1120L, CHM 1210, and CHM 1210L.
  - Completion of at least 15 semester hours with a minimum cumulative GPA of 2.8.

- *Describe the transfer credit policies for the proposed program, including the use of credit transfer review committees and the maximum number of hours that can be transferred into the program. In your response, specifically address the credit that may be transferred*

  - *according to the Board of Regents' Transfer Assurance Guide (TAG) and Career Technical Credit Tranfer (CT^2) initiatives; and*
  - *other types of transfer credit awarded toward major program requirements (e.g., AP, life experience, CLEP, portfolio, etc.).*

  The evaluation of transfer credit from public Ohio universities follows the policies of Ohio Department of Higher Education and are posted to the WSU Undergraduate Policies website: http://www.wright.edu/academic-affairs/policies/ohio-articulation-and-transfer-policy. These policies include accepting courses that have been approved as meeting the Ohio

Transfer Module (OTM), Transfer Assurance Guides (TAG), Career Technical Assurance Guides (CTAGs), and Military Transfer Assurance Guides (MTAGs). When possible these same policies are applied towards private and non-Ohio universities. WSU has also established course equivalencies, articulation agreements, and partnerships with several Ohio community colleges, which facilitates the transfer of credit from those institutions.

It is WSU undergraduate policy to only accept courses from institutions which are regionally accredited, such as by the Higher Learning Commission. Exceptions to this policy are the acceptance of the American Council on Education's (ACE) recommendations for military occupations and training. WSU policy is to accept all ACE recommendations for the military (http://www.wright.edu/academic-affairs/policies/transfer-credit-for-military-training-experience-and-coursework). Students who took courses from non-regionally accredited institutions which were not part of the military may follow the university Prior Learning Assessment (PLA) policy. There is a $150 fee to have material related to the learning outcomes of a specific WSU course assessed by exam or portfolio assessment. See http://www.wright.edu/academic-affairs/policies/prior-learning-assessment-policy-and-form.

International students must provide evidence that the course was taken at an institution approved by the country's ministry of education. International students must also meet the university's English language requirements. See http://www.wright.edu/international-education/international-students.

Transfer credits are evaluated in the following manner:

- If the course is a TAG, CTAG, MTAG, OTM, or a course equivalency has already been created, the course is automatically accepted as the WSU course equivalent.
- If the course is accepted but has not been previously equated as a WSU, specific course, the Registrar will post the credit as UNK (Unknown) and give students the credit hours from the transferring institution.

The Neuroscience, Cell Biology, and Physiology Department can request evaluation of those courses listed as UNK by sending the Transfer Evaluation Form and the student's syllabus to the department that houses the transferrable course at WSU. The possible outcomes of this assessment are: A course equivalency is approved; The course remains UNK; There is no WSU course equivalency but the course is approved as meeting the OTM.

The Neuroscience, Cell Biology, and Physiology Department has established a departmental Transfer Review Committee, consisting of the Undergraduate Neuroscience Program Director and an additional departmental faculty member (appointed by the chair of the department), in order to review transfer student's courses, and determine which neuroscience courses are eligible to be transferred. This will be done on a case-by-case basis. In the event that a course requested for transfer is deemed ineligible for transference to an existing course, then that course may be eligible to be applied as a neuroscience elective course.

The WSU coordinator for transfer credit is Dr. Carl Brun, Assistant Vice President for University Curricular Programs, 280A University Hall, 937-775-2155, carl.brun@wright.edu. He is consulted when there are any student or faculty questions about implementing the transfer policy. Students may appeal the course equivalency decisions. See http://www.wright.edu/academic-affairs/policies/prior-learning-assessment-policy-and-form.

A list of courses available for TAG or OTM credit is included below.

OTM – First Writing Course	BIO 1120	CHM 2110	PHY 1120
OTM – Second Writing Course	BIO 1150	CHM 2110L	PHY 1120L
OTM – Arts and Humanities	CHM 1210	CHM 2120	PHY 2400
MTH 2300	CHM 1210L	CHM 2120L	PHY 2400L
STT 2640	CHM 1220	PHY 1110	PHY 2410
PSY 1010	CHM 1220L	PHY 1110L	PHY 2410L

5.2 Student administrative services

- *Indicate whether the student administrative services (e.g., admissions, financial aid, registrar, etc.) currently available at the institution are adequate to support the program. If new or expanded services will be needed, describe the need and provide a timeline for acquiring/implementing such services.*

Wright State University has excellent administrative services for students that are housed within RaiderConnect: https://www.wright.edu/raider-connect. RaiderConnect serves as students' primary point of contact for enrollment, records, financial aid, and payment. The RaiderConnect website is frequently updated and expanded to continually improve information and services to students.

5.3 Student academic services

- *Indicate whether the student academic services (e.g., career services, counseling, tutoring, ADA, etc.) currently available at the institution are adequate to support the program. If new or expanded services will be needed, describe the need and provide a timeline for acquiring/implementing such services.*

Wright State University also has exemplary student academic services including:

Academic Success Centers provide opportunities to enhance and sustain academic success across multiple disciplines, including mathematics and writing: https://www.wright.edu/university-college/academic-help.

The Career Center provides many resources for students to explore majors and associated careers, build experience, and develop professional skills. These include assistance in writing resumes, practicing job interviews, networking opportunities, job fairs, and on-campus interviews with employers: https://www.wright.edu/career-center.

The office of Counseling and Wellness provides a wide range of therapeutic services ranging from mental health support to health promotion, and many others: http://www.wright.edu/counseling-and-wellness.

The Office of Disability Services is ranked as a national leader in accommodating students with disabilities, and assisting them as they transition into the professional world: https://www.wright.edu/disability-services.

SECTION 6: CURRICULUM

6.1 Introduction

- *Provide a brief description of the proposed program as it would appear in the institution's catalog.*

The Department of Neuroscience, Cell Biology, and Physiology offers a program leading to a Bachelor of Science (BS) degree in neuroscience. The curriculum offers students an in-depth foundation in neuroscience developed from the ground up by an interdisciplinary team of Wright State University faculty. This program uniquely emphasizes how prerequisite coursework from multiple fields of science relates to and can be applied to neuroscience, and is achieved via pedagogical best practices focused on engaging students in their learning, such that they are actively involved in understanding neuroscience concepts and ideas, and fostering scientific creativity and critical thinking.

The program's coursework focuses on foundational neuroscience topics related to cellular neuroscience, physiological neuroscience, and behavioral neuroscience. It is supplemented with training in fundamental neuroscience research techniques, as well as opportunities to work with neuroscience faculty members on cutting-edge research.

This program will aid in students being competitively prepared for careers in a variety of fields, including, but not limited to: scientific research, medicine, education, biotechnology, public policy, scientific writing, and law.

6.2 Program goals and objectives

- *Describe the goals and objectives of the proposed program. In your response, indicate how these are operationalized in the curriculum.*

The goals and objectives of the program are multifaceted.

1. The program will provide students with an in-depth neuroscience education and development of skills that will aid in their future careers. To that end, the neuroscience content knowledge is centered around the mastery of four program learning goals:

- Organization of the Nervous System – There is an expansive, yet repetitive, organization to the nervous system, which originates at a molecular, subcellular, level maintaining the functional role of neurons. Neurons at a cellular level are excitable cells with dynamic membrane properties capable of responding to various signals they receive. Neurons can then integrate, modulate and convey that information to other neurons. Those neurons, in a series or group, will process all of that information over a given period of time, and result in a behavioral response, if needed or desired.

- Cellular Neurophysiology – Neurons are cells that express dynamic and excitable membranes. It is the specialized receptors and channels of these excitable membranes that allow neurons to integrate various signals, and generate information, in the form of an electrical response, that can be conducted within neurons.

- Information Processing – Information is transferred between neurons and target organs by way of chemical signals, termed neurotransmitters that cause changes in the excitability of neuronal membranes. This chemical information is transformed into an electrical signal, which is impacted by the spatial and temporal origination of the chemical signal. Furthermore, the effectiveness of the chemical signal is plastic and is critical for regulating the flow of information within neural networks.

- Neural Networks and Behavior – Neurons do not reside in isolation. The average adult brain contains approximately 100 billion neurons with 100 trillion connections. Interestingly, these anatomically and functionally diverse neurons make a multitude of connections with each other in a relatively organized fashion. It is this connectivity of vast numbers of neural elements that serve as the link between structure and function, dictating our behavioral responses to various innocuous and traumatic stimuli.

  Furthermore, the program has been designed to emphasize the development of various core skills throughout the program, including:

- Independent learning
- Critically evaluating evidence (how to read critically, write scientifically, and how to conduct scholarly searches)
- Proficiency in a variety of laboratory research techniques (ex. Microscopy)
- Working collaboratively with colleagues/peers
- Communicate effectively (oral & written)
- Quantitative literacy
- Implement the scientific process
- Problem solve
- Research design competency (ability to apply logic and statistics)

2. Courses within the major will incorporate active learning pedagogies such as flipped classrooms and problem-based learning. Some of the core courses will also utilize simulations and experimentation to allow for experiential learning without having to master difficult technical skills. However, the laboratory courses will utilize authentic research to enhance interest, motivation, and incorporation of the principle of the technique with underlying neuroscience concepts. Each course was developed utilizing backwards design to make sure that set learning goals were being met.

3. The Neuroscience major will serve as a gateway for students interested in our Neuroscience and Physiology Master's degree program, allowing for a smooth transition into graduate education. A significant portion of our students' undergraduate education will place them in close proximity to neuroscience faculty within our department, either in the classroom or laboratory setting, allowing for early interest and engagement to be developed between undergraduate students and potential graduate faculty mentors. This may also foster

obsolescence of graduate lab rotations, resulting in enhanced productivity during students' graduate tenure. This, in turn, may make students more marketable for future career trajectories.

4. For students interested in health-related fields, the Neuroscience Program will allow for a variety of paths to be selected from. Due to the rigorous courses necessary to graduate with a bachelor's degree in Neuroscience, our students will be well prepared for entrance into and success in many health-related professional programs, from medical school to dental school.

6.3 Course offerings/descriptions

- *Complete the following table to indicate the courses that comprise the program. Please list courses in groups by type (e.g., major/core/technical, general education, elective) and indicate if they are new or existing courses.*

Course (name/number)	No. of credit hours (q/s)	Major/ Core/ Technical	General Education	Elective	OTM, TAG or CT^2 equivalent course	New/Existing Course
Element 1: Communication	6s		X		X	Existing
Element 2: Mathematics MTH 2240: Applied Calculus or MTH 2300: Calculus I	4s		X		X	Existing
Element 3: Global Traditions	6s		X		X	Existing
Element 4: Arts/Humanities	3s		X		X	Existing
Element 5: Social Sciences PSY 1010: Intro to Psychology (with lab) and another course	7s		X		X	Existing
Element 6: Natural Science SM 1010: Scientific Literacy for the 21st Century and BIO 1120: Cells and	8s		X		X	Existing

Genes (with lab)						
CHM 1210: General Chemistry 1 (with lab)	5s		X		X	Existing
CHM 1220: General Chemistry 2 (with lab)	5s		X		X	Existing
BIO 1150: Organisms and Ecosystems (with lab)	4s	X			X	Existing
BMB 4210: Biochemistry and Molecular Biology 1	3s	X				Existing
BMB 4230: Biochemistry and Molecular Biology 2	3s	X				Existing
CHM 2110: Organic Chemistry 1 (with lab)	5s	X			X	Existing
CHM 2120: Organic Chemistry 2 (with lab)	5s	X			X	Existing
PHY 1110: Principles of Physics 1 (with lab and recitation) or PHY 2400: General Physics 1 (with lab and recitation)	5s	X			X	Existing
PHY 1120: Principles of Physcis 2 (with lab and recitation) or PHY 2410: General Physics 2 (with lab and recitation)	5s	X			X	Existing
STT 2640: Elementary Statistics	4s	X			X	Existing
PSY 3910: Behavioral Neuroscience 1	3s	X				Existing
PSY 3920: Behavioral Neuroscience 2	3s	X				Existing
NEU 1000: Introduction to Neuroscience Research	1s	X				New
NEU 2000: Introduction to the Undergraduate	1s	X				New

Neuroscience Program for Majors						
NEU 3100: How the Nervous System Works 1	4s	X				New
NEU 3200: How the Nervous System Works 2	4s	X				New
NEU 3400: Advanced Neuroscience Lab Techniques: Microscopy	4s	X				New
NEU 4030: Senior Capstone: Neuroscience Literature Research	1s	X				New
NEU 4040: Senior Capstone: Neuroscience Grant Development	1s	X				New
3000-4000 level Neuroscience Electives	16s	X				Existing
General Electives	4s				X	Existing

Provide a brief description of each course in the proposed program as it would appear in the course catalog. In your response, include the name and number of the course. ***Submit course syllabi as appendix items (see Appendix 6).***

NOTE: The Wright State University Course Catalog can be found at: http://catalog.wright.edu/content.php?catoid=2&navoid=88.

MTH 2300: Calculus I. Examines limits, the derivative, differentiation, applications of the derivative, antiderivatives, Riemann sums, the definite integral, and the fundamental theorem of calculus.

PSY 1010: Introduction to Psychology. History of psychology, research methods, biological foundations, perception, consciousness, learning, memory, cognition, language, development, motivation, emotion, social behavior, personality, health, psychopathology and therapy, and organizational psychology. Integrated Writing course.

BIO 1120: Cells and Genes. Introduction to basic concepts of biology. Topics include genetics and the molecular and cellular basis for the unity of life. Three hours lecture, two hours lab.

SM 1010: Scientific Literacy for the 21st Century. Collaborative skills-driven course designed to develop the critical thinking and reasoning skills associated with scientific inquiry. Work involves interdisciplinary units in the physical and natural sciences that focus on hypothesis generation, experimental design, data collection, objective evaluation of empirical evidence, and argumentation. Integrated Writing course.

CHM 1210: General Chemistry I. Structure and properties of atoms and molecules and their chemical behavior and reactivity.

CHM 1220: General Chemistry II. Properties of liquids, solids and solutions, phase changes, chemical kinetics and equilibrium, acid/base chemistry and its applications, thermodynamics and electrochemistry.

NEU 1000: Introduction to Neuroscience Research. Introduction to the primary neuroscience literature. Students will learn how to search for articles and begin to analyze the different components of them.

NEU 2000: Introduction to the Undergraduate Neuroscience Program for Majors. Undergraduate neuroscience majors will learn about various resources and expectations that will facilitate their academic and future career success. Students will also be introduced to the neuroscience community at Wright State University.

NEU 3100: How the Nervous System Works I. Provides an in-depth exposure to how the nervous system works at the single neuron and simple circuit level. Topics include passive and active membrane properties, synaptic function, and information processing.

NEU 3200: How the Nervous System Works II. Provides an in-depth exposure to how the nervous system works among and between neural networks to elicit behavioral responses to external and internal stimuli. Topics will focus on three main categories: 1) how the brain interacts with the world, 2) higher levels of interaction, and 3) motivated behaviors.

NEU 3400: Advanced Neuroscience Lab Techniques: Microscopy. Students will learn about microscopes, how they work, techniques and skills necessary for preparing tissue for imaging, and practice taking optimal images for visualization and quantification.

NEU 4030: Senior Capstone: Neuroscience Literature Research. Senior Neuroscience majors will select a neuroscience topic, critically analyze the scientific literature associated with it, and write a scientific review article on the study of that topic.

NEU 4040: Senior Capstone: Neuroscience Grant Development. Senior neuroscience majors will develop a grant proposal on a neuroscience topic that could push the field forward. Students will prepare a written grant proposal and deliver an oral presentation summarizing their proposal.

BIO 1150: Organisms and Ecosystems. Introduction to basic concepts of biology. Topics include evolution, ecology, and the diversity of life. Three hours lecture, two hours lab.

PHY 2400: General Physics I. Introductory survey of mechanics for science and engineering students. Uses of interpreting physical phenomena. Topics include vectors, kinematics, dynamics, energy, momentum, rotation, oscillation and thermodynamics.

PHY 2410: General Physics II. Introductory survey of electricity and magnetism. Uses calculus in interpreting physical phenomena. Topics include electric field and potential, currents, DC circuits, magnetic fields, Faraday's law, and optics.

CHM 2110: Organic Chemistry I. Principles, theories, and applications of the chemistry of carbon compounds.

CHM 2120: Organic Chemistry II. Principles, theories, and applications of the chemistry of carbon compounds.

BMB 4210: Biochemistry and Molecular Biology I. Basic principles of biochemistry and molecular biology of the cells at the molecular level. Emphasizes experimental procedures used to generate current understanding of the biochemistry of proteins, enzymes and nucleic acids.

BMB 4230: Biochemistry and Molecular Biology II. Biosynthetic and biodegradative metabolism with emphasis on the molecular events leading to the regulation of metabolism. Covers the chemistry which enables cells to generate energy for life-sustaining processes and the role of biological membranes in this process. Includes control and regulation of metabolic processes at the molecular level.

STT 2640: Elementary Statistics. Numerical and graphical methods for finding and summarizing important features of data. Principles of designing experiments for collecting data. Introduction to probability. Confidence intervals and hypothesis testing introduction. Applications to means, proportions, two-sample comparisons, contingency tables, linear regression, and analysis of variance. Use of statistical computing package to apply methods and illustrate concepts.

PSY 3910: Behavioral Neuroscience I. Physiological mechanisms of behavior. Basic neuroanatomy and neurophysiology, neuronal development and function, psychopathology, reproduction, learning, sleep, and stress.

PSY 3920: Behavioral Neuroscience II. Learning and memory, reinforcement systems, ingestive behavior, sensory and motor systems, psychopharmacology, and addictive processes.

6.4 Program sequence

Provide the intended/ideal sequence to complete the program in the table below. An example is provided. Add additional time periods as needed.

Time period	Curriculum component	Time period	Curriculum component
Year 1 *Fall Semester*	Courses/Activities	*Year 1* *Spring Semester*	Courses/Activities
Year 1 *Fall Semester*	*PSY 1010: Intro to Psychology*	*Year 1* *Spring Semester*	MTH 2240: Applied Calculus
Year 1 *Fall Semester*	*PSY 1010L: Intro to Psychology Laboratory*	*Year 1* *Spring Semester*	CHM 1220: Gen Chem II
Year 1 *Fall Semester*	*BIO 1120: Cells and Genes*	*Year 1* *Spring Semester*	CHM 1220L: Gen Chem II Laboratory
Year 1 *Fall Semester*	*BIO 1120L: Cells and Genes Laboratory*	*Year 1* *Spring Semester*	ENG 1100: Academic Writing and Reading
Year 1	CHM 1210: Gen Chem I	*Year 1*	BIO 1150: Organisms and

Fall Semester		*Spring Semester*	Ecosystems
Year 1 *Fall Semester*	CHM 1210L: Gen Chem I Laboratory	*Year 1* *Spring Semester*	BIO 1150L: Organisms and Ecosystems Laboratory
Year 1 *Fall Semester*	NEU 1000: Intro to Neuroscience Research	*Year 1* *Spring Semester*	
Time period	Curriculum component	Time period	Curriculum component
Year 2 *Fall Semester*	Courses/Activities	*Year 2* *Spring Semester*	Courses/Activities
Year 2 *Fall Semester*	PSY 3910: Behavioral Neuroscience I	*Year 2* *Spring Semester*	PSY 3920: Behavioral Neuroscience II
Year 2 *Fall Semester*	SM1010: Scientific Literacy for the 21st Century	*Year 2* *Spring Semester*	PHY 1120: Princ of Physics II
Year 2 *Fall Semester*	PHY 1110: Princ of Physics I	*Year 2* *Spring Semester*	PHY 1120L: Princ of Physics II Laboratory
Year 2 *Fall Semester*	PHY 1110L: Princ of Physics I Laboratory	*Year 2* *Spring Semester*	PHY 1120R: Princ of Physics II Recitation
Year 2 *Fall Semester*	PHY 1110R: Princ of Physics I Recitation	*Year 2* *Spring Semester*	EC 2900: Global Economic, Business, and Social Issues
Year 2 *Fall Semester*	HST 1200: The West and the World since 1500	*Year 2* *Spring Semester*	CST 2310: Comp Lit: Non-Western Literatures
Year 2 *Fall Semester*	NEU 2000: Introduction to the Undergrad Neurosci Program for Majors		
Time period	Curriculum component	Time period	Curriculum component
Year 3 *Fall Semester*	Courses/Activities	*Year 3* *Spring Semester*	Courses/Activities
Year 3 *Fall Semester*	NEU 3100: How the Nerv System Works I	*Year 3* *Spring Semester*	NEU 3200: How the Nerv System Works II
Year 3 *Fall Semester*	CHM 2110: Organic Chem I	*Year 3* *Spring Semester*	NEU 3400: Adv Neuroscience Lab Tech: Microscopy
Year 3 *Fall Semester*	CHM 2110L: Organic Chem I Laboratory	*Year 3* *Spring Semester*	CHM 2120: Organic Chem II
Year 3 *Fall Semester*	STT 2640: Elementary Statistics	*Year 3* *Spring Semester*	CHM 2120L: Organic Chem II Laboratory
Year 3 *Fall Semester*	ENG 2130: Research and Writing Argumentation	*Year 3* *Spring Semester*	General Elective
Time period	Curriculum component	Time period	Curriculum component
Year 4 *Fall Semester*	Courses/Activities	*Year 4* *Spring Semester*	Courses/Activities
Year 4 *Fall Semester*	SOC 2000: Intro to Sociology	*Year 4* *Spring Semester*	NEU 4040: Senior Capstone: Neuro Grant Development
Year 4 *Fall Semester*	BMB 4210: Biochem and Molec Biology I	*Year 4* *Spring Semester*	BMB 4230: Biochem and Molec Biology II
Year 4 *Fall Semester*	NEU 4030: Senior Capstone: Neuro Literature Research	*Year 4* *Spring Semester*	Neuroscience Elective
Year 4 *Fall Semester*	Neuroscience Elective	*Year 4* *Spring Semester*	Neuroscience Elective

Year 4 *Fall Semester*	Neuroscience Elective	*Year 4* *Spring Semester*	General Elective

6.5 Alternative delivery options (please check all that apply):

☐ More than 50% of the program will be offered using a fully online delivery model
☐ More than 50% of the program will be offered using a hybrid/blended delivery model
☐ More than 50% of the program will be offered using a flexible or accelerated delivery model

For the purposes of this document, the following definitions are used:

- *an **online course** is one in which most (80+%) of the content is delivered online, typically without face-to-face meetings;*
- *a **hybrid/blended course** is one that blends online and face-to-face delivery, with substantial content delivered online;*
- *a **flexible or accelerated program** includes courses that do not meet during the institution's regular academic term as well as courses that meet during the regular academic term but are offered in a substantially different manner than a fixed number of meeting times per week for all the weeks of the term.*

6.5 Off-site program components (please check all that apply):

☐ Co-op/Internship/Externship
☐ Field Placement
☐ Student Teaching
☐ Clinical Practicum
☐ Other

SECTION 7: ASSESSMENT AND EVALUATION

7.1 Program assessment

- *Describe the policies and procedures in place to assess and evaluate the proposed program. In your response, include the following:*

  - *Name of the unit/position responsible for directing assessment efforts;*
  - *Description of any committees or groups that assist the unit;*
  - *Description of the measurements used;*
  - *Frequency of data collection;*
  - *Frequency of data sharing; and*
  - *How the results are used to inform the institution and the program.*

Assessment Overview

The program director, Pat Sonner, will oversee the acquisition of assessment of learning data, which will occur in each course. The courses are offered either yearly or every semester. These data will be presented yearly to an interdisciplinary advisory board, which will make recommendations for continuous improvement. A summary of the data and the recommendations of the board will be submitted yearly to the College and the University Office of Academic Affairs, which oversee assessment.

Modified segments of the Student Assessment of Learning Gains (SALG) will be used to monitor students' sense of their own learning in each course.

Rubrics based on the PULSE rubrics for Vision and Change, but applied to the core concepts and key practices of the neuroscience program, will be used to assess that program goals are being met. Exam questions and assignments within each course will be designated for program assessment and *maintained across years and faculty*.

Additional details about program assessment.

Key assessments will be applied at three time points in the program of study:

Beginning—in NEU1000, Introduction to Neuroscience Research, students write a Research Proposal. A rubric will be applied which assesses their ability to critically evaluate evidence, apply the scientific process, write clearly, and communicate effectively , and an "A" in the assignment will be awarded to students who achieve a level of at least 3 out of 4 on the rubric. Students will receive extensive *input from the instructor* to improve their product over the duration of the course.

Middle—in NEU3200, How the Nervous System Works II, students work together on a Research Project that culminates in a powerpoint presentation on a topic of their choosing in neuroscience. They are expected to synthesize information from across multiple areas of inquiry, and to suggest directions or remaining questions for the field. The same rubric as described above will be applied, and an "A" in the assignment will be awarded to students who achieve a level 3 out of 4 on the rubric. Students will receive only modest input from faculty, and will rely primarily on *feedback from their peers* on their topic ideas and early drafts of their presentations.

End—in NEU4000 level capstone courses, students write a Research Proposal based on an extensive literature search or an independent undergraduate research experience. The same rubric will be applied, and an "A" will be awarded to those who achieve 4 of 4 on the rubric. Students will *independently develop and execute* the research proposal.

Exams.

Exam questions will be designated for assessment, five questions on the final, for the two core courses, How the Nervous System Works I and II. Following the program learning objectives, these questions will address:

How the Nervous System Works I—one question on organization of the nervous system, four questions on cellular neurophysiology concepts.

How the Nervous System Works II—one question on organization of the nervous system, two questions on information processing, and two questions on networks and behavior.

Practices.

A rubric will be created that assesses the key practices that form learning objectives for the program. This rubric will be applied to an activity or laboratory assignment in each course in the core sequence.

7.2 Measuring student success

- *Describe the policies and procedures in place to measure individual student success in the proposed program. In your response, include the following:*

    - *Name of the unit/position responsible for directing these efforts;*
    - *Description of any committees or groups that assist the unit;*
    - *Description of the measurements used;*
    - *Frequency of data collection;*
    - *Frequency of data sharing;*
    - *How the results are used to inform the student as they progress through the program; and*
    - *Initiatives used to track student success after program completion.*

The program director, Patrick Sonner, will track student retention and maintain statistics on number of students completing their degrees in 4 or 6 years, and the number of students who are put on probation. Data will be collected yearly, and shared with the College of Science and Mathematics office of Student Affairs and their director of Student Success. Data will also be shared with the interdisciplinary advisory board. The program will work with the student success team in the College of Science and Mathematics, the University Campus Completion Committee, and the Education Advisory Board consultants to address any issues with retention. The goal will be to determine what the barriers to success are within the university, the college, and the program.

Prior to graduation a survey will be administered to get up to date contact information. Within a year of graduation, and each subsequent year, graduates will be contacted to find out whether they are employed, in a professional or graduate program, and how we can assist with career goals. A facebook page and other current social media platforms will be established for each entering class for additional communication during and after the students' time at Wright State.

SECTION 8: FACULTY

8.1 Faculty appointment policies

- *Describe the faculty designations available (e.g., professor, associate professor, adjunct, instructor, clinical, etc.) for the proposed program's faculty. In your response, define/describe the differences between the designations.*

Faculty in the Department of Neuroscience, Cell Biology and Physiology (NCBP) fall within various categories. Faculty can be tenure-eligible or tenured (TET), encompassing the ranks of assistant

professor, associate professor, or professor. Faculty can also be non-tenure eligible (NTE), encompassing the ranks of instructor, lecturer, or senior lecturer. There are also faculty whom are continuing faculty.

Neuroscience, Cell Biology and Physiology is a "matrix department" housed under both the College of Science and Mathematics (CoSM) and Boonshoft School of Medicine (BSOM). Faculty with appointments in the CoSM are TET or NTE, and are members of the American Association of University Professors (AAUP) and belong to the Collective Bargaining Unit (CBA). Faculty whose appointments are solely in the BSOM are not tenure eligible nor are they members of the AAUP. They are considered continuing faculty.

Faculty responsibilities fall within the academic realms of teaching, scholarship, and service. Most TET faculty and continuing faculty have independent research labs and are involved with mentoring students in their laboratories, as well as teaching in courses aligned with their expertise. NTE faculty do not maintain a research laboratory, however, their scholarship contributes to advancements in course design, pedagogy, and curricula development.

Differences between the TET and NTE designations can be found in the TET CBA (http://www.wright.edu/administration/aaup/2014-2017-TET-CBA.pdf)and the NTE CBA (http://www.wright.edu/administration/aaup/2014-2017-NTE-CBA.pdf), respectively.

- *Describe the credentialing requirements for faculty who will be teaching in the program (e.g., degree requirements, special certifications or licenses, experience, etc.).*

All faculty in the Department of Neuroscience, Cell Biology and Physiology teaching in the undergraduate neuroscience program will have a degree of M.S. or Ph.D. in their respective fields within the broad category of neuroscience.

- *Describe the institution's load/overload policy for faculty teaching in the proposed program.*

Teaching assignments in the Department of Neuroscience, Cell Biology and Physiology are dictated by the department chair and abide by the policies addressed in the CBA (http://www.wright.edu/administration/aaup/signed-nte-workload-mou.pdf). For NTE faculty who teach solely or primarily 3 credit courses, the load will be 7 courses per year. Whereas NTE faculty who teach solely or primarily 4 credit courses, the load will be 6 courses per year. Faculty members who accept substantial service assignments (including administrative responsibilities) from the University may receive teaching load reductions, as agreed to by the faculty member and the University. As such, the undergraduate neuroscience program director has a half-load teaching assignment (3x 4 credit courses per year) due to administrative responsibilities. Teaching obligations of TET faculty are typically less than those of NTE faculty and are based, in part, on TET rank as well as other faculty responsibilities. The Department of Neuroscience, Cell Biology, and Physiology Bylaws discuss criteria related to teaching for TET faculty (https://www.wright.edu/curriculum-and-instruction/college-and-department-bylaws/neuroscience-cell-biology-physiology).

- *Indicate whether the institution will need to identify additional faculty to begin the proposed program. If additional faculty members are needed, describe the appointment process and provide a timeline for hiring such individuals.*

The NCBP department has recently (2016) hired Dr. Eric Bennett, a TET faculty member and the new chair for the Department of Neuroscience, Cell Biology, and Physiology. Currently, there is an on-going continuing faculty search in our department for an appointment in the BSOM. The department also has approval for another TET faculty hire in 2017-2018. These new NCBP faculty members will be available to aid in the program.

8.2 Program faculty

- *Provide the number of existing faculty members available to teach in the proposed program.*

  Full-time: 21
  Less than full-time: 0

- *Provide an estimate of the number of faculty members to be added during the first two years of program operation.*

  Full-time: 2; 2 new research faculty hires within the Department of Neuroscience, Cell Biology and Physiology will be available to aid in the program.
  Less than full-time: 0

8.3 Expectations for professional development/scholarship

- *Describe the institution's general expectations for professional development/scholarship activities by the proposed program's faculty. In your response, describe any differences in the expectations for tenure-track vs. non tenure-track faculty and for full-time vs. part-time faculty. Indicate the financial support provided for such activities.* ***Include a faculty handbook outlining the expectations and documenting support as an appendix item.***

The complete WSU Faculty Handbook can be found at https://www.wright.edu/faculty-senate/faculty-handbook.

The Bylaws of the Department of Neuroscience, Cell Biology and Physiology clearly specify the criteria that is required in order to achieve promotion and tenure for TET faculty. These bylaws can be found at https://www.wright.edu/curriculum-and-instruction/college-and-department-bylaws/neuroscience-cell-biology-physiology. In short, there are two tracks for each level of tenure, the research track and the education track. The scholarship, teaching, and service criteria for promotion from assistant professor to associate professor research track can be found in sections 5.5.1.1 – 5.5.1.3, while criteria for promotion to associate professor education track can be found in sections 5.5.2.1 – 5.5.2.3. The criteria for promotion from associate professor to full professor research track can be found in sections 5.6.1.1 – 5.6.1.3, while criteria for promotion from associate professor to full professor education track can be found in sections 5.6.2.1 – 5.6.2.3. Typically, the research track faculty have a higher research load and a smaller teaching load, while the education track faculty have a smaller research load and a higher teaching load. However, both tracks still have expectations for publishing research, obtaining grants, and teaching. But, the relative weights towards these activities varies dependent upon the faculty member's track. For example, research track faculty have activities weighted in scholarship, teaching, and service set at 45-75%, 20-40%, and 5-15%, respectively. Education track faculty have activities weighted in scholarship, teaching, and service set at 35-60%, 35-50%, and 5-15%, respectively.

The criteria to achieve promotion for NTE faculty (Instructor, Lecturer, Senior Lecturer) can be found in Article 13 of the NTE CBA: http://www.wright.edu/administration/aaup/2014-2017-NTE-CBA.pdf.

The Department of Neuroscience, Cell Biology and Physiology does provide financial support for professional development and scholarly activities in the way of $990/year for TET faculty and $500/year for NTE faculty.

8.4 Faculty matrix

- *Complete a faculty matrix for the proposed program. A faculty member must be identified for each course that is a required component of the curriculum. If a faculty member has not yet been identified for a course, indicate that as an "open position" and describe the necessary qualifications in the matrix (as shown in the example below).* ***A copy of each faculty member's CV must be included as an appendix item (see Appendix 4).***

Name of Instructor	**Rank or Title**	**Full-Time or Part-Time**	**Degree Titles, Institution, Year** **Include the Discipline/Field as Listed on the Diploma**	**Years of Teaching Experience In the Discipline/ Field**	**Additional Expertise in the Discipline/ Field** **(e.g., licenses, certifications, if applicable)**	**Title of the Course(s) This Individual Will Teach in the Proposed Program** **Include the course prefix and number**	**Number of Courses this Individual will Teach Per Year at <u>All</u> Campus Locations**
Eric Bennett	Professor	*FT*	Ph.D., Biophysics, University of Rochester School of Medicine & Dentistry, 1992	21		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	1
Dragana Claflin	Associate Professor	FT	Ph.D. in Psychology, The University of Southern California, 1994	16 years classroom experience, 25 years of laboratory training/ mentoring		PSY 3910 PSY 3930	3
Adrian Corbett	Associate Professor	*FT*	Ph.D., Pharmacology, University of Miami (FL), 1984	30		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	2

Sherif Elbasiouny	Assistant Professor	*FT*	Ph.D., Biomedical Engineering (Rehabilitation Neuroscience), University of Alberta, AB, Canada, 2007	16		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	2
Kathy Engisch	Associate Professor	FT	Ph.D. Neural Science, Washington University (St. Louis), 1990	25		SM 1010 NEU 1000 NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	2
Dan Halm	Associate Professor	*FT*	Ph.D., Physiology & Biophysics, University of Iowa, 1981	26		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	4
Lynn Hartzler	Associate Professor	*FT*	Ph.D. in Biological Sciences, The University of California Irvine, 2005	18		BIO 3050 BIO 3050L	4
Michael Hennessy	Professor	FT				PSY 3910 PSY 3920	
Gale Kleven	Associate Professor	FT				PSY 3910	
J. Ashot Kozak	Associate Professor	*FT*	Ph.D., Biomedical Sciences, Mount Sinai School of Medicine C.U.N.Y, NY, NY, 1998	19		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	3
Michal Kraszpulski	Instructor	*FT*	Ph.D., Neuroscience, Medical University of Gdańsk, Poland, 1995	26		NEU 2000 NEU 4020 NEU 4030 NEU 4040 PSY 3910 PSY 3920 SM 1010	6

David Ladle	Associate Professor	*FT*	Ph.D., Zoology, University of Pittsburgh, 2002	20		NEU 3400 NEU 4020 NEU 4030 NEU 4040 NEU 4990	2
Debra Mayes	Assistant Professor	*FT*	Ph.D., Neurobiology and Developmental Sciences, University of Arkansas for Medical Sciences, 2006	16		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	2
Robert Putnam	Professor	*FT*	Ph.D., Biology, University of California, Los Angeles, CA, 1978	34		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	4
Mark Rich	Professor	*FT*	M.D., Ph.D., Washington University School of Medicine, 1989	11		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	2
Nick Ritucci	Lecturer	*FT*	Ph.D., Biomedical Sciences, Wright State University, 1997	14		ANT 3100 ANT 3200	10
Patricia Schiml	Lecturer	FT	Ph.D. in Psychobiology, The University of California at Davis, 1996	24		PSY 3910 PSY 3930	7
Bridget Severt	Lecturer	*FT*	M.S., Human Anatomy, Wright State University, 2014	2		ANT 3100 ANT 3200	9
Patrick Sonner	Instructor	FT	Ph.D. in Biomedical Sciences, Wright State University, 2007	5		NEU 1000 NEU 2000 NEU 3100 NEU 3200 NEU 3400 NEU 4020 NEU 4030	≥3

						NEU 4040 SM 1010	
Keiichiro Susuki	Assistant Professor	*FT*	M.D., University School of Medicine, Yokohama, Japan and Ph.D., Neuroimmunology, Yokohama City University, Yokohama, Japan	15		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	1
Christopher Wyatt	Associate Professor	*FT*	Ph.D. Pharmacology, University of Leeds, 1994	10		NEU 2000 NEU 4020 NEU 4030 NEU 4040 NEU 4990	7

SECTION 9: LIBRARY RESOURCES AND INFORMATION LITERACY

9.1 Library resources

- *Describe the involvement of a professional librarian in the planning for the program (e.g., determining adequacy of current resources, working with faculty to determine the need for additional resources, setting the budget for additional library resources/services needed for the program).*

Librarians in Collection Services responded to the faculty request for access to a journal to support undergraduate education in neuroscience -- *JoVE Science Education: Essentials of Neuroscience* – by subscribing to this journal beginning in 2016.

- *Describe the library resources in place to support the proposed program (e.g., print, digital, collections, consortia, memberships, etc.).*

The WSU Libraries are a member of the OhioLINK consortium. Through this membership the Libraries have access to an important array of electronic resources, as well as to 50 million books and other library materials housed in academic libraries and research institutions throughout the state. Several important digital collections support the graduate programs in Wright State's Neuroscience, Cell Biology, and Physiology department and also would serve to support the proposed undergraduate program. OhioLINK provides access to over 5,000 journal titles online, and thousands of electronic books, including content from such publishers as Elsevier, Springer, Wiley, Oxford, the American Chemical Society, and Sage. In addition, the WSU Libraries provide institution-wide access to relevant journals from the AAAS, Nature Publishing Group, the American Physiological Association, and others. The

Libraries integrate references from citation databases, such as PubMed, Web of Science, BIOSIS, and PsycInfo though the EBSCO link resolver.

Selected online journals/serials

- Annual Review of Neuroscience
- Comprehensive Physiology
- Journal of Visualized Experiments (JoVE) – Neuroscience
- JoVE Science Education: Essentials of Neuroscience
- Journal of Neuroscience
- Nature Neuroscience
- Nature Reviews Neuroscience
- Neuron
- Trends in Neurosciences

Print books from major publishers in the sciences and biomedicine are supplied by an approval plan, which is supplemented by selections made by a collection management librarian. Faculty, students, and staff may request new books and subscriptions. Interlibrary loan services are provided when materials for research or teaching are not available in the Libraries' collections or through OhioLINK.

- *Describe any additional library resources that will be needed to support the request and provide a timeline for acquiring/implementing such services. Where possible, provide a list of the specific resources that the institution intends to acquire, the collaborative arrangements it intends to pursue, and monetary amounts the institution will dedicate to the library budget to support and maintain the proposed program.*

Because the WSU Libraries have successfully supported graduate level programs in Neuroscience, Cell Biology, and Physiology, as well as undergraduate programs in Biology, Chemistry, Psychology, and Physics, it is not anticipated that additional resources will be needed to support the proposed program.

9.2 Information literacy

- *Describe the institution's intent to incorporate library orientation and/or information literacy into the proposed program. In your response, describe any initiatives (e.g., seminars, workshops, orientations, etc.) that the institution uses or intends to use for faculty and students in the program.*

The WSU Libraries offer a series of 8 workshops, the Research Toolkit series, designed to address common problems students face in doing college-level library research. These workshops are offered multiple times throughout the academic year, and are open to all students. In addition, the subject librarian for the department of Neuroscience, Cell Biology, and Physiology is available to offer in-class, small group, or individual orientations and instruction in the use of library resources. Instruction may be targeted to use of specific databases, bibliographic management software, or other library resources.

SECTION 10: BUDGET, RESOURCES, AND FACILITIES

10.1 Resources and facilities

Describe additional resources (e.g., classrooms, laboratories, technology, etc.) that will be needed to support the proposed program and provide a timeline for acquiring/implementing such resources.

The space for the Advanced Neuroscience Lab Techniques: Microscopy course (NEU 3400) is available, but some of the necessary equipment and supplies for the laboratory course are not yet complete. As well, there are some supplies that are needed to fully equip the room to become a functional teaching laboratory. These supplies for the classroom are a one-time purchase and are listed in Year 1. They will be shared between our department and the Department of Biochemistry, as the room is a shared teaching lab used by both departments. Some up-front laboratory equipment and supplies related to the microscopy course are needed. As well, up-front laboratory equipment and supplies are needed for an electrophysiological techniques course. These expenses have been labeled under Year 1 Additional Technology or Equipment Needs. Furthermore, consumable supplies, chemicals and reagents will need to be purchased on a yearly basis as noted in "other expenses" in the table (see below). Marketing expenses are also added into "other expenses." Some of these costs for consumables will be offset by a student lab fee as noted in "other income," but as these chemicals and reagents are somewhat costly, the lab fees are only expected to recover a portion of the anticipated expense.

10.2 Budget/financial planning

Complete the table on the following page to describe the financial plan/budget for the first four years of program operation.

Fiscal Impact Statement for New Degree Programs

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
I. Projected Enrollment								
Total Head-count Full Time (a) (b)	25	44	62.05	78.4	94.55	103.5	108.9	111.5
Head-count Part Time								
Full Time Equivalent (FTE) Enrollment	25	44	62.05	78.4	94.55	103.5	108.9	111.5
II. Projected Program Income								
Total Full Time Terms	50	88	124.1	156.8	189.1	207	217.8	223
Main Campus UG I&G Fees per Term (c)	$4,365	$4,452.30	$4,541	$4,632	$4,724.82	$4,819	$4,916	$5,014
Total Tuition (Paid by Student or Sponsor)	$218,250	$391,802	$563,581	$726,325	$893,463	$997,598	$1,070,639	$1,118,125
SSI (Course Completion) (d)	$0	$12,862	$35,500	$67,424	$94,898	$120,906	$142,231	$157,923
Degrees Awarded				6.5	7.8	9.1	10.4	13
SSI (Degrees Awarded) (e)					$32,110	$70,642	$115,596	$134,862
Externally Funded Stipends								
Other Income (f)	$540	$1,080	$1,080	$1,620	$1,620	$1,620	$1,620	$1,620
Total Projected Program Income (Total Tuition, Total SSI, Lab Fees)	$218,790	$405,745	$600,161	$795,369	$1,022,091	$1,190,765	$1,330,086	$1,412,530
III. Program Expenses								
New Personnel (Full-time Instruction + benefits)	$71,201.43	$72,625.46	$74,077.97	$75,559.52	$77,070.71	$78,612.12	$80,184.36	$81,788.04
New Personnel (Part-time Non-Instruction) (g)	$3000	$3000	$3000	$3000	$9000	$9000	$9000	$9000
New Facilities/Buildings/Space Renovation (h)	$5,000							
Scholarship/Stipend Support	n/a							
Additional Library Resources	n/a							
Additional Technology or Equipment Needs (i)	$65,537				$50,000			
Other Expenses (j)	$8,820	$4,140	$4,140	$5,460	$5,460	$5,460	$5,460	$5,460
Total Projected Expense	$153,594.43	$79,765.46	$81,217.97	$84,019.52	$141,530.71	$93,072.12	$94,644.36	$96,248.04
Total Project Program Income minus Expense	$65,196	$325,979	$518,943	$711,349	$880,560	$1,097,693	$1,235,442	$1,316,282

Budget Narrative:

(Use narrative to provide additional information as needed based on responses above.)

(a) Estimated number of students based upon data obtained from Hanover Research of comparably sized university's growth of undergraduate Neuroscience programs (Appendix 5)

(b) The head count is the summation of all students in the program for all four years, estimated with CSRDE retention data from the Fall 2015 Student Fact Book (p. 73)
http://www.wright.edu/administration/institutionalresearch/student-fact-book

(c) I&G fees are adjusted annually by 2%

(d) Based on the 3yr. Avg. Course Completion FTE multiplied by the estimated Avg. SSI received per completed UG FTE. The estimated Avg. is $1864 based on FY17 SSI-projected

(e) SSI received per Bachelor Degree Awarded (based on FY17 SSI-projected) is estimated to be $14,820 (Subject Field: Biology; Subject Code (CIP): 26.1501 Neuroscience)

(f) Lab fees = $45/student. Anticipated students: Year 1 = 12; Year 2-3 = 24; Year 4-8 = 36

(g) The New Personnel (full-time instruction) is the salary + benefits for Dr. Patrick Sonner, the Director of the Neuroscience program **(*Hiring Date: 08/01/14).** The New Personnel (part-time instruction) is for 2 Learning Assistants for the How the Nervous System Works I and II courses during Year 1-4. We anticipate sufficient growth of the courses in the program that we will need a total of 7 Learning Assistants during Year 5-8. They will be paid at a rate of $10/hour and it was estimated they would be working approximately 10 hours per week, including training, meetings with the professor, and in-class work.

(h) This money is a one-time cost necessary to equip a room to serve as a teaching laboratory space. The space is being shared with the Biochemistry department, and the cost is being shared, as well.

(i) Cost of laboratory equipment **(*A variety of funding sources are being investigated to purchase this equipment).**

(j) It is estimated that each student will utilize $110 in supplies, chemicals and reagents in the laboratory courses. Year 1 = $1320 for lab supplies (12 students) and $7500 for marketing; Year 2-3 = $2640 for lab supplies (24 students) and $1500 for marketing; Year 4-8 = $3960 for lab supplies (36 students) and $1500 for marketing.

*** Bolded notes associated with an asterisk are for the Office of the Provost of Wright State University only. They are not relevant to the Wright State University Board of Trustees. Please remove from any documents forwarded to the Board.**