

Senate Bill 0809-20

UNIVERSITY SENATE

**UNIVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK**

Introduced by: Undergraduate Academic Council

Date: May 4, 2009

**Approved by CAS Academic Programs Committee, Maria Isabel Ayala, Chair (04/14/09)
Approved by CAS Dean's Office, Gregory Stevens and Edelgard Wulfert (04/15/09)**

New Undergraduate Minor in Neuroscience

This application proposes a new interdisciplinary undergraduate minor in Neuroscience in which students enroll in preexisting Psychology and Biology courses focusing on brain function and the neural mechanisms underlying behavior. This minor will be overseen by Dr. Christine Wagner, Psychology and Dr. Greg Lnenicka, Biology. This application contains the following items:

- Memo of approval from Dr. Kevin Williams, Chair of Psychology
- Memo of approval from Dr. Richard Zitomer, Chair of Biology
- Narrative Description of the Neuroscience Minor
- Course Action Form for new course APSY 490 *Topics in Neuroscience*
- Course Action Form for new course ABIO 490 *Topics in Neuroscience*
- Course Action Form for ABIO 341 to change prerequisites

Department of Psychology
College of Arts and Sciences



UNIVERSITY
AT ALBANY
State University of New York

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To: Dean Edelgard Wulfert, College of Arts and Sciences

From: Kevin Williams, Chair of Psychology

A handwritten signature in black ink, appearing to read "Kevin Williams".

Date: March 2, 2009

Re: Neuroscience Minor

I have reviewed the proposal for the interdisciplinary undergraduate minor in neuroscience, as well as the proposal for the new cross-listed course, APSY490/ABIO *Topics in Neuroscience*. These proposals have my approval.

The neuroscience minor will not require any additional resources for Psychology or CAS.



Professor Richard S. Zitomer

Chair, Department of Biological Sciences

To: Dean Edelgard Wulfert, College of Arts and Sciences

From: Richard S. Zitomer, Chair of Biological Sciences

Date: February 26, 2009

Subject: Neuroscience Minor

I have reviewed the proposal for the interdisciplinary undergraduate minor in neuroscience, as well as the proposal for a new course APSY490/ABIO490 *Topics in Neuroscience*. These proposals have my approval.

The minor is not expected to require additional resources for Biology. The minor does not require the Introductory Biology lab courses (ABIO121 and 123) which are now uncoupled from the lecture courses, and, therefore, will not place any additional pressure on CAS for the annual additional resources needed to cover these labs. The upper level Biology lecture courses can handle the substantial increased enrollment, well beyond that expected from this minor.

Proposed Neuroscience Minor

Neuroscience Faculty from the Biology, Psychology and Chemistry Departments propose an interdisciplinary MINOR in Neuroscience. This minor would be comprised primarily of courses already taught within Biology and Psychology and could be implemented quickly with minimal impact on departmental budgets. The Neuroscience minor would promote an interdisciplinary approach to learning that crosses traditional department lines.

Excitement for neuroscience among scientists, students and the public has been extremely high in recent years. Increasingly, neuroscience approaches are being integrated into everything from psychology to marketing to economics, with rapid discoveries being made at all levels of analysis from molecular biology through human behavior. Neuroscience has often been referred to as the “final frontier” of the life sciences: addressing profound questions of brain function central to the human experience; and seeking treatments for behavioral and neurological disorders that have a major impact on society. The excitement of this field attracts an increasing number of prospective undergraduates. Many high school seniors are looking for Neuroscience programs and in response numerous four-year colleges in the northeast have added a Neuroscience major. These include: Amherst, Bates, Bowdoin, Clark, Colgate, Hamilton, Ithaca, Middlebury, Skidmore, Smith, St. Lawrence, Union, Wellesley, Wesleyan and Williams. Despite the growth of Neuroscience programs at many private schools, undergraduate studies in Neuroscience are not well represented at the SUNY universities and colleges. None of the other university centers offers a Neuroscience major or minor, although Stony Brook University has a Neuroscience track within its Biology major. Also, it does not appear that any of the four-year SUNY colleges offer a Neuroscience major or minor. Thus, a Neuroscience minor would provide a point of distinction within the SUNY system and make the University at Albany unique, and possibly more attractive, to some students considering the SUNY system.

We are proposing a minor in order to obtain many of the benefits of a major without requiring significant associated costs, given the current funding climate. However, the minor may have some advantages on its own. Neuroscience draws from many other disciplines; the brain is studied at many levels and Neuroscientists vary greatly in their areas of expertise. A minor should be a good mechanism for introducing students with diverse backgrounds to Neuroscience. We expect that most Neuroscience minors would be Biology and Psychology Majors, but hope that it would also include majors from fields such as Chemistry, Anthropology, Physics and Mathematics. In addition, we expect that many pre-Health students with interests in neurological or mental disorders would choose this minor. Also, this minor may prepare students for graduate studies since many Neuroscience programs expect a strong grounding in one of the more traditional disciplines. In fact, we hope that some students in this program will choose UAlbany for graduate studies in Neuroscience.

Realistically, the minor only impacts the Biology and Psychology Departments. For Biology students, adding this minor will be very easy. Since most Biology students are receiving a BS, courses in the major and minor can be double counted. This means the students only have to take 3 courses outside their major: APSY101, APSY214 and Topics in Neuroscience. There will be some increase in enrollment for General Biology and Neurobiology. If we have 30 minors per year and some are Biology majors, these courses would have to absorb less than 30 students a year. The increase in enrollment for ABIO441 and ABIO439 should be in the single digits. Psychology students receive a BA so courses cannot be double counted. Thus, they would need to take the Biology courses plus some extra Psychology courses. This small increase in enrollment spread among a number of Psychology courses should be negligible.

Student Advising: Undergraduates participating in the Neuroscience minor would be advised by Dr. Greg Lnenicka (Biology) and Dr. Christine Wagner (Psychology). These faculty will also oversee the administration of the minor.

New Course: One new course is proposed (under separate application) within the Neuroscience minor. This is a 400 level course for 3 credits that will be cross-listed in Psychology and Biology. Minors will take this course in the fall of their senior year. This course will be team taught by 13 Neuroscience faculty from Biology, Psychology and Chemistry as an overload. The course will cover Neuroscience research represented at UAlbany and serve as a capstone course for Neuroscience minors, engaging students in original research literature and providing information about graduate education and careers in neuroscience. None of these functions is currently served at the University, and the combination of the minor and this new course will significantly enhance, not only the education of undergraduates, but also the research being conducted in the several Neuroscience laboratories.

Participating Faculty: Haijun Chen (Bio), Bruce Dudek (Psych), Cheryl Frye (Psych), Helmut Hirsch (Bio), Greg Lnenicka (Bio), Ewan McNay (Psych), Li Niu (Chemistry), Robert Rosellini (Psych), John Schmidt (Bio), Bruce Svare (Psych), Ben Szaro (Bio), Christine Wagner (Psych), Sho-Ya Wang (Bio)

Minor in Neuroscience – 21 credits

Required Courses (18 credits)

- APSY101 – Introduction to Psychology (3)
- ABIO120 – General Biology I (3)
- ABIO121 – General Biology II (3)
- APSY214 – Introduction to Biopsychology & Behavioral Neuroscience (3)
- ABIO341 – Neurobiology (3)
- APSY/ABIO 490 - Topics in Neuroscience (3)

Any one of the following (3 credits)

- APSY314 – Advanced Biopsychology & Behavioral Neuroscience (3)
- APSY387 – Behavior Genetics (3)
- APSY388 – Introduction to Psychopharmacology (3)
- ABIO441 – Molecular Neurobiology (3)
- ABIO439 – Ion Channels and Human Disease (3)

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|---|--|---|----------------------------------|
| University at Albany – State University of New York | | | |
| College of Arts and Sciences | | Course Action Form | |
| | | Proposal No. 09-034A | |
| Please mark all that apply: | | | |
| <input checked="" type="checkbox"/> | New Course | Revision of: <input type="checkbox"/> | Number <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | Cross-Listing w/BIO 490 | <input type="checkbox"/> | Title <input type="checkbox"/> |
| <input type="checkbox"/> | Shared-Resources Course | <input type="checkbox"/> | Credits <input type="checkbox"/> |
| <input type="checkbox"/> | Deactivate / Activate Course (boldface & underline as appropriate) | <input type="checkbox"/> | Other (specify): _____ |
| Department: <u>Psychology</u> | | To be effective (semester/year): <u>Fall 2010</u> | |
| Course Number | Current: _____ | New: <u>APSY 490</u> | Credits: <u>3</u> |
| Course Title: <u>Topics in Neuroscience</u> | | | |
| Course Description to appear in Bulletin: | | | |
| <p>This course is designed as the capstone course for the interdisciplinary Neuroscience Minor. It is expected that Minors will take this course in the fall of their senior year. This course will be team taught by Neuroscience faculty from Biology and Psychology and will cover current topics in neuroscience research, engaging students in original research literature and providing information about graduate education and careers in neuroscience. By permission of instructor.</p> | | | |
| Prerequisites statement to be appended to description in Bulletin: | | | |
| Permission of Instructor of Record | | | |
| If S/U is to be designated as the only grading system in the course, check here: | | | <input type="checkbox"/> |
| This course is (will be) cross listed with (i.e., CAS ###): | | | <u>ABIO490</u> |
| This course is (will be) a shared-resources course with (i.e., CAS ###): | | | _____ |
| Explanation of proposal: | | | |
| This course will serve as the capstone course for the newly proposed Neuroscience Minor (under separate application). This course will be team taught by neuroscience faculty from Biology and Psychology Departments. | | | |
| Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering: | | | |
| | | | |
| Chair of Proposing Department (TYPE NAME/SIGN) | | | Date |
| Kevin Williams | | | 3/2/09 |
| Approved by Chair(s) of Departments having cross-listed course(s) (PRINT NAME/SIGN) | | Dean of College (PRINT NAME/SIGN) | Date |
| Richard Zitomer | Date | Gregory Stevens/Edelgard Wulfert | Date |
| | 3/2/09 | | 4/15/09 |
| Chair of Academic Programs Committee (PRINT NAME/SIGN) | | Dean of Graduate (Undergraduate) Studies (PRINT NAME/SIGN) | |
| Maria Isabel Ayala | Date | | Date |
| | 4/14/09 | | |

| | | | |
|---|--|---|---|
| University at Albany – State University of New York | | | |
| College of Arts and Sciences | | Course Action Form | |
| | | Proposal No. 09-034B | |
| Please mark all that apply: | | | |
| <input checked="" type="checkbox"/> | New Course | Revision of: <input type="checkbox"/> | Number <input type="checkbox"/> Description <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | Cross-Listing w/PSY 490 | <input type="checkbox"/> | Title <input type="checkbox"/> Prerequisites <input type="checkbox"/> |
| <input type="checkbox"/> | Shared-Resources Course | <input type="checkbox"/> | Credits <input type="checkbox"/> |
| <input type="checkbox"/> | Deactivate / Activate Course (boldface & underline as appropriate) | <input type="checkbox"/> | Other (specify): _____ |
| Department: <u>Biology</u> | | To be effective (semester/year): <u>Fall 2010</u> | |
| Course Number | Current: _____ | New: <u>ABIO 490</u> | Credits: <u>3</u> |
| Course Title: <u>Topics in Neuroscience</u> | | | |
| Course Description to appear in Bulletin: | | | |
| <p>This course is designed as the capstone course for the interdisciplinary Neuroscience Minor. It is expected that Minors will take this course in the fall of their senior year. This course will be team taught by Neuroscience faculty from Biology and Psychology and will cover current topics in neuroscience research, engaging students in original research literature and providing information about graduate education and careers in neuroscience. By permission of instructor.</p> | | | |
| Prerequisites statement to be appended to description in Bulletin: | | | |
| Permission of Instructor of Record | | | |
| If S/U is to be designated as the only grading system in the course, check here: | | | <input type="checkbox"/> |
| This course is (will be) cross listed with (i.e., CAS ###): | | | <u>APSY490</u> |
| This course is (will be) a shared-resources course with (i.e., CAS ###): | | | _____ |
| Explanation of proposal: | | | |
| This course will serve as the capstone course for the newly proposed Neuroscience Minor (under separate application). This course will be team taught by neuroscience faculty from Biology and Psychology Departments. | | | |
| Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering: | | | |
| | | | |
| Chair of Proposing Department (TYPE NAME/SIGN) | | | Date |
| Richard Zitomer | | | 3/2/09 |
| Approved by Chair(s) of Departments having cross-listed course(s) (PRINT NAME/SIGN) | | Dean of College (PRINT NAME/SIGN) | Date |
| Kevin Williams | 3/2/09 | Gregory Stevens/Edelgard Wulfert | 4/15/09 |
| Chair of Academic Programs Committee (PRINT NAME/SIGN) | | Dean of Graduate (Undergraduate) Studies (PRINT NAME/SIGN) | Date |
| Maria Isabel Ayala | 4/14/09 | | |

University at Albany – State University of New York

College of Arts and Sciences

Course Action Form

Proposal No. 09-034C

Please mark all that apply:

New Course

Revision of: Number

Description

| | | | | | |
|---|--|---|--------------------------|---|---------------|
| <input type="checkbox"/> | Cross-Listing | <input type="checkbox"/> | Title | <input checked="" type="checkbox"/> | Prerequisites |
| <input type="checkbox"/> | Shared-Resources Course | <input type="checkbox"/> | Credits | | |
| <input type="checkbox"/> | Deactivate / Activate Course (boldface & underline as appropriate) | <input type="checkbox"/> | Other (specify): | _____ | |
| Department: <u>Biological Sciences</u> | | To be effective (semester/year): <u>Fall 2010</u> | | | |
| Course Number | Current: _____ | New: <u>A Bio 341</u> | Credits: <u>3</u> | | |
| Course Title: <u>Neurobiology</u> | | | | | |
| Course Description to appear in Bulletin: No Change | | | | | |
| Prerequisites statement to be appended to description in Bulletin: A Bio 121 | | | | | |
| If S/U is to be designated as the only grading system in the course, check here: | | | <input type="checkbox"/> | | |
| This course is (will be) cross listed with (i.e., CAS ###): | | | _____ | | |
| This course is (will be) a shared-resources course with (i.e., CAS ###): | | | _____ | | |
| Explanation of proposal: Bio 341 is a required course for the proposed Neuroscience Minor. I am dropping the prerequisite A Phy 108 to allow a broader range of students into this minor. This particularly applies to Psychology undergraduates who normally do not take physics. This will not require a substantial change in the course since I already provide some physics review material and I have allowed students to take the course without physics in the past. | | | | | |
| Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering: | | | | | |
| Chair of Proposing Department (TYPE NAME/SIGN) | | | | | Date |
| Richard Zitomer | | | | | 3/2/09 |
| Approved by Chair(s) of Departments having cross-listed course(s) (PRINT NAME/SIGN) | | | Date | Dean of College (PRINT NAME/SIGN) | |
| | | | | Gregory Stevens/Edelgard Wulfert | |
| | | | | 4/15/09 | |
| Chair of Academic Programs Committee (PRINT NAME/SIGN) | | | Date | Dean of Graduate (Undergraduate) Studies (PRINT NAME/SIGN) | |
| Maria Isabel Ayala | | | 4/14/09 | | |