TRANSMITTAL for UNDERGRADUATE PROGRAMS:
Changes or Proposals

I. INFORMATION:
1. Program Title: Neuroscience (B.S.)
2. Department(s): Psychology
3. College(s): CAS
4. Proposal prepared by: Travis Tubré  Date: 9/22/2015
5. Check all that apply
   - [✓] New program
   - [ ] Existing program
   - [ ] Change in course name
   - [ ] Change in number of credits
   - [ ] Change in major
   - [ ] Change in minor
   - [ ] Change in course content
   - [ ] Change in emphasis/option

6. Other Programs/Departments Consulted (Requires letters of comment from all Departments or Programs substantially affected):
   a. Biology
   b. Chemistry
   c. Math, CSIS
   d. Physics, History

7. Catalog year (and semester) of Implementation: Semester Fall Year 2016
8. Have all courses in this program been approved? Yes [ ] No [✓]

   If “No” which courses have not been approved? NSCI 111 is concurrently under review

9. Attach Request Narrative
   Include in narrative on attached pages a rationale for the requested changes or creation of program.
   Include clarification concerning any courses that have not yet been approved. If requesting a
   program change also include a listing of course array for both the current and proposed program.

10. UNIT APPROVALS: Requires signatures of all Department Chairs and Deans whose programs will be
    substantially affected by the changes or proposal. Signature lines for the affected Departments and
    Colleges (noted in “6” above), are on the addendum to this form. These signatures should be obtained
    prior to review by all other shared governance levels.

    Signature            Date
    Department Curriculum Committee Chair
    Department/Program Chair  9/22/15
    College Curriculum Committee Chair  9/23/15
    Dean of College
    University Curriculum Cmtt. Chair Alex Turner  10/05/15
    Academic Policy & Program Cmtt. Chair
    Faculty Senate Chair
    Provost / Vice Chancellor
    Chancellor

*NOTE: The master copy of this transmittal & accompanying documents must be filed in the Provost’s office upon
final approval. The Provost’s office will notify all appropriate administrative offices [Registrar, Dean(s), Department
Chair(s)] of approvals & necessary actions to implement changes.

Revised December 2012
### Signatures of Additional Department & Colleges Affected

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<tr>
<td>Department Chair</td>
<td>Maude Berglund</td>
<td>9/21/15</td>
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<tr>
<td>Department Chair</td>
<td>K. P. Pettigrew</td>
<td>9/21/15</td>
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TRANSMITTAL for UNDERGRADUATE PROGRAMS

September 2015 - Bachelor of Science in Neuroscience Proposal
Requested by the Department of Psychology in collaboration with the Departments of Biology and Chemistry

Rationale for Program Creation:

An undergraduate program in neuroscience is a natural expansion of the university’s strengths in psychology, biology, and chemistry. Initial conversations regarding shared strength in the areas of physiological psychology, neurobiology, and neurochemistry led to collaborative work among the departments and the submission of a Notice of Intent to Plan last semester. A market analysis conducted by Hanover Research in conjunction with the submission of the NOI supports our contention that pursuing the development of a B.S. in Neuroscience is warranted. Whether looking at student demand indicators, labor market demand indicators, or program comparisons, we seem well situated to offer a competitive program that will attract students, prepare students for graduate study and careers, and be distinctive in our area. As noted in the market analysis, “neuroscience is an emerging field with the potential for continued future growth.”

Under the proposal, the Department of Psychology will house and provide administrative support for the program, as well as share responsibility with the Department of Biology for teaching an introductory course, required courses, and elective courses in the area. Significant contributions from the Department of Chemistry will involve the teaching of required and elective courses. Required supporting courses and electives will also be drawn from the Departments of Mathematics, History and Philosophy, Physics, and Computer Science and Information Systems. As an important consideration, except for the introductory course (which is currently under consideration), all of the coursework for the new major already exists. The involved departments have all indicated their support. The three departments involved in the core of the program are all strong, award-winning departments that are highly committed to the program and have long track records of successful engagement with inquiry-based learning and undergraduate research. As noted in the support letters, each department is prepared to contribute relevant courses, has identified sufficient instructional capacity to effectively participate in the delivery of the program, and is committed, where appropriate, to sharing research facilities for program participation.

A comparative evaluation of similar programs indicates that UW-River Falls is well positioned to offer a comparable degree program in neuroscience. Currently, there is no undergraduate neuroscience program in the system. Our closest competitors in the area would be private school such as St. Thomas, where we could provide an affordable alternative that draws on our strength in science disciplines. The program should recruit new students, increase our profile among regional competitors, and provide important avenues to graduate study and careers for our students in such areas as research, medicine, healthcare, and education.

Based on their review of our NOI, UW System granted us an Entitlement to Plan for the program this summer. We are excited to pursue the program and request your support in approving it.
Relation to Institutional Mission, Strategic Plan, and Existing Program Array

Institutional Mission:

A B.S in Neuroscience connects directly to the mission at UW-River Falls in many ways. The program promotes the core value of our mission of academic excellence by offering integrated educational experiences through lab-based coursework, interdisciplinary content, and undergraduate research. Psychology, Biology, and Chemistry are highly productive contributors to UWRF goals to increase research opportunities for undergraduates. This program will provide additional opportunities for not only disciplinary, but also interdisciplinary activities of this nature. This program would be a distinctive, innovative collaboration – unique in the system and relatively rare in our region. We believe we are positioned to provide access to a high-quality, research-based neuroscience major at an affordable cost to students. By working collaboratively, and sharing resources, we can increase connection among our disciplines while recruiting new students and providing increased opportunity to those we currently serve.

Strategic Plan:

The Hanover Research study notes varied industries and job sectors where there is growth for neuroscience graduates. Specifically, because of their interdisciplinary training in a variety of STEM fields, neuroscience graduates are well positioned to enter graduate study in a variety of disciplines in science, education, and business. Similarly, at the undergraduate degree level, neuroscience graduates hold a diverse array of jobs working in laboratories, business organizations, health organizations, and educational institutions. UWRF’s current strategic plan emphasizes the preparation of students in STEM fields and professions. We feel strongly that the proposed program fits with those strategic goals. Again, based on our market analysis, the UW System granted us an Entitlement to Plan – the first granted in the UW system in the area of neuroscience.

Institutional Program Array:

The program is unique in that we already offer all but one of the courses in the curriculum. All participating departments have indicated their support, and the three departments most directly involved welcome the opportunity to work collaboratively on curriculum planning and instruction. The curriculum is presented below and was approved by all departments with either required or supporting coursework. The only course not currently offered, NSCI 111 – Introduction to Neuroscience, is currently under review and is being collaboratively developed by faculty from the Psychology and Biology departments.
Proposed Curriculum for Neuroscience Major – 54-55 credits

Core Courses - 34-35 Credits

Introductory course (4 credits)
NSCI* 111 Intro to Neuroscience (new course incorporating laboratory component)

Biology courses (13 credits)
Biology 240 Cellular and Molecular Biology (3 cr)
Biology 342 Anatomy and Physiology II (4 cr)
Biology 351 Epigenetics (3 cr)
Biology 356 Neurobiology (3 cr)

Chemistry courses (5-6 credits)
Chemistry 120 Introduction to General Chemistry (6 cr) or
Chemistry 121 General Chemistry I (5 cr) or
Chemistry 130 Introduction to Organic Chemistry (5 cr)

Psychology courses (12 credits)
Psychology 216 Research Methods (3 cr)
Psychology 310 Memory and Thinking (3 cr)
Psychology 350 Sensation and Perception (3 cr)
Psychology 355 Physiological Psychology (3 cr)

Electives – 20 credits
Biology 195 Freshman Research Experience
Biology 295 Lab Research Experience
Biology 305 Applications in Molecular Biology
Biology 324 Microbiology
Biology 341 Anatomy and Physiology I
Biology 345 Immunology
Biology 350 Genetics and Evolution
Biology 353 Histology
Biology 364 Developmental Biology
Biology 451 Molecular Biology
Biology 453 Virology
Biology 463 Animal Cell Culture
Biology 464 Stem Cells and Regenerative Medicine
Chemistry 122 General Chemistry II
Chemistry 231 Organic Chemistry I
Chemistry 232 Organic Chemistry II
Chemistry 233 Foundations of Organic Chemistry
Chemistry 236/237 Organic Chemistry Labs I & II
Chemistry 240 Principles of General Chemistry
Chemistry 250 Foundations of Analytical Chemistry
Chemistry 355 Separation Science Lab
Chemistry 360 Foundations of Biochemistry or
Chemistry 361 and 362 Biochemistry I & II
Chemistry 366 Biochemistry Lab
Chemistry 461 Pharmacology
Computer Science 239 Introduction to Data Science
Computer Science 334 Data Visualization
Computer Science 373 Intro to Bioinformatics
Computer Science 452 Applied Machine Learning
Physics 121/122 or 131/132 Algebra or Calculus-based Physics I and II
Psychology 269 Health Psychology
Psychology 280 Drugs and the Nervous System
Psychology 305 Learning and Motivation
Psychology 315 Psychological Meas & Evaluation
Psychology 316 Advanced Research Methods
Psychology 325 Abnormal Psychology
Psychology 335 Dev Psych: Child & Adolescent
Psychology 336 Dev Psych: Adult & Aging
Psychology 340 Animal Behavior
Psychology 375 Psychology of Human Sexuality

Required supporting courses (15-16 credits) – These do not count as electives in the major
Biology 101 Biology Concepts (3 cr) and Psychology 101 General Psychology (3 cr)
Math 147 (3 cr) or 149 or Math 166 (4 cr)
Math 231 Biostatistics or Psychology 201 Behavioral Statistics (3 cr)
Philosophy 220 Bioethics (3 cr)
Clarification of Courses Not Yet Approved

The only course that is not already approved is Introduction to Neuroscience (NSCI 111). We have requested the creation of a designator "NSCI" to better reflect the interdisciplinary nature of the course. This course introduces students to the science behind our current understanding of the brain and nervous system, from the level of cell function to the level of organismal behavior and perception. Students will also engage in laboratory techniques prevalent in the neurosciences to gain an appreciation and understanding of the physiological, anatomical, pharmacological and evolutionary concepts in the field. The course is being collaborative developed and could be taught by faculty from either the Psychology Department or the Biology Department or team taught by faculty from both departments. The learning objectives of the course include providing students with an appreciation for and a basic understanding of:

- the process of science
- basic concepts and principles in neuroscience
- lab techniques used to study neuroscience
- concepts of evolution and genetics in neuroscience
- the scientific basis of cognition
- analysis of scientific data.
September 21, 2015

Dr. Travis Tubre  
Chair, Psychology Department 
University of Wisconsin-River Falls

Dear Travis,

The Biology Department met at 9:00 am on Monday, September 21 for the purpose of voting on approval of the proposed curriculum of the Neuroscience major, and also for the purpose of voting on approval of NSCI 111, Introduction to Neuroscience.

The motions were as follows:

"The Biology Department approves of the proposed Neuroscience major and curriculum, contingent on the development of a mechanism for formal input via the establishment of an advisory committee with representatives including but not limited to Biology faculty."

"The Biology Department approves of the course proposal for NSCI 111, Introduction to Neuroscience, including the use of the NSCI course designator."

Both motions passed unanimously. Our department is in full support of the Neuroscience major and will provide staffing, facilities, and resources for NSCI 111 along with Biology courses listed in the proposed curriculum.

Regards,

Mark Bergland  
Chair, Department of Biology

mark.s.bergland@uwrf.edu  
715-425-3591 (office) or 715-529-8845 (cell)

University of Wisconsin-River Falls  
410 S. Third Street • River Falls, WI 54022 • USA
September 18, 2015

Dear Travis,

The Department of Chemistry reviewed the proposed curriculum for the new Neuroscience program. The chemistry-related content, including the distribution of courses between the required and elective areas, is appropriate to support a broad range of student interests within the neuroscience field. We regularly offer all of the included chemistry courses and would have the capacity to accommodate an influx of neuroscience students. We look forward to continued collaboration with the Neuroscience program.

Sincerely,

Karl P. Peterson, Ph.D.
Professor and Chair
Department of Chemistry
715-425-3523
Karl.peterson@uwrf.edu
From: Kathy Tomlinson  
Sent: Saturday, September 19, 2015 9:19 AM  
To: Travis Tubre  
Subject: Re: Inclusion of Math supporting requirements in Neuroscience Program

Hi Travis,

As the Math Department chair, I approve the required supporting courses for the new undergraduate major in Neuroscience:

- MATH 147 or MATH 149 or MATH 166
- MATH 231 or PSYC 201

The understanding is that most students would take MATH 147 but that students who were planning to pursue graduate study would be advised to take MATH 166.

Kathy

From: Travis Tubre  
Sent: Friday, September 18, 2015 10:47 AM  
To: Kathy Tomlinson  
Subject: Inclusion of Math supporting requirements in Neuroscience Program

Hello, Kathy –

The Psychology Department is collaborating with Biology and Chemistry to offer a new undergraduate major in Neuroscience to begin in the fall of 2016. As part of the curriculum, we would like to require that students complete Math 147, 149, or 166 as a required supporting course. In addition, as another required supporting course, students would be able to choose from Psychology 201 (Behavioral Statistics) or Math 231 (Biostatistics). We believe that mathematical foundations are quite critical to students in this area, and would appreciate your support in allowing us to list these courses in the curriculum. May we have your approval to do so?

Thanks, and I hope you are well.

Travis
From: Hossein Najafi  
Sent: Sunday, September 20, 2015 10:48 AM  
To: Travis Tubre  
Subject: Re: Inclusion of CSIS Courses in Neuroscience Major Curriculum

Hello Travis,

The CSIS department has no objection in listing the mentioned courses as allowable electives in the proposed neuroscience program. You have the CSIS department's approval and support.

Hossein

Sent from my iPhone

On Sep 18, 2015, at 1:53 PM, Travis Tubre <travis.tubre@uwrf.edu> wrote:

Hello, Hossein –

The Psychology Department is collaborating with Biology and Chemistry to offer a new undergraduate major in Neuroscience to begin in the fall of 2016. As part of the curriculum, we would like to list CSIS 239, 334, 373, and 452 as allowable electives in the proposed major. May we have your approval to do so?

Thanks, and I hope you are well.

Travis

----------------------------------------
Travis Tubré, Ph.D.
Professor and Interim Chair, Department of Psychology
University of Wisconsin-River Falls
410 S. 3rd St.
River Falls, WI 54022
715-425-3306

<image001.png>
From: James Madsen
Sent: Friday, September 18, 2015 1:50 PM
To: Travis Tubre
Subject: RE: Inclusion of Physics Courses in Potential Neuroscience Major

Hi Travis:
The physics department supports the inclusion of Phys 121,122 and 131,132 as electives in Neuroscience.
Thanks,
Jim

Jim Madsen
Professor, Chair
Physics Department
UWRF
410 South Third Street
River Falls, WI 54022

Associate Director for Education and Outreach
IceCube Collaboration
715-425-3235 Office
715-425-0652 FAX

From: Travis Tubre
Sent: Friday, September 18, 2015 1:48 PM
To: James Madsen <james.madsen@uwrf.edu>
Subject: Inclusion of Physics Courses in Potential Neuroscience Major

Hello, Jim –

The Psychology Department is collaborating with Biology and Chemistry to offer a new undergraduate major in Neuroscience to begin in the fall of 2016. As part of the curriculum, we would like to include PHYS 121/122 and 131/132 as elective courses. May we have your approval to do so?

Thanks, and I hope you are well.

Travis

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Travis Tubré, Ph.D.
Professor and Interim Chair, Department of Psychology
University of Wisconsin-River Falls
410 S. 3rd St.
River Falls, WI 54022
715-425-3306
From: Zhiguo Yang  
Sent: Friday, September 18, 2015 10:57 AM  
To: Travis Tubre  
CC: Imtiaz Moosa; Walter Wietzke  
Subject: Re: Inclusion of PHIL 220 in Neuroscience Major

Travis,

Thank you so much for informing us of your effort to build this multidisciplinary program—it is an exciting and meaningful program—and for making PHIL 220 Bioethics a construction block for it. I completely agree with your assessment of the significance of this philosophy course to the new major and I am sure, Dr. Walter Wietzke, the current instructor of PHIL 220, and Dr. Imtiaz Moose will see it in the same way.

Good luck with the promotion of the program and have a nice weekend!

Zhiguo

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From: Travis Tubre  
Sent: Friday, September 18, 2015 10:43 AM  
To: Zhiguo Yang  
Subject: Inclusion of PHIL 220 in Neuroscience Major

Hello, Zhiguo –

The Psychology Department is collaborating with Biology and Chemistry to offer a new undergraduate major in Neuroscience to begin in the fall of 2016. As part of the curriculum, we would like to include Philosophy 220 (Bioethics) as a required supporting course. We believe that the course would provide important foundations to our students in the ethics of various research and practice issues in Neuroscience. I am writing to formally request your support in doing so.

Thanks, and I hope you are well.

Travis

______________________________
Travis Tubré, Ph.D.  
Professor and Interim Chair, Department of Psychology  
University of Wisconsin-River Falls  
410 S. 3rd St.
From: Walter Wietzke [mailto:w.wietzke@gmail.com]
Sent: Friday, September 18, 2015 11:03 AM
To: Zhiguo Yang
Cc: Travis Tubre; Imtiaz Moosa
Subject: Re: Inclusion of PHIL 220 in Neuroscience Major

I also agree! Thanks for sharing the news.

Walter

On Fri, Sep 18, 2015 at 10:57 AM, Zhiguo Yang <zhiguo.yang@uwrf.edu> wrote:

Travis,

Thank you so much for informing us of your effort to build this multidisciplinary program—it is an exciting and meaningful program—and for making PHIL 220 Bioethics a construction block for it. I completely agree with your assessment of the significance of this philosophy course to the new major and I am sure, Dr. Walter Wietzke, the current instructor of PHIL 220, and Dr. Imtiaz Moose will see it in the same way.

Good luck with the promotion of the program and have a nice weekend!

Zhiguo
PSYCHOLOGY DEPARTMENT MEETING MINUTES
12:00 PM, Wednesday, September 2, 2015
Centennial Science Hall 173

Attending: Melanie Ayres, James Cortright, Lisa Isenberg, Cyndi Kernahan, Dan Linwick, Rik Seefeldt, Todd Wilkinson, Chair: Travis Tubré; Notes: Jody Sather

Reminders/Updates/Announcements

Technology Updates:
- Computer replacement –
  o The department is up for computer replacement.
  o Let Travis know if you would like a new computer. Dan and Lisa decline.
- The new recording hardware has been installed in the Social Psychology Observation Lab. See Travis and/or Jody for information on how to use the new hardware. The software is currently installed on Travis’s Macbook.

Enrollment updates (see handout)
Looking for new student worker (Nicole moved on)
First Day Attendance data – should be sent to Travis.
Activity Insight – make sure to enter your data
FIASPD Grant Proposals – 9/7
Picnic – 9/24 (4:00)
Falcon Grants – 10/16
URSCA Mentor Travel Grants 10/16
MPA 11/10
Summer activities in main office (LinkedIn, website, participation pool)
Jody needs some snapshot data for each of us and will provide a form to enter it

Meeting called to order by Travis Tubré at 12:10 PM

Agenda Items

Item 1: Discussion of potential Neuroscience Program involvement and timelines
  a. Updates from Travis:
     i. Interest from Communication Sciences and Disorders department to be involved
     ii. Interest from EC to collaborate is sincere
     iii. Biology would consider taking the program if Psychology declined
     iv. Chancellor supports the new Neuroscience degree and is committed to ongoing support
  b. Motion made by Melanie Ayres to proceed with the development of the Neuroscience Program, seconded by Cyndi Kernahan
  c. Discussion of details of the program
  d. Travis Tubré called the vote: Yea - 5; Nay -1; Abstain – 1
  e. Motion carries to proceed with the development of the program
  f. Interested parties will meet and work on the program and curriculum starting next week.

Future Agenda Items:
Discussion of Senior Seminar and Careers course credits
Assessment
Enrollment retention ideas

Next Meeting: 9/9
PSYCHOLOGY DEPARTMENT MEETING MINUTES
12:00 PM, Monday, September 21, 2015
Centennial Science Hall Room 173

Attending: Melanie Ayres, James Cortright, Lisa Isenber, Dan Linwick, Todd Wilkinson, Chair: Travis Tubré, Notes: Jody Sather
Not in attendance: Cyndi Kernahan, Rik Seefeldt

Check-in, review of agenda items

Meeting called to order by Travis Tubré at 12:05 PM

Agenda Items

Item 1: NSCI 111 Introduction to Neuroscience – Consideration of course proposal
   a. Updates: course objectives, removed Gen Ed codes, requested new designator (NSCI)
   b. Lisa Isenberg moves to approve the course proposal; the motion is seconded by Melanie Ayres.
   c. Discussion: Dan Linwick and others suggest edits to the proposal
   d. Travis Tubré calls vote on approving the course proposal incorporating the suggested edits.
      Motion carries – Yea: 5; Nay: 0; Abstain: 0.
   e. The Psychology Department approves the course proposal for NSCI 111 Introduction to Neuroscience.

Item 2: Neuroscience Program – Consideration of proposed curriculum
   f. Updates: Discussed curriculum changes to the proposed Neuroscience Major Requirements since
      the last meeting, the curriculum has been approved by Biology and Chemistry with letters of
      support in hand. Letters of support have also been received from Mathematics, History and
      Philosophy, Physics and Computer Science and Information Systems
   g. Lisa Isenberg moves to approve the Neuroscience curriculum; the motion is seconded by Todd
      Wilkinson.
   h. Discussion: Group suggests formatting changes to document
   i. Travis Tubré calls vote on approving the curriculum for the proposed B.S. in Neuroscience.
      Motion carries – Yea: 5, Nay: 0; Abstain: 0.
   j. The Psychology Department approves the curriculum for the B.S in Neuroscience.

Reminders/Updates/Announcements
First SURSCA Meeting – 9/28 – 5PM, URSCA Office
Picnic – 9/24 (4:00)
Falcon Grants – 10/16
URSCA Mentor Travel Grants 10/16
MPA 11/10
USE Grant 11/12
Fall GALA (apply by 11/25 – present 12/3)
NCUR – 12/2 (April 7-9, Asheville, NC)
Jody needs some snapshot data for each of us and will provide a form to enter it

Future Agenda Items
Recruitment and retention, Assessment and PPAR, Internships, Alumni outreach/fundraising

Next Meeting: 10/7