New Undergraduate Course Request
Montana State University

Department: CBN
College: LS
Rubric: BIOH 309
Course Number: 3
Core Area(s):

Spring 2013

Course Title (for Catalog):
Human Neuroscience

Course Title (for Schedule - maximum of 22 characters):
Human Neuroscience

Have you checked with the Registrar's office (X5513) to make sure the new course number has not been used in the past ten years? Yes

Frequency Offered: ☐ Annual ☐ Alternate Years
If alternate, starting year:

Semesters(s) Offered:
☐ Summer ☐ Fall ☐ Spring

Credits by Mode of Instruction:
Lecture: 3
Independent Study: □
Recitation/Discussion: □
Seminar: □
Lab/Studio: 1
Total: 4

Primary Mode of Delivery (Check One):
☐ Face-To-Face
☐ Audio and/or Video Tape
☐ Internet/Web-Based
☐ Interactive Video

Time and Location (Contact Registrar's Office for room availability):

Days: ☐ M-Thr
☐ Fr
Times: 9:05-10:45
Rooms: 344
Capacity: 25

Prerequisite course(s) (Upper-division courses are normally expected to have prerequisites. When listing multiple prerequisites, please be clear about whether the courses are all required (separated by "and") or if only one is required (separated by "or"): BIOH 185 or BIOH 301

Co requisite Courses:

Course Description (40 word limit): Please attach a typed copy of the catalog course description immediately following this cover page.

Person Initiating This Request: Sam McCollley
Instructor's Banner ID or SSN: 01206476
Phone: 406.522.0111
E-mail: samuel.mccollley@gmail.com

APPROVAL
You only need to obtain the 2 that are indicated with an asterisk (*)

Department Head: [Signature] 8/23/12
Vice Provost Academic Affairs: [Signature] 9/13/12

College Dean or Assistant Dean: [Signature] 9/13/12

Chair, Undergraduate Studies Committee: [Signature] 9/17/12

Revised 10.20.05
Course Description: Human Neuroscience BIOH 309

Covering the organization and function of the human nervous system. The course will emphasize theories of its normal functioning and its responses to environmental change, as in learning and structural modification.
Student Learning Outcomes
Human Neuroscience: BIOH 309

- Students will be able to distinguish and describe the anatomical structures of the central nervous system.
- Students will be able to differentiate the functional regions of the brain.
- Students will be able to determine clinical conditions of the brain and demonstrate the effects on brain functionality.
- Students will be able to analyze somatosensory and motor pathways to determine vertebral injury.
- Students will be able to distinguish the varying orders of visual pathways.
- Students will be able to apply higher cortical functions through their comprehension of the cerebral hemispheres and lateralization.
- Students will be able to apply the workings of the emotional systems with interpreting mental illness.
**INTRODUCTION TO HUMAN NEUROSCIENCE (BIOH 309)**
Course Proposal - Spring 2013

**Faculty & role:**
Sam McCollley, M.S., Course Chair, samuelmccolley@gmail.com
Cassie Cusick, Ph.D., Professor of CBN, laboratory instruction and selected lectures, ccusick@montana.edu

Lecture: Tuesday and Thursday 9:25-10:45
Laboratory: Thursday 11-12:50

**Grading Policy:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Quiz Grade</td>
<td>25%</td>
</tr>
<tr>
<td>Written Quiz Grade</td>
<td>50%</td>
</tr>
<tr>
<td>Final Grade</td>
<td>25%</td>
</tr>
</tbody>
</table>

**Course Objectives:**
Introduction to Neuroscience concerns structure, function, and selected clinical conditions of the nervous system. Because the nervous system has both regional organization and interconnected systems, the course will use both approaches. The lectures are supplemented with laboratories on human brain organization at the gross and systems levels, using human brain specimens, neuroanatomy teaching software, and online teaching resources of MRI of human brain.

**Textbooks:** Mark Bear, Introduction to Neuroscience.

**Radiology online resources:** We will use the Whole Brain Atlas from Harvard University to correlate MRI and CT images with brain slices studied in lab.
<table>
<thead>
<tr>
<th>Course Plan:</th>
<th>Content</th>
<th>Weeks</th>
<th>Clinical Correlations</th>
<th>Approximate % of Quiz &amp; Final Exam Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overview Block I</strong></td>
<td>Cerebral Hemisphere Anatomy &amp; Localization</td>
<td>4</td>
<td>Lesion method in neurology: Phineas Gage, H.M.; intro to stroke as a tool for localizing function</td>
<td></td>
</tr>
<tr>
<td><strong>Overview Block II</strong></td>
<td>Spinal Cord</td>
<td>2</td>
<td>Sensory pathways; UMN and LMN lesions</td>
<td></td>
</tr>
<tr>
<td><strong>Overview Block III</strong></td>
<td>Brainstem</td>
<td>2</td>
<td>TBA ??Locked in syndrome?</td>
<td></td>
</tr>
<tr>
<td><strong>Systems Block I: Somatosensory</strong></td>
<td>Receptors, maps, and evolutionary diversity</td>
<td>2</td>
<td>Phantom limbs and map reorganization</td>
<td></td>
</tr>
<tr>
<td><strong>Systems Block II: Motor</strong></td>
<td>Cortex, Basal Ganglia, Cerebellum</td>
<td>2</td>
<td>Corticospinal lesions; Huntington's; Parkinson's</td>
<td></td>
</tr>
<tr>
<td><strong>Systems Block III: Visual</strong></td>
<td>Visual pathways: early to high order</td>
<td>2</td>
<td>Dyslexia?</td>
<td></td>
</tr>
<tr>
<td><strong>Higher Cortical Functions &amp; Emotional Systems</strong></td>
<td>Lateralization of function; Limbic system: Amygdala, ACC, VTA &amp; n. accumbens</td>
<td>2</td>
<td>Language areas (Broca's, Wernicke's) and stroke; Alzheimer's disease; Fear (PTSD), Depression, and Addiction</td>
<td></td>
</tr>
</tbody>
</table>
General Course Information (1-5)
1. Human Neuroscience will focus on the organization and function of the human nervous system in health and disease. The course will emphasize theories of its normal functioning and its responses to environmental change, as in learning and plasticity. Most of the data generated on vertebrate brains has been collected from a very few species, e.g. rats and mice, whose brains are specialized to optimize the animal’s behavioral adaptation to its environment. The comparative approach to brain organization suggests that functions of the human brain are likewise highly evolved. In particular, language and higher cognitive functions are elaborated human behaviors for which there may be no good animal models. This course will use modern studies, especially functional imaging, to elucidate unique attributes of the human brain.

The goals of the course are to provide a brief introduction to the organization of the neurons and neural systems, and then to examine selected human neural systems, especially language areas, vision, memory, and spatial processing. Sensorimotor systems will be examined for plasticity and recovery of function after stroke.

The presentation of material will mainly follow a lecture format with tutorials on brainstem, spinal cord, and of wet lab and MRI study of human brains.

2. Students will be evaluated using a series of lecture and laboratory quizzes covering the pertinent topics throughout the semester. The focus will be on the students’ assimilation of material and their aptitude in applying this information. In addition there will be a comprehensive final examination.

3. Course Outline:
I. Anatomy and localization of the cerebral hemispheres
   A. Lobes and their functions
   B. Sensory, motor and associated areas
   C. Ventricles and cerebrospinal fluid
   D. Blood supply
II. Spinal cord
   A. Sensory pathways
   B. Motor pathways
   C. Peripheral nervous system
   D. Reflex arcs and integration
III. Brain stem
IV. Somatosensory and viscerosensory
   A. Receptors
   B. Mapping
   C. Evolutionary diversity
V. Motor system
   A. Cortex
   B. Basal ganglia
   C. Cerebellum
VI. Central visual system
VII. Higher cortical function and emotional systems
VIII. Other topics covered:
   A. Prefrontal contributions to emotion and personality
   B. Types of memory
   C. Language systems
   D. Functional imaging of language
   E. Somatosensory mapping and reorganization
   F. Motor systems
   G. Stroke and new models of functional reorganization
   H. Vision: pathways for perception and action
   I. Hemispheric specialization (Left Brain-Right Brain)

4. The course will not have a single standard text, as curriculum development in undergraduate neuroscience is generally not focused on the human brain, and clinically oriented texts are not completely appropriate. The text *Neuroscience: Exploring the Brain* by Bear, Connors, and Paradiso is recommended.

5. Developing student learning objectives and then assessing the effectiveness of student achievement within those objectives will help us determine the success of this course. In conjunction student evaluations will be used to aid faculty in refining their approach in imparting this subject matter.

Level of offering (6-7)
6. This course has not been offered before.

7. This class will be offered as a 300 level course. The level of content in concert with the prerequisites (BIOH 185 or 201) needed by the students support this course level.

Relationship to other Courses, Curricula, and Departments (8-10)
8. The course builds on two particular survey courses offered in our curriculum Integrative Physiology BIOH 185 and Anatomy and Physiology I BIOH 201. However, they are not Neuroscience based courses, but will aid in developing basic background information on the nervous system for students.

9. Neurophysiology BIOH 313 and Cognitive Neuroscience BIOH 435 are current courses that will build on a limited amount of topics covered in the proposed course. Nevertheless there are significant differences in the material covered in the proposed course. Neurophysiology BIOH 313 focuses on the cellular level and deals more with the physiology associated with Neuroscience, whereas Cognitive Neuroscience emphasizes primarily on perception and mental disorders. The proposed course will concentrate strictly on humans and more on normal organization and plasticity.

10. Refer to addendum
Students Served (11-12)
11. Human Neuroscience serves both majors and non-majors. This course will provide an opportunity for students who are majoring in Cell Biology and Neuroscience, Nursing, and, other health professions. The subject matter of this course will be germane to all students in anyone of these disciplines. Moreover the clinical applications covered will particularly be relevant.

12. Enrollment will be capped at 25 students due to the limited number of current laboratory specimens. In the future there is potential for expansion on this cap.

Resources (13-14)
13. We will use the Whole Brain Atlas from Harvard University to correlate MRI and CT images with brain slices studied in lab.

14. The MSU Library would not need to provide any resources.

Other Supporting Material (15-16)
15. Dr. Cassie Cusick’s CV and a draft of course syllabus (addendum).

16. N/A
Addendum

Samuel McColley’s CV
Thom Huges Letter of Support
Cathrine Cusick’s CV
Course Syllabus (Draft)
Personal Summary

An enthusiastic collegiate instructor with 7 years of experience, providing students with a strong education in the Health Sciences through continual course and professional development. Having an impeccable record in coordinating laboratories, managing teaching assistants, student assistants, equipment, and human specimens. Fostering an environment that is conducive for all students alike by addressing multiple learning styles and providing unique hands on experiences that engender passion in their field of study.

Current Position

Adjunct. Professor for the Department of Cell Biology and Neuroscience (2008-Present)
Montana State University
513 Leon Johnson Hall
Bozeman, MT 59717-3080

Education

University of Wisconsin
(Marathon County) - Wausau, WI

Montana State University – Bozeman, MT

Montana State University – Bozeman, MT

Associates Degree 2001
B.S. Ecology 2004
M.S. Animal and Range Sciences 2007

Teaching Experience

• Lecture and laboratory instructor for Anatomy and Physiology I (BIOH 201)
• Laboratory instructor and coordinator for Integrative Physiology (BIOH 185)
• Laboratory instructor and coordinator for Microanatomy (BIOH 454)
• Laboratory instructor and coordinator for Advanced Human Anatomy (BIOH 411)
• Teaching Assistant for Anatomy and Physiology I and II (2005-2007)

Experience

• Developed the laboratory portion for a new course - Integrative Physiology
• Independent study at MSU - Over 100 hrs. of head, neck, torso, and appendicular dissection.
• Courses audited at MSU – MEDS 531, 532, 551.
• Cadaver dissection and preparation for the undergraduate Anatomy laboratories (+400hrs.).
• A recipient of multiple CFAC grants and an EFAC grant for laboratory enhancement.
Ongoing Outreach

- Faculty support for Montana State University’s Cooperative Program
- Administering cadaver demonstrations for message therapists, exercise therapists, and EMTS.
- Volunteering at the emergency room - Bozeman Deaconess Hospital

Teaching Awards

- Certificate of Appreciation - College of Nursing 2012
- Outstanding Graduate Teaching Assistant - College of Letters and Science 2006
Wednesday, August 22, 2012

re: new course in Neuroanatomy

To whom it may concern,

Sam Mccolley is proposing a new course in neuroanatomy that I completely support. At the moment we have ~340 majors in the department, most of whom have a strong interest in human biology in health and disease. Despite the remarkable growth of the major and success of our department, resources and additional faculty have not been made available, so our upper level course offering are remarkably slim. The anatomy of the brain is a fascinating topic that our students consistently ask for a course in, but to date we have not been able to develop the course. This sort of course is fundamental for students considering graduate work in neuroscience, or careers in medicine. This year Sam Mccolley has proposed putting on a course, with help from our senior faculty including Cassie Cusick. Sam has done an outstanding job teaching labs in anatomy in our anatomy and physiology classes, as well as helping with the advanced anatomy 400 level course. The students consistently rave about the clarity of his instruction, the depth of his knowledge, and his obvious concern for their success.

I am delighted he has taken the initiative to propose the course.

Thom Hughes
CURRICULUM VITAE
Catherine G. Cusick

1. Personal Data:
PRESENT POSITION: Professor of Cellular Biology and Neuroscience and
Director of Curriculum for the Anatomical Sciences
WWAMI Medical Program
Montana State University
308 Leon Johnson Hall
Bozeman, MT 59717-3080
(406) 994-3993
email: ccusick@montana.edu

PERSONAL INFORMATION:
Born: September 30, 1952; Pullman, Washington
Family: married to David Michael Cameron
son, James W. Cameron, born 6/19/85
daughter, Margaret T. Cameron, born 9/26/88

2. Education:
Occidental College, Los Angeles, CA B.A. Biology and German
1974
University of Washington, Seattle, WA Ph.D. Biol. Structure 1979
R.D. Lund, major professor
Field of study: developmental neurobiology

3. Postgraduate Training:
Vanderbilt University, Nashville, TN Postdoctoral training 1979-81
J.H. Kaas, postdoctoral advisor
Field of study: neurophysiology; functional organization of primate visual and
somatosensory cortex

4. Faculty Positions:
Research Associate, Department of Psychology, Vanderbilt University, 1982-1983
Research Asst. Professor, Dept of Psychology, Vanderbilt University, 1983-1985
Research Affiliate, Kennedy Center for Research on Education and Human
Development, Vanderbilt University, 1983-1985
Assistant Professor, Department of Anatomy, Tulane University, 1985-1989
Research Affiliate, Tulane Regional Primate Center, 1988-2005
Associate Professor, Department of Anatomy Tulane University, 1989-1994
Professor, Department of Structural and Cellular Biology (Anatomy), Tulane
University, 1995-2008
Senior Research Affiliate, Division of Behavioral Biology, New Iberia Research
Center, 1997-2008
Adjunct Professor, Department of Psychiatry and Neurology, 1998-2008
VA MIRECC Senior Affiliate Investigator, VISN 16 (2000-2008)

Professor of Cell Biology and Neuroscience, Montana State University and Director of Curriculum for the Anatomical Sciences, WWAMI Medical Program (Aug. 1, 2008-

4. Honors:
   Phi Beta Kappa
   Graduated from Occidental College magna cum laude
   Individual NRSA Postdoctoral Fellowship, National Eye Institute
   NIH-New Investigator Award from the National Institute of Dental Research
   Travel award recipient to Second World Congress of Neuroscience
   Visiting Scholar in Vision Sciences, University of Alabama, Birmingham

TEACHING AWARDS:
   Neuroscience, Most Improved First Year Course (2000)
   Outstanding First Year Professor, second semester (2000)
   T1-Web Resources, second semester (2001)
   Professor of the Year, First Runner-up (2004)
   T1-Web Resources (2007)
Several course awards to Gross Anatomy not included.
   Logan Faculty Enhancement Award (WWAMI-MSU, 2011)

5. Professional Organizations:
   Society for Neuroscience
   Greater New Orleans Chapter of the Society for Neuroscience
   Treasurer, 1988-1989
   Sigma Xi
   Organization Committee Member, Southeast Regional Meeting of the Society for Neuroscience, 1989
   Member, Committee on Neuroscience Literacy, Society for Neuroscience, 1992-1994
   Organizer, Short Course for Pre-College Biology Teachers, Society for Neuroscience, 1991-3
   Workshop Co-Organizer, International Conference on Tools with Artificial Intelligence, "Real and Artificial Intelligence: At the Crossroads of Neuroscience and Neurocomputing", 1994.
   Speaker, National Youth Leadership Forum, 2003-2004

6. Teaching Responsibilities:
MONTANA STATE UNIVERSITY:
Courses taught in the WWAMI Medical Curriculum:
- Trunk Anatomy, Fall 2008-, Course Chair, lecture and lab
- Head and Neck Anatomy, Spring 2009-, Course Chair, lecture and lab
- Musculoskeletal Course, Spring 2009-2010, contributed 50% to lecture and lab
- Spring 2011-, Course Chair
- Medical Histology, 2008- contributed 4 lecture hours
- Medical Neuroscience, 2008- contributed 2 lecture and 4 laboratory hours

Course Development:
- Gross Anatomy and Histology: revision of course materials, updating curriculum and imaging resources, development of technology for use in laboratory
- Musculoskeletal Course: Development of objectives and new lectures correlating anatomy with clinical problems

TULANE UNIVERSITY SCHOOL OF MEDICINE:
Courses taught in the Medical Curriculum:
  - Team taught laboratory and lecture course, 300 contact hours 1985-88;
  - 215 contact hours 1989-1999
- Advanced Gross Anatomy, Prosection (1986)
  - Guided independent study and dissection of Head and Neck
  - Guided independent study of Upper Limb
  - Laboratory instructor and lecturer, Head and Neck block
- Neuroscience 602 Interdisciplinary Course (1989), lecturer for graduate topics, 2 hours
- Neuroscience Review lectures for Neurology Residency Program (1999-2004), 2-4 lecture hours
- Author of Neurological Symptoms Section, Diabetes Problem Based Learning (PBL) Exercise (3 week long capstone experience for first year medical students)
- Co-Course Director, Medical Neuroscience, 2000
- Course Director, Medical Neuroscience, 2001-2008
- Gross Anatomy Faculty of Tulane Medical School at Baylor College of Medicine (post-Katrina venue), Head and Neck Block

Courses taught in the Graduate School Curriculum:
- Graduate Neuroscience (Co-director of neural systems semester, contributed 12 lecture hours, 1999-2006)
- Special Topics Neuroscience (710; 2000-2005, Course Director)
- Methods in Neuroscience (1987-2005), Core course for Neuroscience Training Program, contributed 6 hours, course offered in alternate years

Catherine G. Cusick, Ph.D.
11/4/11
Mammalian Visual Systems (1988) Special topics elective; Co-Course Director
Trends in Neuroscience, (1990-92); Course Director, required Journal Club for Neuroscience Training Program, including Spring 1998

Chair, Graduate Research Advisory Committees (Tulane):
  Carolina Gutierrez, Ph.D., 1995
  Jeffrey Padberg, Ph.D., 1999
  Monique Cola, M.S., Ph.D., 2004
  Catherine Clayton, co-advisor, Ph.D. 2004
  Tracey Knaus, co-advisor, Ph.D. 2004
  Ning Guyong, co-advisor, Ph.D. 2007
  Elizabeth Jensen, M.D.-Ph.D. program, graduated with both degrees, 2008
Advisor for Rachel Zarndt’s master’s program, 2008 (MSU)

EDUCATIONAL COMMITTEES AND SERVICE:
Graduate Faculty (1987-2008)
Neuroscience Training Program Faculty (1987-2008)
  Steering Committee member (1997-2005)
Departmental Graduate Advisory Committee (1994-1997)
Review Committee for Required Medicine Clerkship (1990)
Judge, Schlegel Award for Excellence in Graduate Research (1993-1995)
Review Committee for the Foundations in Medicine Course (1990)
Review Committee for Family Medicine Clerkship (Chair, 1991)
First Year Curriculum Advisory Committee (2000-2008)
Curriculum Committee (2000-2004)
Steering Committee for Medical Neuroscience Course (Chair, 200-2008)
Medical Student Academic Progress Committee (2003-2008)
Interdisciplinary PBL Committee (2004-2008)
Chair, TI Curriculum Advisory Committee (2007-2008)
Organizer, Faculty Committees for Development of an Integrated First Year Curriculum (2007)

7. Editorial Boards:
   Journal of Comparative Neurology (1998-2002)
   Journal of Chemical Neuroanatomy (2000-)
   Brain Research (2007-)

8. Grant Reviews:
   Spinal Cord Injury Research Foundation
   NIH, National Institute of General Medical Sciences, MBRS Program,
     Neuroscience and Pharmacology: Review Panel Member, February 1995,
     February 1997, February 1998

Catherine G. Cusick, Ph.D.
11/4/11
NIH, National Institute of General Medical Sciences, MBRS Program, Special Panel to Review Undergraduate Training Grants, July 1995
NIH, Ad hoc Reviewer for Special NINDS Panel to Review Program Project Grants, June 1998 and February 1999
NIMH, panel for review of Conte Neuroscience Centers for the Study of Schizophrenia
NSF Developmental Neuroscience Program 2000
NSF Sensory Physiology and Perception Review Panel, 2001-2003
NIH Special Emphasis Review Panel, ZRG1, 2004
NSF behavioral neuroscience and endocrinology panel, 2004-2006
NIH special cognitive neuroscience review panel 2004, 2006
NIH Special Emphasis Panel, 2007

9. Intramural Committee Service (excluding teaching committees):
Tulane University School of Medicine:
Advisory Committee for Animal Resources (1987-88)
Subcommittee for Vivarial Resources (1987-88)
Institutional Committee for Review of the Radiology Department (1992-93)
Construction Grant Advisory Committee for renovation of Vivarium
Institutional Committee for Review of the Anesthesiology Dept. (1995-96)
Personnel and Honors Committee (1997-1999)
Search Committee for Chairman of Otolaryngology Department (1999)
Executive Faculty of the Tulane Medical School (ex officio, 2000-2008)
Dean's Staff, Tulane Medical School (2000-2006)
Grievance Committee (2001-2002)
Steering Committee for Development of a Neuroscience Center (2002-2004)
Search Committee for the Chair of the Department of Neurosurgery (2003-2005)
Personnel and Honors Committee (2006-2008)

MSU:
Chemical Safety Committee (charged with developing a Chemical Hygiene Plan for MSU)

Departmental (Tulane School of Medicine):
Graduate Student Recruitment Committee (1987-1990)
Ad Hoc Committee to Develop Guidelines for Annual Career Planning Conferences (1995)
Ad Hoc Committee to Develop Guidelines for Disbursement of Cummins Graduate Scholarship Funds (1999)
Chair, Technology Committee (2003-2006)

Catherine G. Cusick, Ph.D.
11/4/11
Space Committee (2006-2008)

10. **Research Funding:**
Morphological Bases of Visuospatial Deficits in Alzheimer's Disease
VA-MIRECC pilot grant program.
Role in project: Principal Investigator

"Thalamo-striatal Mechanisms of Morphine Action"
Principal Investigator: Richard Harlan
Co-Investigator: Catherine G. Cusick, 15% effort
Agency: NIH/NIDA
Type: R01 (DA11939); period 2/1/00-1/31/04.

"Organization of Superior Temporal Polymodal Cortex"
Principal Investigator: Catherine G. Cusick
National Eye Institute, R01-EY08906-04, 9/30/91-4/30/00
Competing continuation was extended to 4/30/02.

Pine Foundation, "Thalamic Centers for Visual Attention in Alzheimer's Disease,"
Principal Investigator.


Veterans Affairs Research Service, "Cortical Connections of Association Cortex", Co-Investigator (B. Seltzer, Principal Investigator), 10/1/90-9/30/93.

Biomedical Research Support Grant, Tulane University School of Medicine, "Neurotransmitter Expression Following Nerve Injury", 11/1/90-10/31/91.

NIH-New Investigator Award from the National Institute of Dental Research, "Organization of Cortical Tooth Representations", R23-DE06554, Principal Investigator, 07/01/83-6/30/86.
NIH-Competing (R01) Continuation of above award, RO1-DE07695, 07/01/86-6/30/90.

Biomedical Research Support Grant, Tulane University School of Medicine, "Development of Neuropeptide Gene Expression," 12/1/89-11/30/90.

Biomedical Research Support Grant, Tulane University School of Medicine, "Organization of Cortical Tooth Representations", 9/1/85-8/31/86.

Catherine G. Cusick, Ph.D.
11/4/11
11. **Full Length Peer-Reviewed Publications:**


10. Pons TP, Garraghty PE, Cusick CG, Kaas JH 1985a. A sequential representation of the occiput, arm, forearm, and hand across the rostrocaudal dimension of areas 1, 2, and 5 in macaque monkeys. Brain Res 335:350-353.


Catherine G. Cusick, Ph.D.
11/4/11


Catherine G. Cusick, Ph.D.
11/4/11


12. Invited Chapters:


13. Selected Abstracts:


Catherine G. Cusick, Ph.D.
11/4/11


14. Invited Lectures and Symposia:


"Somatosensory Map Plasticity is More Extensive in Adult Rats than in Neonates", Greater New Orleans Chapter of the Society for Neuroscience/LSU Medical Center Symposium on Neural Development and Plasticity, April 20, 1995.

"Relation of Primate Visual Pulvinar to Streams for Processing Motion and Form", Visiting Scholars Program and Department of Psychology, University of Alabama, Birmingham, May 27, 1998.


“Functional Organization of the Primate Pulvinar Complex", Invited Speaker to the Department of Cell Biology and Neuroscience, Montana State University, Bozeman, MT, February 2007.

Catherine G. Cusick, Ph.D.
11/4/11
“Directions in Medical School Education: Integration for what? Followed by Commentary on the Unparalleled New Orleans Experience”, Invited Speaker to the Department of Cell Biology and Neuroscience and WWAMI Program, Montana State University, Bozeman, MT, February 2007.