

basis of several devastating human neurological diseases that arise when nervous system function goes awry. Laboratory is integral to the neurobiology experience. However, since this is a relatively new course, lab modules will necessarily have to be phased in slowly over the next few years. Lab time will focus on in depth gross anatomy and histology of the nervous system using sheep and human brains as models. You will become very familiar with all parts of the mammalian brain and will learn to appreciate the intimate connection between anatomy, physiology, and behavior.

In addition to core neuroscience, I will focus heavily on exposing you to a variety of experiences that are designed to help you understand the true nature and scope of neurobiology. I will strive to help you capture the excitement of breakthrough neuroscience discoveries and cutting edge hypotheses by extensive use of primary literature in writing assignments, by reading multiple non-fiction scientific books, and by inviting one or two noted neuroscientists to campus. Some of the most devastating human illnesses afflict the nervous system. Apart from covering some diseases in lectures and conducting a workshop on it, you will read Richard Rhodes' celebrated Deadly Feasts on prion diseases, one of the most unusual enigmas of modern biology. To delve into the most unusual neurological disorders today, you will read Ramachandran and Blakelee's Phantoms in the Brain. To explore illness from the eye lens of family member and caregiver, rather than scientist or doctor, you will read Sue Miller's critically acclaimed The Story of My Father. You will carefully mentor FIYS106 *Medical Mysteries* students in beginning neurobiology projects, in helping organize a campus-wide Brain Awareness Week, and in taking on the role as BIO346 instructor and leading classroom discussions on complex brain functions of language, cognition, and emotions. You will discuss and debate bioethical issues which neuroscientists constantly face, in our very own "NeuroEthics Hour". Finally, you will organize and participate in *NEUROFRONTIERS*, the seventh annual neurobiology research workshop (and the fourth one to be held at Lake Forest College), where you will pretend to be a real-life world expert on a particular nervous system function or disease and give a seminar and write a review paper to be published in an in-house journal. You will have opportunities to hear about current research in the labs of several visiting scientists. Overall, I hope this class will get each of you thinking about what makes you human and you will be asked at the end of the semester to pen your thoughts on a more personal level on these central human issues.

In the words of past neuroscience students:

"One of the most important things that I learned was that the pursuit of scientific knowledge often has its roots in a genuine concern for humanity... Overall, I have learned an amazing amount of factual scientific knowledge, but I have learned even more about the benevolence of the human condition". – now in medical school

"Probably, the most useful course I've taken, and the most difficult. It is about teaching ideas and teaching us how to be effective scientists, as well as specifics. But, I think the ideas are the most important part." –now a research technician, planning to attend medical school

"Something unique happened to me in this class. At first, I couldn't believe the amount of work that had to be accomplished. I actually wasn't sure I could do it all. But the instructor's enthusiasm for biology and teaching seemed to transfer. Not just to me, but to others in the whole class. The "work" became less difficult and felt more like "independent learning". – now in law school

"I think the preparation for "real" science is great and realistic. The course and projects were all run with an enthusiasm for teaching that makes it worthwhile to go to college." –now doing PhD in neuroscience

"The part of the reason I decided to take neuro was he makes it different from the norm... he makes you really think and makes you work with your classmates". – now in medical school

"I loved this class! It was completely different from any other science class and I am taking not only knowledge but skills away with me. The workload was HUGE and at times overwhelming, but for some reason, it was OK. It was one of the few classes where the professor was pulling for the students, working with us, and not making a grade range. I worked only harder. I have never put this time, energy or heart into a class!" – now in healthcare industry

READINGS

1. **BIO346 Lecture Packet**. Pay Business Office, Give receipt to DebBurman, pick up packet
2. **Neuroscience**, by Purves, et al
3. **The Brain Atlas**, by Woosley
4. **Deadly Feasts**, by Richard Rhodes.
5. **Phantoms of the Brain**, by Ramachandran & Blakelee
6. **Story of My Father**, by Sue Miller
7. Several Textbooks and Brain Atlases will be placed in BIO346 DebBurman Informal Reserves.

WRITING CONSULTANT

I am even more delighted that Katrina Brandis'06 and Katie Hampton'06 will also be peer Writing Consultants you can go to for showing drafts of book reviews, reflection essays and medical journalism. It is your option to meet them before each assignment is due and consult them on early and final drafts. They will summarize your consultations and inform me of your progress and efforts, which will form the basis of my awarding you consultation points.

GRADING & ASSESSMENT

I. CORE NEUROSCIENCE (30%)		300
i. Midterm Lab & Viva	125	
ii. Midterm Lecture	125	
iii. Final Reflection	50	
II. POPULAR NEUROSCIENCE (15%)		150
i. Phantoms in the Brain, <i>Exploring Science Writing</i>	50	
ii. Deadly Feasts, <i>Exploring Medical Mysteries</i>	50	
iii. Story of My Father & Iris, <i>Exploring the human condition</i>	50	
III. EXPERIENTIAL PROJECTS (42.5%)		
A. NeuroEthics		75
i. Mentoring FIYS106 students	25	
ii. Evaluating Neuroscience Research Practices	50	
B. Science Journalism		75
i. Role-playing a New York Times Science Reporter		
C. Brain Awareness Campaign, <i>Art of Community Outreach</i>		175
i. Peer mentoring FIYS106 students	25	
ii. Pair Outreach Exhibit	25	
iii. Pair Anatomy Exhibit	25	
iv. Pair Teach-In	100	
D. NEUROFRONTIERS WORKSHOP		200
<i>Role-Playing the World's Leading Neuroscientists</i>		
i. Journal Review Manuscript	100	
ii. Workshop Seminar	100	
IV. YOUR PROCESS OF NEUROLEARNING (2.5%)		25
	Total:	<u>1000</u>

SCALE

- A = 90% or more
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = less than 60%

I reserve the right to introduce a curve at my discretion, but in three years of past teaching I have rarely deviated from the above scale. Importantly, I expect junior and senior students to approach this class from a more altruistic mindset. Use this course as an opportunity to exercise your mind and to learn something new yourself and not get "hung up" on how well your learning relates to a letter grade.

EXPECTATIONS

Academic Honesty:

I have zero tolerance for abuses. Please consult your student handbook regarding academic honesty and the honor system by which you should conduct yourself.

Relevant URL: <http://www.lakeforest.edu/academics/writing/plag.asp>

Attendance:

Philosophy: I will work hard to present to you the most up-to-date and complete information in neurobiology in a lucid and interesting manner. In return, I expect that you will regularly attend my lectures and actively participate in the classroom, lab, and assignments. Invariably, in each lecture, I will present material that textbooks and handouts may not cover. I will assume that you have read your assignments prior to class so that you can best engage in an informed classroom discussion and gain maximum benefit from my lectures. If you skip class, you will miss out both on valuable new information and possibly an interactive dialog.

Punctuality: My pet peeve is when students arrive late to class. Apart from being disruptive to my teaching efforts, it is also disrespectful of the class.

Absences: Unexcused absences from quizzes, exams, and labs will result in an appropriate loss in points. Health-related absences must be confirmed by student health services. Absences due to religious observations must also be made in advance. Family or other personal emergencies will require notification from the Dean of College's office. I will make every effort to reschedule a missed quiz/exam as a result of such excused absences.

Late Assignments: I strongly discourage of assignments being handed in late. **AVOID THIS INDULGENCE.** Each late day is a 25% deduction in points. No assignment will be accepted after the third day it is due.

Lastly, But Not In The Least:

While I never teach this course the same way twice, in all its variations, it has been tremendously successful at two liberal arts colleges, with a rich legacy of seventy-three graduates, the majority now pursuing successful post-graduate degrees and career paths. I am delighted that you are taking this course. Because I am always experimenting with new ways of teaching science to advanced undergraduates, I will push you more than you expected. But, I expect that you will push me just as hard! If you encounter problems understanding the material, please do not hesitate to talk with me. My job here is *to help you learn*. Your feedback and participation in class is very important. I welcome suggestions from you regarding every aspect of the course throughout the semester. Of course, at the end of the semester, the college will require you to formally evaluate my performance. I will look forward very much to that because your comments will help me improve in my quest to be the best teacher I can be and to engage you in superior learning. Remember also that I am here to learn from you. I have often found my students to be my most important teachers. So, I hope this course will be a rewarding experience for all.

ASSIGNMENTS IN DETAIL

I. CORE NEUROSCIENCE (30%)

A. Lecture

I always provide lecture packets for every lecture. They will be the primary source of information that I will test you on. You will benefit from consult appropriate texts for detailed information on each topic. I consult numerous sources for each lecture. I do not follow any one textbook strictly. The prescribed textbook is the one I use most often. For the semester's duration, I have put on informal reserve several copies of the acknowledged bible of all neurobiology textbooks—*Principles of Neuroscience* by *Kandel et al.* This reference should serve well, if your textbook falls short on specific information. The other textbooks that I routinely consult have been placed as part of the Informal BIO346 Reserves in the Johnson 215 for this semester. You are encouraged to consult portions of these other texts.

B. Neuroanatomy Lab

Laboratory access will be available to you from 8 am-10 pm throughout weeks 3-8. Neuroanatomy simply cannot be mastered in 3-hour lab sections. True mastery requires considerable exposure to the brain and individualized self-learning over a period of time. I will guide your learning of neuroanatomy but I insist that you walk this path of discovery semi-independently, using the Brain Atlas and the following sheep brain dissection website: <http://www.uofs.edu/sheep/>. This process of mastery can often be laborious and initially frustrating, but when learnt & understood the rewards are more than worth it.

TESTING CONTENT VIA EXAMS

You will be evaluated via one midterm that will be administered during two weeks before and after the midsemester break (30%). As of now, I hope to have no final exam in this class, and I hope for it to be that way. But, if you miss more than one lecture after the midterm, you will be required to take a final exam of 50 points instead that covers post-midterm of the handing in the 50 points final reflection essay. The midterm will have two parts. The first part (125 points) will cover neuroanatomy labs that run through weeks 3-7. The second part (125 points) will cover lecture materials from weeks 1-8. Material will cover lectures, textbooks, and any other assigned readings up to this point. Format will be a combination of objective and essay-type questions (just like BIO221 exams).

•Old lecture and lab midterms will be available as downloadable PDF documents via the forester pipeline page and studying them will definitely help you succeed in exams.

•I will design mock practical exam a week before the real midterm. Prepare for this mock test seriously and you will improve your chances considerably for the midterms.

C. Reflection Essay

This option is available only if you maintain perfect attendance/miss one lecture after midterms.

Instead of taking a final exam, I encourage you to put your thoughts together at the end of the semester and reflect on your learning the past 15 weeks. Simply by submitting your essay, you will receive full 50 points. I do not read your essays until after your grades are submitted. I also insist that you not sign your name on this essay. I do this in order to allow you be completely free to write without worrying about your grade. You will receive your final essay question soon after your midterm exams are over. It will require you to draw from your experiences from all aspects of this course, the core neuroscience, the popular neuroscience, the practice of science, probing mysteries of the mind, and your workshop and critique the value of such experiences to your academic and personal growth.

II. POPULAR NEUROSCIENCE (15%)

Textbooks are not the only sources of scientific “facts”, “theories”, and “hypotheses”. Science is conveyed to the public via many other formats: popular magazines, essays, nonfiction books, biographies, autobiographies, TV, and the movies. In fact, the public seldom appreciates the undeniable excitement underlying scientific discoveries from textbooks. Some of our deepest thinkers today are scientists and they have led truly extraordinary lives; many are also great writers and storytellers. The three non-fiction books assigned in this course will hopefully engage you in discovering the true essence of great scientists, and physicians, and the effects on families and caregivers: exciting lives, personal sacrifices, remarkable discoveries, brilliant minds, difficult societal issues.

A. DEADLY FEASTS, 50 points

Richard Rhodes wrote this extraordinary detective mystery of a book traces the history of one of the most biologically controversial, dogma-defying, tragic diseases of the 20th century: the prion diseases. It is compelling as much for its masterful account of the biomedical breakthroughs associated with the disease as it is for the human drama involving politics, egos, and the “name-of-the-game-is-fame” element that often pervades international science. These diseases are so unusual within biology that discoveries related to them have yielded two Nobel Prizes in the past 40 years. We will actively read and discuss this book during the week first day of class, during lab time. Your completed discussion sheet and active participation in class discussion is worth 50 points.

B. STORY OF MY FATHER, 50 points

Sue Miller, one of America’s best-selling contemporary novelists, has once again won critical acclaim this year for publishing her latest book that captures her role as caregiver to her father’s Alzheimer’s condition. This vivid moving portrayal is sure to affect you and think of neurological conditions with new insight. You will write a 1000-word reflection essay that requires you to integrate this book with the movie *Iris* (see Neurocinema below), ideas on brain plasticity from your textbook, and your own personal experiences with people suffering from neurologies (if any). You are encouraged to get draft read by writing tutors at the Writing Center. But if you wish to keep this essay confidential, I will respect your need and you may directly give it to me.

C. PHANTOMS IN THE BRAIN, 50 points

My sense is that you will really enjoy this book-this masterpiece is regarded as one of the best-written books about the mysteries of our brain, by a master story-teller and one of the world’s most respected neuroscientists. Your assignment is to take on the job of Science Book Critic write a 1000-word review of this book for the *Scientific American* magazine. This opportunity allows you to critique a review in a lay style (for educated non-scientist) and summarize what’s refreshing, new, and important about this book. You are expected to consult *Scientific American* magazine for style of writing and encouraged to read samples of previously written reviews of other books in this magazine. But, you must completely avoid the temptation of consulting the web or print resources of previously written reviews of this same book. **Note:** I have a thorough library of past reviews found on the web and print resources on this book. You are encouraged to get draft read by either writing tutor at the Writing Center.

III. EXPERIENTIAL PROJECTS

For project 1 form two teams of 4 and for project 3, form four teams of two. Projects 2 and 4 are done individually.

A. NEUROETHICS, The Discussion of Scientific Practice, 75 points

Neuroscientists are constantly faced with their own ethical dilemmas. Part of being a good scientist is being aware of such issues and knowing how to work with them. In this project, you have two roles.

First, each team of four will serve as a peer leader for a group of 4-5 FIYS Medical Mysteries students. Each group will pick a topic from below. You will advise this group to prepare a one-hour class presentation during assigned lab hours that discusses the many issues that underlie your assigned problem, the choices a scientist faces, and steps to overcome the problem. Part of the group's presentation will also be to research real ethical problems that have been highlighted in science journals and the popular media in the last five years that resemble the problem you are discussing. The entire FIYS class should be involved in a 15-minute broader discussion of the same problem during or after the group's presentation. You should not play an active role during the presentation, instead you should seek to mentor them as an experienced peer behind the scenes and prepare them for this discussion.

Second, choose one topic from the topics that FIYS106 students did not pick (you will know what's left before the second week if over) and actively engage the BIOL346 in a discussion of this case study during BIOL346 class time.

I will reserve 10 points for your group to provide me a written summary of your ethics discussion and all consulted materials.

Ethics Topics:

Promotional Pressures
To be a Consultant ... or Not
A Political Power Keg
Concerning Confidentiality
Sound Practices
Cotter's Quandary
A Subject for Discussion

Ethics Dates

Week 5 (FIYS106 Lab Time) BIO346 Student will peer lead
Week 6 (FIYS106 Lab Time) BIO346 Student will peer lead
Week 6 (BIOL346 Lab Time) BIO346 Group Discussion

All scenarios have been adapted from cases described in *Fundamental Neuroscience* by Zigmond, Bloom, Landis, Roberts & Squire (1999, First edition, Academic Press).

•Please request from me additional handouts on “Sample Discussion Grid” and “Ethics Grading Protocol” to facilitate success

B. SCIENCE JOURNALISM, Communicating Medical Advances to the Public, 75 points

In this project, each student plays the role of a medical journalist assigned to convey an exciting new biomedical discovery recently published as a primary article in the journal NEURON for the readership of journal *Nature* in the form of a *News and Views* article. The underlying goal is to learn skills to communicate the biological relevance of a primary article in simple, written language. You can choose any NEURON article published in 2005. Students submit a 1000-word paper written in jargon-free language that captures the paper's medical relevance, describing results simply without compromising scientific content, and discussing how it advances biomedical knowledge. Because I pre-select all articles for general relevance, students concentrate on getting to the heart of the science, without being hindered by technical details that are not absolutely necessary. You must include a figure depicting a biological model at the cellular level that highlights the new discovery being reported. However, unlike in actual popular science journalism, you are required to cite primary articles, review articles, books, or other sources within the text (between 7-10 references is typical). Your best resource is to read example neuroscience-related News and Views articles in *Nature*. Peer teachers and I grade this project jointly using a detailed grading sheet that evaluates papers on both scientific content and journalistic storytelling.

15 points are reserved for having a complete draft critiqued by a writing tutor at the Writing Center during the recommended week and for incorporating her recommendations.

C. LFC BRAIN AWARENESS WEEK, The Art of Public Outreach & Service, 175 points

This is a brand new highly creative and collaborative project for BIO346. It is designed to provide you with an exciting opportunity to educate the LFC community about a neuroscience topic and to mentor freshmen as your collaborators. Pick one topic from among the following four areas of complex brain functions: **Learning & Memory**, **Emotions**, **Cognition**, and **Language**. This chosen topic will also be the same topic you will use for your final course project (see *Peer Education*). You will work with a group of 4-5 FIYS106 Medical Mysteries students (the same that you worked with for the ethics Project) to design, research and conduct a Brain Awareness Campaign educating the community on the biology underlying this topic on our campus on the week of November 10 (2003).

i. Mentoring FIYS Outreach, 25 points: Your pair will be Peer Advisors of your FIYS106 team and help your group implement this project. Your role is to motivate, organize, educate, counsel, help plan, and serve as both a role model and an academic and campus resource. Help students translate creative ideas into reality. Remember they are freshmen—they may not know all the resources of our campus. The actual format of how your group decides to conduct outreach is completely open-ended. I encourage you to be highly creative and have a really enjoyable time with this project. Make it personal to you—invest in it. Remember, *I love being surprised!*

The bottom line for the group's outreach plan:

- educate the non-scientists about the topic in an interesting and effective way
- reach a significant proportion of the campus community (middle campus, peak time)
- combine visual with oral and written forms of communication with some hands-on exercise
- include a physical display of some kind that can later be showcased in Johnson Science Building)
- reflect the liberal arts (try and combine science with fine arts, theater, humanities, social sciences)
- use multiple resources (books, internet, research) and must connect with brain anatomy

Must address:

- why is this an important human behavior to study?
- what is the basic way our brain performs this activity?
- what are the current medical mysteries for this brain activity?

ii. BIO346 Outreach, 25 points: Think of the group outreach as the general background for your plan of action for outreach. Your outreach should strive to provide answers and explain current research to the medical mysteries that your team highlights. Your primary source of information should be primary articles and review papers on this topic from the past five years in the top science journals. You should select to highlight between 3-5 articles that say something new and interesting and extend knowledge beyond what's known in the textbook. Once you read these articles, your job is to then to communicate each of them as an answer to a previously unknown question. For each paper, design a single figure or visual diagram that captures the main result. This diagram must be easy to explain to a non-scientist. Next, design a single poster that combines each of these 3-5 diagrams into one coherent presentation.

You should work with your FIYS106 team to connect your poster effectively with their outreach plan. Both the team and individual efforts must be presented together at the same time.

iii. ANATOMY EXHIBIT, 25 points: Pick two topics from: any of the five senses or aspects of the motor system. Design an anatomy exhibit using sheep and human brains that helps a lay person understand how the brain perceives these senses by emphasizing the pathway and the functions of each part of that pathway. You will demonstrate the exhibit and teach the biology during the Brain Anatomy 101 lab held during FIYS106 lab time during Brain Awareness Week. This lab is open to the campus public and your presentation effort should reflect an ability to reach out to the public. If you have class during that time, make sure you make up for it by contributing significantly to helping your pair member create the exhibit and prepare the presentation to be delivered.

iv. TEACH IN:

This project is designed to give you a first-hand experience in teaching undergraduates. In this case, your BIO346 peers and campus public community. I will release the last four topics of this course (**Learning & Memory, Emotions, Cognition, and Language**) and class and lab periods during brain awareness week to accommodate the outcomes of this project. Your task is to become the expert of one of these topics (this is the same topic you and your FIYS peer group chose for the *Outreach* project and present a lecture on it to your classmates. Also integrate into your lesson the 3-5 current discoveries (the same papers you highlighted for your community outreach project).

I completely accept that teaching by lecture may not be the best method for you, as there all kinds of ways to effectively teach. You should think hard about how you want to teach your classmates. For inspiration, think of the teachers at LFC whose styles you like most and try and adapt their methods to your plan. Think of what you don't like about what I do when I teach, and try other things! I always look for ways to improve my classroom style, and I would be happy to pick some pointers from you.

To create your lesson plan in a timely manner, follow the suggested schedule I have developed (see Project Schedule). Make sure to include in your lesson plan, the use of multiple sources (including multiple textbooks) and the use of multiple communication styles (for example: chalk and board, overheads, PowerPoint, group discussion, props, others).

Make as many appointments with me as necessary, if you need my advice. I want you to succeed and feel confident. But, avoid last minute sessions. You must practice your class teaching presentation in front of your peer teachers at least two days before the presentation. This peer practice is all-important.

D. NEUROFRONTIERS, Exploring Research Careers & Knowledge Building, 200 points

Role-Playing the World's Leading Neuroscientists

i. NEUROFRONTIERS REVIEW MANUSCRIPT, 100 points

ii. NEUROFRONTIERS WORKSHOP SEMINAR, 100 points

This is your “experiential” capstone project, in lieu of a formal final exam. The disease workshop (to be held on December 1st) is a “mock” scientific conference: a meeting of the minds representing the world's top experts in neurobiology and neurological diseases. Your job will be to role-play an assigned real life scientist at the cutting edge of his/her field. The assignments will be made the first week of class. To do this effectively, you will need to become very familiar with your assigned scientist's research and the broader context and impact in which his/her work is being performed. You will have to read, understand, and present many research articles from that scientist's lab and show us logically the art of hypothesis building and testing that made these scientists celebrated leaders in their field. You will also have to give the state-of-the-art background on research done in your field by others.

- All participants must create a lay poster that reaches the non-science public that highlights their career discoveries; this poster will be part of the Brain Awareness Week on campus (week of November 20).

- All participants will pre-submit a 200-word research summary and a 4000-word [journal review manuscript](#) that will be published in a special publication, also entitled NEUROFRONTIERS.

- At the NeuroFrontiers workshop, as the role-playing scientist, you will present your very exciting work in a 35-minute PowerPoint [workshop seminar](#) and answer questions about your work during a 5 minute Q&A session. This year's workshop will highlight three frontiers in neuroscience research:

Mental Frontiers featuring two of the most enigmatic psychiatric illnesses of our time;

Regeneration Frontiers capturing the promise and challenges of repairing brain damage;

Degeneration Frontiers highlighting advances in four brain and muscle degenerative diseases;

I have invited two neuroscience educators and experts on neurodegeneration and regeneration to be our guests for this workshop. They will attend this workshop along with you and be active participants in your seminars and engage in discussions. Most importantly, they will also present research seminars of their work during the workshop. On December 1st, you are required to attend all sessions as well as the seminars of the two guest speakers who will participate in your workshop, unless if you have a class in the E Slot.

The entire class is encouraged to host your speakers for lunch at the Commons and attend a celebratory dinner at my home on December 1, 2005.

*15 points reserved for consultation with your writing consultant on manuscript during recommended week.
15 points reserved for practicing in front of Dr. DebBurman two days before presentation.*

- Follow the deadlines in the PROJECT SCHEDULE attached to this syllabus.
- Attached also is the schedule of scientist assignments.

IV. PROCESS OF NEUROLEARNING (2.5%)

How you learn is just as important as what you learn. You have been asked to master challenging projects in this course that requires you to develop abilities to work well each other and juggle several projects simultaneously. I have provided several teaching supports that should help you maximize your learning efficiently. If you demonstrate positive learning habits, good collaborative ability, and use the placed resources well, I will be happy to award you up to and all of 50 process points.

You have used resources effectively if you

Did not miss appointments with me and did not wait till the last minute to work on assignments and exams
Consulted regularly with peer teachers when you needed advice or help
Attended peer teacher initiated research skills workshops
Used Writing Center for feedback on all papers
Attended mock practical exam in preparing for midterms
Practiced your talks in front of peers

You have collaborated well if you

Contribute equally to developing each project from beginning till end
Participate equally in writing papers and in presenting each talk
Mentored FIYS students responsibly and behaved as peer leaders freshmen could look up to
Provided support for your group members if they needed it
Did not complain about each other and tried to solve conflicts by talking to each other
Maintained healthy collegiality and supported other groups by enthusiastic participation in their efforts

You have demonstrated positive intellectual attitude if you

Were attentive and participated actively in class and lab and pushed me to be even more effective
Were prepared ahead in readings and were not absent or late for class, labs, or meetings
Demonstrated curiosity and creativity in your assignments: stepped “out-of-the-box”
Showed personal initiative and leadership (plenty of scope to do so in this class)

IV. NEUROBONUS: Attend the Neurocolloquium Series

Last year, more than 25,000 neuroscientists attended the 32nd annual meeting of the Society for Neuroscience, making it the largest annual scientific meeting in the world! You can only imagine the breadth and depth of neurobiology research that this meeting represented. My wish is to provide you with a glimpse of this exciting state of affairs, so I initiated a new course-related event last year: Colloquium. In this year’s Colloquia, four neuroscientists will visit campus. You will receive up to 10 points for attending these additional lectures and submitting 250-word summary I how it connects to lecture and/orlab.

1. On October 26, Dr. Ethan Graf (Postdoctoral Fellow, Washington University) will present a public seminar at Johnson 200, where he will discuss neurodevelopmental research on the topic: biochemistry of nitric oxide synthase, an important neuronal enzyme. I encourage as many of you as possible to host Dr. Graf for lunch at the cafeteria that afternoon.
2. During Brain Awareness Week (November 7-11), time/date/place TBA, a well-known neuroscientist (also TBA) will present a keynote address to the campus community.
3. During the semester, attend at least one of three neuroscience seminars in the Department of Cellular Pharmacology at Rosalind Franklin University this fall. This seminar schedule is provided for you.