Purpose of the Course:
This course will be a survey of key problems in ophthalmology and the frontiers in vision research, which will be explored from an interdisciplinary perspective. Clinical ophthalmology correlates will be be overviewed in conjunction with active research areas in macular degeneration, glaucoma, corneal injury, diabetes, congenital syndromes, cortical blindness, and other significant causes of blindness. This course will interface eye research in angiogenesis, devices (e.g., drug delivery, intraocular lenses, lasers, pressure control), signal transduction, neuroprotection, artificial vision (cortical prostheses), advanced imaging technologies, genetics, & immunology. A key objective of this class is to relate research efforts to the context & vital needs in the prevention & treatment of blindness.

Process of the Course:
The course will use weekly seminars supplemented by readings of selected journal articles, videos, case discussions, and general dialogue around the topics covered. Participants will get as much information and learning from the course as they are willing to invest. Opportunities for learning will be offered in both individual and group assignments. Guest speakers will be sharing detailed information from their fields, some of which may be proprietary in nature; discretion/confidentiality is needed.
**Structure of the Course:**

**Grading:**
- Class participation - 50%
- Written paper - 50%

**Assignments:**
**Written Paper:**
You are to prepare an individual written analysis for a topic in vision research and ophthalmology. This can be based on a lecture or an outside research publication or advance. You should write a review of the relevance of the issue to a clinical or fundamental basic science problem, discuss active research in this area, what remains to be done, and potential approaches to solving outstanding questions. This should be 6-8 pages (single-spaced) in length (12 point font, 1 inch margins), excluding references.

**Class Preparation and Participation:**
Everyone is expected to participate actively in class discussions, including case discussions. Participation will be evaluated on quality, e.g., relevance of contribution, appropriateness relative to flow of discussion, insightful comment or question. Attendance is thus important. However, participation points will not be given merely for showing up in class...you are expected to actively participate in discussion of the week's material.

**Final Exam**
Each speaker will be asked to provide 1 or 2 multiple-choice or short essay questions on the material covered in class. The last session of class will be the final exam.
DESB and University Policies:

Ethics and Plagiarism:
You must do your own work in this class. Plagiarism is against university standards. See Sections II and V of the Student code, which states in part, "In order to ensure that the highest standards of academic performance are promoted and supported at the University, students must ... adhere to generally accepted standards of academic honesty, including but not limited to refraining from cheating, plagiarizing, research misconduct, misrepresenting one’s work, and/or inappropriately collaborating.” For more details - http://www.sa.utah.edu/code.html.

The National Board of the Council of Writing Program Administrators: What is Plagiarism? In an instructional setting, plagiarism occurs when a writer deliberately uses someone else’s language, ideas, or other original (not common-knowledge) material without acknowledging its sources.

Americans with Disabilities Act:
The University of Utah David Eccles School of Business seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the instructor and to the Center for Disability Services, http://disability.utah.edu/, 160 Olpin Union Building, 581-5020 (V/TDD) to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

Accommodation Policy:
The University's Accommodation Policy allows students to request a modification of class requirements if those requirements conflict with the students' sincerely held core beliefs. The burden is on the student to request the modification, and the instructor has full decision making power to deny or grant the request. In order to minimize the number of students making such requests, we suggest that faculty members do a thorough job of outlining course content in their syllabi. This includes listing all readings, movies, etc. that will be required of students during the semester. That way the students will have sufficient information from the beginning of the semester to decide whether or not the course contains any material that goes against their strongly held values. Faculty may also want to include a disclaimer similar to the following (but they are NOT required that you do so). "Some of the writings, lectures, films or presentations in this course include material that some students may find offensive. Please review the syllabus carefully to see if the course is one that you are committed to taking."

Special Health Circumstances:
Because of the possibility of a recurrence of an H1N1 outbreak this fall you are encouraged to follow the recommendations from health professionals for your wellbeing and that of your fellow students. Special arrangements for absences due to illness may be made. Students must notify me in advance if they are unable to attend class due to illness. Depending upon the class activities scheduled, an additional assignment can be completed to substitute for class participation points for a missed class. If a written assignment is due a night you must miss because of illness you can submit your assignment by e-mail to debra.scammon@business.utah.edu. It must be sent prior to the start time for class that day. Should any of our guest speakers or I become ill, the schedule of class topics may be revised and make-up days may be considered if necessary.
Neuroscience 6500/4550
Spring Semester 2010
Class Calendar

Overview; Ocular Anatomy/Physiology
Retinal Architecture & Imaging
Cortical Organization & Prostheses
Intraocular Lenses
Macular Degeneration: angiogenesis, inflammation, imaging, nutrition, drug delivery
Optic Neuropathies: Genetics/Imaging
Glaucoma
Corneal Wound Healing/Novel Glues & Polymers
Diabetic Retinopathy: Leakage & Angiogenesis
Inherited Retinal Degenerations: Signal Transduction & Gene Therapy
Drug Delivery
Robotics & Fluidics
Ocular Immunology
Eye Development: Congenital Syndromes & Development Problems

Ambati/Olson
Marc & Jones
Warner & Greger
Mamalis/Werner
Bernstein/Fu/Hageman
Katz/Vetter
Goldsmith/Krizaj
Ambati/Stewart
Dean Li
Baehr/Yang
Grainger/Hitchcock/Ambati
Abbott/Gale
Vitale/Tian
Dries/Levine/Fuhrmann