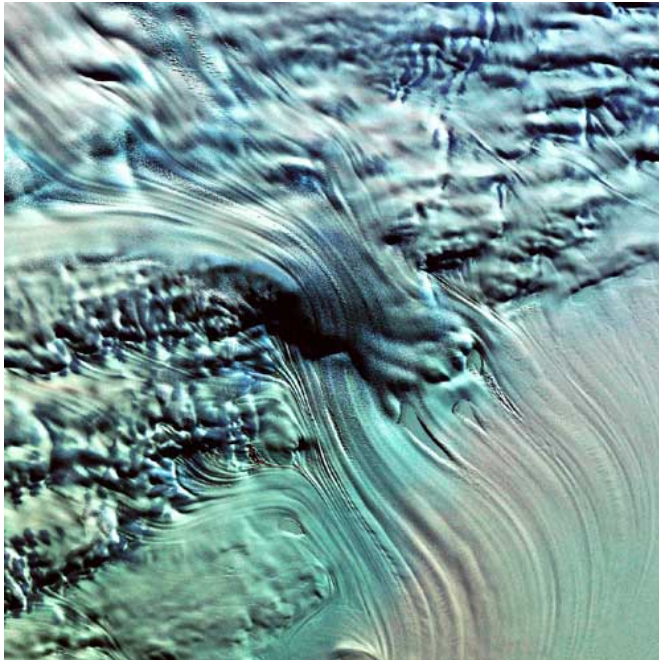


GeoSci 563: GLACIAL GEOLOGY

Fall, 2006



Lectures Tu Th 9:30-10:45 AM
Morrill 4N Room 161,
Spire#73420

Lab Tuesdays 2:30 - 5:30 or 6 PM
Morrill 4N Room 161,
Spire#73421

Instructor: Julie Brigham-Grette
Professor

Office: Phone: 413-545-4840
Email: juliebg@geo.umass.edu

Office Hours: Mondays 2-3 PM
Thursdays 1:30-3 PM or
By appointment anytime

Required Textbooks: Doug Benn and David Evans, 1998, *Glaciers and Glaciation*. Arnold Press. 734 pages. Price: \$60.
Available UMass Text Book Annex.

Required Field Guide: Field Conference Guide Book, June 2-4, 2000 "New Drainage History for Glacial Lake Hitchcock", 63rd Annual Friends of the Pleistocene Meeting. UMass Department Publication No. 73, 125 pages. Brigham-Grette, J. Editor, 2000. Available soon, from JB& for \$9; checks to the Dept of Geosciences.

Suggested Purchase: You might want to get yourself a 1 inch (or greater) three-ring binder for all of the handouts and lab materials you will get over the semester. This is a good way to organize yourself.

Grading:	2 Hourly Pyramid exams	= 20% (10% each)
	1 Final Pyramid Exam	= 25% (comprehensive)
	Labs/In-class Exercises	= 40% (No Lab Final)
	Term Paper and Presentation	= 15%

Term papers may be on any aspect related to glaciology or glacial geology (i.e., landform genesis, mapping and field interpretation, stratigraphy, hydrogeologic studies, paleoclimate, etc). Especially if you are a graduate student, I suggest you do something relevant to your research that is problem oriented, perhaps this could develop into a chapter of your thesis with the permission of your advisor. Literature review papers will be restricted to undergraduates, if possible. I strongly encourage creativity, work with maps, air photos, remote sensing, use and interpretation of real data from databanks like the NGDC (<http://www.ngdc.noaa.gov/paleo/>) or the National Snow and Ice Data Center (<http://www-inside.colorado.edu/index.html>). **Mandatory Paper outlines are due Oct. 26th.** Need help with your writing? Typed papers not longer than 10 pages, double-spaced, submitted by Nov. 17th will be text edited *at no penalty* and returned for revision well ahead of the **Dec. 12th DEADLINE**. No late papers; Get on it early! I will prod you if you need it; you can also prod me if I need it.

At the end of the semester during lab, everyone is expected to give a short 10-12 minute presentation on a term paper. This is an opportunity to practice your skills at presenting scientific material in a concise way. No matter where you go or

what you do after UMass, when you apply for a job, you will first be asked about your writing skills, communication skills and whether you can think independently. Now is the time to work on writing, speaking and *powerpoint* skills among friends; the biggest factor is self confidence! By December we will all be good friends; it should be fun and a good way to learn what everyone else has been working on.

IN-CLASS SCHEDULE



- **NB:** Readings listed here to the right are required and will be discussed in class. Note that in addition to these, a few journal readings may be on Reserve in Room 254 on the honor system; a few references you'll have to dig out yourself. I will also send you pdfs on occasion.
- I expect everyone to come to class. If you must miss class or a lab due to illness, doctor appointment, or a family emergency, please let me know by phone or email so that we can arrange for you to get handouts, notes etc. Some labs are easy to make up; others are not.
- You must be prepared for "Sediment of the Week" - nearly every Thursday. You might get the black dot!!
- I am active at a national and international level in research related to the Quaternary sciences and I will bring this research into the classroom and share my excitement for what I do. On the other hand, I will have travel at various times throughout the semester and will do my best to let you know in advance of any changes. The schedule below reflects my efforts to ensure you will enjoy the class. Please note that I will be in Russia Sept. 19-24? and then in Victoria BC and Mendoza, Sept. 27-Oct. 9. Reading, assignments and guest lectures will fill in.

Date	Topic	Readings (pages in Benn and Evans)
Th 7 Sept.	Introduction/Planning	
Tu 12 Sept.	Glacial systems, New England history	1-13; Ridge review 2003
Th 14 Sept	Milankovitch & isotopes in glacial history	1-13; 49-63; 90-93
Tu 19 Sept.	Ice properties; snow facies; thermal properties	66-74; 95-96 JBG in Russia
Th 21 Sept.	ELAs and Glacier Mass Balance	74-90, JBG in Russia
Tu 26 Sept.	Glacier Flow and Ice sheet Profiles	Chapter 4
Th 28 Sept.	The Role of Water; fluvial systems	Chapter 3 JBG in Victoria
Tu 3 Oct.	Subglacial erosion	178-210, JBG in Mendoza
Th 5 Oct.	Entrainment and Transport	Chapter 6, JBG in Mendoza
Tu 10 Oct.	Facies and Glacial Tills	378-399; 404-411
Th 12 Oct.	Facies and Tills cont	422-506
Tu 17 Oct.	Subglacial Sediment-Landform associations	Chapter 11
Th 19 Oct.	FIRST EXAM	

