EPS 118 Planning Meeting: March 11, 11:30 to 12:30 in Room 325

Yellowstone Earthquake swarm Jan 2010

http://volcanoes.usgs.gov/volcanoes/ Yellowstone_plateau/earthquakes
Web Site:  
http://eps.berkeley.edu/~brimhall/eps118/Website_EPS_118.htm  
Login: eps118    Password: wiser4

Dates

Intent and level of the course
Travel arrangements
Location and working conditions (storms, elev.+ wind)
Geological activities
Accommodations
Supplies and equipment to bring
Syllabus
Expectations
Applying for funding

Purchase from the Geological Society or America  
Special Paper 457 by Robert S. Hildebrand

“Did westward subduction cause Cretaceous-Tertiary orogeny in the North American Cordillera?” The GSA publications web site is:  
http://www.geosociety.org/pubs/  

Bring this volume to field camp- it is a new interpretation of the tectonic Evolution of western North America. Some of our field work will be focused on exploring the evidence and consequences of this new paradigm.
Dates:
**Reader** to be picked up **May 14th at Vic Copy**
Students fly from **Oakland** to **Butte** Montana on Thursday May 27th.

*Do not miss your flight!*

Return on Tuesday June 21st

Final report due Thursday June 24th 5 pm.

**Reports are expected to be on time as part of this course**

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**EPS 118 Advanced Field Geology**
- Advanced geological mapping
- Intensive field observation
- Field Geophysics
- Problem solving
- Scientific reports integrating diverse data

**Capstone** course for the geology major

Exposure to key **regional geological features**
- Rocky Mt Fold and Thrust Belt, Glacier Park, Yellowstone

Extend beyond a classroom understanding

Expectations are high for geological reasoning
Location

Blue = Miogeocline
Atlantic Style Passive Margin

Wind into the ancient continental crust

AAPG Litho-Tectonic Map
EPS 118 Advanced Summer Field Course

Stratigraphic Section of Rocky Mts (Atlantic style margin)
Paleo-depositional environments and Paleo-oceanography
Archean and Proterozoic PreCambrian basement
Laramide Regional Geology and Tectonics
Glacial geology and **Glacier Park**
Regional Geophysics (Seismic and Gravity) Prof Dreger
Regional Crustal Thickness
**Yellowstone** Hotspot
Cu and Mo Mineral Deposits and environmental geochemistry
Most northerly Basin & Range Extension

Pioneer Mts
Mapped only at reconnaissance level

Mapping under tree cover using DGPS as topographic maps provide too little control
Isostatic Gravity

Bouguer Gravity

Aeromagnetics

Yellowstone Park
Crustal Evolution

Stratigraphic column and Paleo-environments
- Yellowstone volcanics
- Columbia River basalt province
- Magmatic Arc (Butte Pioneer and Boulder Batholiths)
- Miogeoclinal Sediments (Cambrian to Cretaceous)
- Metamorphic basement (Archean through Late Proterozoic)

Regional Structural and Tectonic Evolution
- Magmatic Arc
- Cordilleran Fold and Thrust Belt
  - Medicine Lodge Thrust Plate
  - Grasshopper Thrust Plate
- Frontal Thrust Belt
Daily Routine
7:00 am Breakfast (served on time and only once)

7:30 Make bag lunches, load gear in vehicles

8:00 Classroom “Rounds”

8:30 Depart for the field

4:30 pm Meet at Vehicles to drive to camp

5:30 Snacks and cold drinks

6:00 Dinner

7:00 Evening Lecture or Quiz

8:00 Reading & chores
Each morning starts with “Rounds” Review of the mapping by each team, critiques, planning

Supplies:

Rock hammer, hand lens, writing tablet, **mapping vest, with inside pockets for pen tablet PC**
Not a fishing vest! See Miners Catalog Field Apparel
Field note book (new), Pocket first aid kit, mosquito repellent with DEET
Well-worn in field boots (not shoes)
**Sleeping bag** for temperatures down to **25 degrees F**
Foam pad or air mattress, Tarp (5 by 7 feet)
1 or 2 people may want a small tent (set up in the sage brush),

**Clothing**
- Sturdy pants
- Shirts
- Shorts
- Hat or cap
- Knit cap for cold days and nights
- Coat
- Socks
- Underwear, fleece lined sweat pants and shirt
- Swim Suit (for hot springs)
- Rain coat and rain pants
- Shower sandals and bathrobe
- Comfortable evening wear shoes or slippers

**Personal**
- **Camera**
- Toilet kit (tooth brush, tooth paste, hand soap, **soap dish**, wash cloth, shampoo, **towel- no Pink Eyes!**)  
  All students use bunkhouse bathroom with shower  
  5 minute Time limit on showers (save energy and water)
- **Pillow**, sunscreen, bandanna, wrist watch, alarm
- Chapstick and hand lotion
- Laundry bag (laundry is done in Butte the night before a Day off)
Safety in the Field

GPS-based Locator Grid used in Self-reporting of positions when broadcasting on GMRS radios daisy chain every 2 hours.

Report of approaching lightning strikes by GMRS radios

Required Class 2 (ANSI) Visibility Requirements

External DGPS Antenna

Pen tablet in inside pocket

Develop of culture of:

Safety First

Respect for people, time, equipment, opportunity of future students

Collaboration

Professionalism

Belief that geological reasoning and facts are important

Decisions made based on mapping may involve lives and fortune: earthquake hazards, volcanoes, mines, landfills, …

Serious, exciting, real geo-scientific work
Note: On Days off, students must reach a decision about a plan to use the 1 SUV and be back by 11 pm ready for work the next morning with a full gas tank. Negotiation is essential—Nobody stays in camp.

Mailing address: P.O. Box 14, Wise River Montana 59762-0014

Daily Chore details assigned later (cleaning bathrooms, bunkhouse, kitchen, vehicles, drivers, …)

Print & Sign required Consent Form (Liability Release) on the website

Required Consent Form
Required Emergency Data
Dietary Restrictions

Return all 3 signed forms to George Brimhall by May 1

Personal Conduct Code: No substance abuse, Paying attention, being on time, be a contributory member of a class

Financial Details
Ramsden Funds
Airplane reservations
Reader: Pick up Weds. May 14th at Vic Copy Hearst and Euclid
Course Material fee covers transportation costs of vans
Questions