

# 2005 COLUMBIA PLATEAU FIELD COURSE

Sponsored by the Department of Geosciences and the  
Department of Soil Science,  
North Dakota State University - Fargo

*With special thanks to Ms. Debra Alexander, Dr. Stephen Reidel, Dr. William Rember, and many others for helping to make it happen.*



## 2005 PARTICIPANTS

### **NDSU Students**

Justin Costa Rica  
Stephanie Costa Rica  
Roark Franklund  
Kelly Gorz  
Patrick Kilzer  
Nicholas Low  
Abigail Marohl  
Grant Neuharth  
Reuben Panchol  
Andrew Podoll  
Nicholas Schlagel  
Scott Steinberger  
Jennifer Thorstad  
Sheldon Tuscherer  
Cody VanderBusch  
Daniel Weihrauch  
Chad Weisenburger  
Carrie Wirth  
Michael Wright

### **Visitors and Friends of NDSU**

Daniel Cowan, Winnipeg  
Hugh Cowan, Fargo  
Ray Sterner, Johns Hopkins University  
Ronald Thorsrud, Twin Valley, Minn.  
Alan White, NDSU

### **NDSU Faculty**

Donald Schwert, Dept. of Geosciences  
David Hopkins, Dept. of Soil Science

## PRELIMINARY ITINERARY AND PROJECTED PRESENTATION SCHEDULE:

### **Saturday, March 12:**

- Depart from Amtrak Station, Fargo, 3:49 a.m.

### **Sunday, March 13:**

- Arrive at Spokane, 1:40 a.m.
- Overnight lodging (provided) at the Downtowner Hotel (2 block walk from train station). (Tel.: 509.838.4411)
- In late morning, get rental vans. Grocery shopping in Spokane.
- If time allows, travel to Latah Creek section, south of Spokane.
- Presentation by Michael Wright, Reuben Panchol, and Hugh Cowan on Glacial Lake Missoula.
- Travel southwest on I-90 to Sprague Exit. Turn south on Hwy 23 for about 12 miles.
- Presentation by David Hopkins on the dating of soils.
- Return to I-90, and continue southwest to Moses Lake. Turn south to Potholes State Park.
- Petrocalcics, dunes, volcanic ashes, and geomorphologic history of Moses Lake.
- Presentation by Justin Costa Rica on volcanic ashes of the Columbia Plateau.
- Return to I-90, and continue west to Vantage.
- Camp at KOA, Vantage, WA. (Showers).

### **Monday March 14:**

- Leave Vantage, traveling east on I-90 to George, then north on Hwy 281 to Quincy, and then west on Hwy 28 to Crescent Bar.
- Presentation by Daniel Weihrauch on sedimentological features associated with the Bretz Flood.
- Travel east to Soap Lake. Turn south on Hwy 17. Turn east toward "Fish Hatchery."
- Ephrata Fan. Presentation by Cody VanderBusch on the interest of NASA in the Channeled Scablands.
- Hwy 17 to Soap Lake. Turn east on Hwy 28 to Marlin. Megaripples along Crab Creek.
- Presentation by Donald Schwert on J Harlen Bretz.
- Hwy 28 west to w of Stratford. Turn north toward Summer Falls State Park, and continue north to Coulee City. Turn west on Hwy 17, and continue to Dry Falls State Park.
- Presentation by Nicholas Low on Dry Falls. Presentation by Ronald Thorsud on the nature of basalts.
- Travel southwest on Hwy 17 to region of Sun Lakes State Park. View Coulee Monocline.
- Presentation by Andrew Podoll on tectonic models for Columbia Plateau basalt eruptions.
- Return to KOA, Vantage, WA. (Showers).

### **Tuesday, March 15:**

- Regional geologic tour with Dr. Stephen Reidel, Pacific Northwest National Laboratory. We will also be joined by Debra Alexander (NDSU Geology alum), Senior Scientist, Groundwater Remediation Project, Hanford Site. Specific sites to be announced.
- Presentation by Grant Neuharth on the biogeography of the *Gingko*.
- Presentation by Chad Weisenburger on correlation of flows, Columbia River Basalt Group.
- Presentation by Abby Marohl on areal extent, thickness and volume of the Columbia River Basalt Group.
- Presentation by Roark Franklund on structural geology of the Yakima Fold Belt.
- Travel to Richland.
- Overnight in yard of Debra Alexander. Cookout and group social. Quick (!!!) showers. Please use your own towels, and leave Deb's house neat and orderly.

### **Wednesday, March 16:**

- Tour of U.S. Department of Energy Hanford Site (Alexander, Reidel, others).
- Presentation by Jennifer Thorstad on the Touchet Beds.
- If time allows, head southwest along the Columbia River to view Wallula Gap.
- Head northeast (routes to be determined) to Palouse Falls State Park.
- Presentation by Carrie Wirth on stream capture history of the Palouse River.
- Camp at Palouse Falls State Park. (Primitive camping. Noise restrictions apply, as usual).

### **Thursday, March 17:**

- Hwy 261 north to Hwy 260. Turn east, traveling to Washtucna. Turn east, travel to Hooper.
- Presentation by Nicholas Schlagel on loess deposits of the Palouse.
- Presentation by Donald Schwert on lemniscate landforms associated with catastrophic flooding, Washington State and North Dakota.
- Travel west on Hwy 26 to Washtucna. Turn southwest on Hwy 260 to Kahlotus. Turn south on Hwy 263 to Lower Monumental Dam.
- Megaripples along the Snake River.
- Return via Hwys 263, 260, and 261 to region of Palouse Falls State Park.
- Highway routes to be determined.
- Presentation by Sheldon Tuscherer on loess deposits of the Palouse.
- Presentation by Patrick Kilzer on "Volcanic Ash Land" soils.
- Travel on U.S. Hwy 12 to Lewiston, Idaho. Turn south and follow Snake River.
- Camp at Hells Gate State Park, 3 miles south of Lewiston, Idaho. (Primitive camping. Noise restrictions apply, as usual).

**Friday, March 18:**

- Regional geologic tour with Dr. William Rember, University of Idaho. Exact routes to be determined. If weather allows, sites will include the Eocene plant fossil and garnet collection locations at Clarkia, Idaho.
- Presentation by Kelly Gorz on Lake Bonneville floods.
- Presentation by John Steinberger on transformation of basalts into soils.
- Presentation by Stefanie Costa Rica on the Clarkia fossil deposits.
- Return to Spokane in mid-evening. Clean vans, and return them to rental agency. Gather at Amtrak station. Course formally ends.

**Saturday, March 19:**

- Leave Spokane on Amtrak, 1:15 a.m.

**Sunday, March 20:**

- Arrive Fargo, 2:10 a.m.