Glaciology: Backcountry Citizen Science
Field Course Overview & Arrival Information
July 30 - August 3, 2015

Please read the entire information packet carefully. This information will help you plan and prepare for your course. If you have any further questions after you have read this packet, please call (907) 683-6432. We are here to help.

Activities
Do something exciting this summer! Join the National Park Service on one of Denali’s glaciers to collect meaningful data on how that glacier is changing. With Denali National Park Glaciologist Rob Burrows, we’ll hike to the headwaters of the Toklat River to one of the glaciers at its source. From our base camp at the toe of the glacier, we’ll spend two days on the ice learning about glaciers firsthand. Using a high precision GPS, we’ll map the glacier’s terminus position and ice surface elevations and then compare the data we collect with data collected in previous years. How is the glacier responding to climate change? Is ice loss accelerating on the Toklat Glaciers like many other glaciers in Alaska and around the world? Come help us find out!

Field Courses are active learning experiences. Participants must be capable backcountry hikers, in excellent fitness and health, and equipped for sudden changes in weather. Participants on this course will backpack and camp in the backcountry of Denali. Participants must be able to hike 12 miles with a full-sized backpack weighing up to 45 pounds of personal and group gear to our base camp. This hike will be cross country over uneven terrain (not on trails) and will likely include river crossings. During the subsequent two days, the group will venture from the base camp with day packs to the study areas. These field days will be spent on the glacier ice and terrain recently exposed by the retreating glacier. This terrain can have insecure footing, loose rocks, and steep and exposed slopes. Day hikes may include elevation gains of up to 3000 feet. Group will return from the base camp via the same 12 mile route on the final day. Participants must be in excellent physical condition and comfortable on difficult terrain with some steep and exposed slopes.

No previous glacier travel experience is necessary. We will train you on recognizing hazards and safe travel techniques around the terminus and lower portions of the glacier. Travel will only be on bare ice areas of the glacier that do not require "roping up", so the only technical equipment you need will be crampons and trekking poles. Please be assured that our first priority is safety for making decisions on this trip.
**Tentative Daily Schedule**
Schedules may be modified somewhat according to weather conditions and to fit the needs of the participants and instructor.

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Thursday</td>
<td>12:30 p.m. – 1:00 p.m.</td>
<td>Check-in at Murie Science and Learning Center</td>
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<td></td>
<td>1:00 p.m. – 4:00 p.m.</td>
<td>Introduction, backcountry orientation &amp; overview</td>
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<td>4:00 p.m. – 5:00 p.m.</td>
<td>Drive to the Field Camp</td>
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<td>6:00 p.m. – 8:00 p.m.</td>
<td>Dinner and evening discussions</td>
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<tr>
<td>Friday</td>
<td>8:00 a.m. – 9:00 a.m.</td>
<td>Prepare for &amp; depart for our backcountry camp</td>
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<td></td>
<td>9:00 a.m. – 6:00 p.m.</td>
<td>Hike to our backcountry camp spot</td>
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<td></td>
<td>6:00 p.m. – 8:00 p.m.</td>
<td>Set-up camp, dinner, evening discussions</td>
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<tr>
<td>Saturday</td>
<td>8:00 a.m. – 5:00 p.m.</td>
<td>Surveying &amp; data collection of study areas</td>
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<tr>
<td></td>
<td>6:00 p.m. – 8:00 p.m.</td>
<td>Dinner and evening discussions</td>
</tr>
<tr>
<td>Sunday</td>
<td>8:00 a.m. – 5:00 p.m.</td>
<td>Surveying &amp; data collection of study areas</td>
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<td></td>
<td>6:00 p.m. – 8:00 p.m.</td>
<td>Dinner and evening discussions</td>
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<tr>
<td>Monday</td>
<td>7:00 a.m. – 5:00 p.m.</td>
<td>Return hike and course conclusion</td>
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This course has an additional optional half day on Tuesday.

<table>
<thead>
<tr>
<th>Tuesday</th>
<th>Time</th>
<th>Activity</th>
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<td></td>
<td>8:00 a.m. – 8:30 a.m.</td>
<td>Continental Breakfast at the MSLC</td>
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<td></td>
<td>8:30 a.m – noon</td>
<td>Process data from the field</td>
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**Weather**
The entire course takes place outdoors and activities will continue rain or shine. Weather conditions are unpredictable in Denali. You must be prepared for a wide range of conditions. Temperatures can vary from below freezing to 80 degrees F. By mid-August we are more likely to have freezing temperatures at night near the glacier (although days and nights can be this cold any time of year). Mosquitoes and other biting insects can be numerous anytime during the summer. Be prepared with adequate warm clothing, a hooded rain jacket, and rain pants. Dressing in layers is recommended. Please review carefully the Clothing & Equipment List provided.

**Directions, Parking Area and Meeting Location**
The entrance to Denali National Park is located at Mile 237 of the George Parks Highway. Follow the Park Road for approximately 1 mile to a roundabout. The first turn off the roundabout is the Park Road. Follow it for 100 feet to the right turn into the Murie Science and Learning Center parking area. Please bring all gear that you’ll be backpacking with you into the Center. We will do a gear check and sort out group gear at our initial meeting. Before leaving for the field, vehicles will be moved to the Denali Visitor Center overnight parking area.
Arrival
Beginning at 12:30 p.m., an Alaska Geographic guide will greet you at the Center for check-in; your course begins at 1:00pm. Lunch will not be served on the first day.

Accommodations in Denali
The group will stay one night at the Murie Science and Learning Center Field Camp at the Teklanika River Campground at mile 29 of the Park Road. Our field camp is made up of six tent cabins, one large Yurt (a portable, covered, lattice-framed structure), and a small storage space for group gear. Up to four course participants share space in a tent cabin. Each tent cabin has two sets of bunk beds with foam mattresses and pillows. Each participant needs to provide their own sleeping bag and pillow case. There is no electricity, plumbing or any heated area, i.e., no hot water and no showers. The remainder of days and nights will be spent camping in the backcountry near the toe of the glacier.

For participants who opt to help process data on Tuesday morning, bunk space in a yurt will be provided Monday night at no charge. Please let us know in advance if you plan to participate on Tuesday and need accommodations Monday night.

Lodging accommodations before and following the course are your responsibility. We do not endorse or recommend any particular lodge, cabins, or campground. Links to many accommodations can be found on the local Chamber of Commerce website.

Meals
At the field camp, our simple yet hearty meals will be served family-style. At our backcountry camp, we will cook and eat in smaller ‘tent groups’. All meals are provided from dinner on Thursday to lunch on Monday. We have a limited ability to accommodate specific dietary requirements; therefore, please notify the MSLC several weeks before the course of any specific dietary needs or restrictions.

Your Denali Visit & Your Expectations
These courses are designed to immerse participants in a particular subject area. Course activities and destinations in the park are chosen to enhance learning rather than to focus on sightseeing. If you are interested in seeing more of the park, please add extra time into your itinerary either before or after the course. Exploration farther out the park road is available through the shuttle bus system. We particularly encourage first time visitors to plan for extra time, especially if this is a “once in a lifetime” trip. Visit www.nps.gov/dena for more information.
Cancellation Policy
Cancellations and/or substitutions that occur 60 days in advance of the course start date will be refunded the course fee, less a processing fee of $25 per space. For cancellations and/or substitutions within 60 days of the start date, the entire fee will be retained unless we can fill your space. Registration fees are not transferable to future years. If we have to cancel a course, your entire fee will be refunded. Refunds will be credited to the credit card used during the original transaction if less than 100 days since the original transaction. All other refunds will be made through a mailed check. Please contact our staff to process a refund. All membership purchases are non-refundable and non-transferable.

Insurance and Liability
Participants should have their own health and accident insurance. Also please consider travel insurance in case you have to cancel your trip due to illness or injury. All participants will be asked to read and sign Alaska Geographic’s risk form and complete the emergency contact and medical form. Please bring these forms with you to the check-in on the first day of the course. Please contact us if you have any questions or concerns.

Important Phone Numbers
General Course Information: 907-683-6432 or courses@murieslc.org
Emergency Contact: Program Director 907-683-6438 (or 907-699-6044)
Note: During the course participants will not have access to a phone or cell phone coverage.

Professional Development Credit
Optional professional development credit (2 credits) is available for this course. By choosing this option at the time of registration, you are officially pre-registered and pre-paid with the University of Alaska – Anchorage. A registration form will be sent to you prior to the course. Please fill it out and bring it with you on the first day of the course.

“Must Reading” Before the Course
1. Glacial Processes
2. The Life of a Glacier
3. Backcountry Travel in Denali National Park and Preserve

Additional Readings
3. Glacier Trends and response to climate in Denali National Park and Preserve
4. Glacier monitoring