

Visiting the NSF/UVM Community Cosmogenic Facility

Information and Tips

Overview

Welcome to the NSF/UVM Community Cosmogenic Facility. We are looking forward to having you visit, working with you, and sharing ideas. Below, we provide information that we hope you will find helpful. You can also refer to the lab's webpage, www.uvm.edu/cosmolab, and our visitor page www.uvm.edu/cosmolab/?Page=visitors.html. At the end of this document, you will find a list of the “ten commandments” that govern the lab's safety philosophy.

Checklist

For sample preparation visitors, there are several forms you need to fill out, several documents to sign, and safety trainings to complete. Please look carefully at the checklist for details. All of these items need to be completed on schedule in order for us to accommodate your visit.

Contact Information

Please feel free to get in touch with us with questions about your visit.

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Cleanliness

The Cosmogenic Nuclide Laboratory is a clean lab with filtered air and sealed doors. We make all efforts to maintain cleanliness in the laboratory and request that you do the same. Please make sure you are wearing clean clothing any time you will be entering the lab; do not wear clothing that has been in the field, the Rock Room, or any other dirty/dusty space. No street shoes are allowed in the lab; instead, you will leave your shoes at the door and wear a pair of dedicated lab shoes that we provide. Personal items such as coats, bags, laptops, etc., cannot enter the laboratory but can stay in the lab's office/meeting space.

Laboratory Facilities

The laboratory is located in room 305 of Delehanty Hall on UVM's Trinity Campus (the street address is 180 Colchester Ave in Burlington). To see a map, go to <http://www.uvm.edu/map/> and search for “Delehanty”. The lab is the large set of sliding glass doors in the northwest corner of the building on the third floor. The doors are electronically keyed, so you will not be able to enter when you first arrive; just give us a wave or ring the doorbell and we can come out.

Getting Here

University of Vermont can easily be reached by air (Burlington airport is BTV) or by car. If you fly into BTV, there are usually cabs waiting curbside that can take you to your destination. Uber can also be useful, depending on the time of day. Some hotels run free shuttles, so check with your hotel first.

Parking

Parking on UVM's campus is challenging, so we suggest you stay somewhere walking distance to the lab. If you do need to park, there are two-hour visitor parking meters both in front of and behind the building; make sure to only park at a meter explicitly designated for visitors and

download the smartphone app to pay for parking. We have also had visitors use Uber for their daily commute.

Accommodations

As mentioned above, your visit will be easiest if you stay walking distance to campus. The closest hotel is the Doubletree in Burlington; another nearby option is the Willard Street Inn. There are many options closer to downtown, which will provide better access to Burlington attractions and restaurants but are a slightly longer walk to campus. Additionally, you will find many apartments and rooms on AirBnb that are close to campus. If you will be visiting for a long duration, we suggest renting an AirBnb with a full kitchen.

Getting Around

The bus service in Burlington runs a free shuttle that goes up and down College Street (from the center of campus to the center of downtown). The bus is very easy and is a good transportation option if you prefer to stay in town or go in to town from campus for a meal. Visit www.rideGMT.com to find routes and schedules. There are also numerous other bus options available for travel around the Burlington area for a small fee.

Meals

There are wonderful food options in Burlington, ranging from healthy/local to artisan coffee to various ethnic cuisines. Tell us what you like and we can make some recommendations. For grocery store provisions, we recommend City Market (<https://www.citymarket.coop/>) if you stay downtown or Healthy Living Market (<https://healthylivingmarket.com/>) if you stay near the highway. Both have salad bars, hot food bars, coffee, and full grocery stores, including prepared foods that may be useful for lunches. We have a microwave, fridge, and espresso machine that you are welcome to use.

Internet Access

UVM has a guest internet service that you can use at no charge. You can access the “UVM Guest” network and create a guest account on campus.

Attire

Any time you are in the lab, you will need to wear long pants. If you are working in the Rock Room or Mineral Separation Laboratory, you will also need close-toed shoes (in the Cosmogenic Laboratory, you will wear dedicated lab shoes that we will provide, so bring socks). We will provide eye protection, gloves, coats, smocks, and face shields as needed for any hazardous work or observation of hazardous work. The lab is often chilly, so we recommend bringing a sweatshirt or fleece as well.

Schedule

In general, we follow a regular weekly schedule for Be/Al extraction. Although there are occasionally deviations due to holidays, travel, etc., you can expect the following (assuming digestion of samples the preceding week):

Monday: Remove aliquots for ICP quantification of Be/Al, evaporate off HF

Tuesday: Perchloric acid treatments and ICP analysis of aliquots

Wednesday: Chloride conversions and anion column chromatography for Fe removal

Thursday: Sulfate conversions and cation column chromatography for B/Ti removal and separation of Be/Al

Friday: Redissolution, removal of aliquots for quality control analysis on the ICP, and final precipitation

Your Productivity

Whether you are conducting your own hands-on work or just observing sample preparation, there will likely be periods of free time in between procedures. We suggest bringing your laptop and something to work on to occupy yourself during these breaks. You can store your laptop in the office inside the laboratory, which is secure and accessible only to our research group.

TEN COMMANDMENTS OF THE NSF/UVM COMMUNITY COSMOGENIC FACILITY

1.) Safety is always top priority

Approach all of your lab work with this in mind! Understand the safety features of the lab and know how to use them, and know what to do in an emergency. Make sure you are totally comfortable with a procedure before you attempt it. Never perform high-hazard parts of the method when you are alone.

2.) Protect yourself

Always wear appropriate protection when working in the lab. For high-hazard acids (HF and Perchloric) this means wearing a smock, two pairs of gloves, goggles, and a face shield. Never touch anything in the hood without gloves, and always wear goggles when you are anywhere near active lab work, even if you are just watching. Never have bare skin showing between your smock and gloves when handling acids.

3.) Handle acid with care

Always use and store acid in an appropriate ventilated space, never on the countertops. Prepare for spills by using a spill tray and having wipes nearby. Exercise extreme caution when measuring and mixing acids; add acid to water, and only mix solutions that are described in the lab manual. Wash everything well before taking it out of the hood.

4.) Practice appropriate hood etiquette

Hoods should be used for working, not storage. Never place anything on top of the ventilation grates since it will compromise the hood's ability to protect you from acid fumes. Leave the hoods clean and empty when you finish working; pull down the sash fully and turn out the lights.

5.) Label, label, label

This is to protect yourself and others! Make sure that all containers of liquid are clearly labeled. Always use the white boards, hood labels, and unattended operation door signs to alert others about what procedures are taking place.

6.) Be clean

Both the meteoric and in situ labs are isotopic clean rooms. Be paranoid! Nothing (except yourself) should be in the lab except what is already there. Don't go in the lab if you are dirty from field or construction activities. Any surface that is in contact with a sample should be touched with acid-washed surfaces only (i.e. no fingers). Clean all labware and hoods regularly and thoroughly.

7.) Keep green, blue, and yellow separate

Green items are for the meteoric lab, blue items are for the high-level side of the in situ lab, and yellow items are for the low-level side of the in situ lab. This is to minimize cross-contamination. No exceptions! Keep these items stored separately and wash them in their own wash bottles.

8.) Plan ahead

Before you begin a procedure, think about what materials you will need and how long it will take. Do you have all the necessary pieces? Are they out and easily accessible? Do you have enough time to complete the procedure without rushing? Do you know what you need to do?

9.) Slow Down

You should conduct yourself in a careful, deliberate fashion the entire time you are in the lab. Do not rush or take short cuts, since it will compromise your safety and the integrity of your samples. Take the time to double-check yourself on every step.

10.) Leave spaces neater than you found them

This is a shared lab facility. Clean up any spills immediately, put everything back in its place, and wash used labware in a timely fashion. Try to leave all spaces, including the write-up room, how you would like to find them left for you.