



# Foundation for Glacier and Environmental Research

## *Juneau Icefield Research Program*

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### 2019 Gear List - Faculty

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This is the list of required, optional, and prohibited equipment for the JIRP 2019 field season. If you are new to hiking, backpacking, skiing, mountaineering, or working in Southeast Alaska, this list may be overwhelming at first. All this information is meant to guide you, but it can be a lot to digest all at once. Read through it carefully several times. Then, break it into pieces and starting by looking around for what you already have. The skiing equipment will be easier to find the sooner you start looking, so don't put that off. The clothing is almost all spring and summer appropriate, so there's no rush on those items. We've provided pictures of some speciality items and, in a couple places, detailed descriptions of what *not* to get. As always, please don't hesitate to reach out with any questions or concerns. It is far easier to refine your gear beforehand, at home, than during our relatively short and busy Juneau Week Orientation.

**Sticking to the list:** This list is based on many decades of experience with the particular requirements of the Juneau Icefield summer traverse. Please follow it closely. Outdoor equipment shops are a good source for gear and advice but be aware that salespeople unfamiliar with Southeast Alaska often underestimate the weather conditions we encounter. Use caution when considering recommendations from anyone unfamiliar with the region. If you already own equipment similar to what is described on this list and you are experienced using it, feel free to contact us before buying new equipment.

**Cost:** The items on this list can be very expensive if you purchase them at full retail price; we suggest looking for alternative options. Consider renting or borrowing equipment. If you have the time and access to a sewing machine, consider modifying or making your own gear. Also, consider whether you will participate in relevant outdoor activities outside JIRP. If you know you will, it may be worth the initial investment to purchase your own gear; if you're not sure yet if ski mountaineering is your favorite sport, cheaper workarounds will get you through this summer. Where appropriate we suggest lower cost alternatives. Be sure to check thrift stores and outdoor gear consignment shops for used options.

**Research:** There are many options for almost every item on this list. Do some online research before deciding what's right for you. There is a tremendous amount of information on everything from how specific clothing items fit to customer service at different companies. Google, google, google! Skiers and climbers share a lot of information on the internet.

**Weight:** Limit your gear (excluding skis, boots, crampons, and ice axe) to about 50 lbs/25 kg or less. For the most part, you will carry all your own gear across the icefield. There may be times when a few of your items can be transported between camps via snow machine or helicopter, but you should be prepared to carry it all yourself.

**Weather:** Dramatic weather changes can require quick changes between a light shirt, rain gear, and your warmest clothing all in one afternoon. Typical temperatures range between 40°F/4°C and 65°F/18°C, with extremes of 20°F/-7°C and 80°F/25°C. The wind is generally light to moderate, although we occasionally see gusts up to 70 mph/110 km/hr (fast enough that it's almost difficult to stand up). Rain and fog are more common than clear weather and can persist for days or even weeks. Snow and sleet are possible throughout the summer. **Waterproof gear gets extensive use and is critical to guarding against hypothermia.** Balancing the rain are many beautiful warm and sunny days. Especially towards the end of the summer, as we cross into the rain shadow of the Icefield, the weather is often clear and dry.

**Wear and tear:** Everything you bring will undergo significant wear and tear. Don't bring any irreplaceable, and make sure you're on the same page with anyone who is lending you gear.

**Juneau Gear Check:** Please note that except for items marked optional, all equipment listed here is required. Our staff will check every piece of equipment in Juneau, and you will not be allowed to go into the field without the right gear. Except for generic grocery store items (ex. sunscreen) it is usually difficult and expensive to procure these items quickly in Juneau; do your best to get exactly what this list describes before the program starts.

## Miscellaneous:

- Try all your equipment before arriving in Juneau. Make certain it fits and that used items aren't damaged.
- Mark your last name in large, legible print on everything you bring (including packs, boots, clothing, and skis). We are living in close quarters from the day you arrive, many people have the same gear, and unmarked items get confused and misplaced very easily. For some items (ie skis) it may make more sense to write on a piece of duct tape on the item.
- **Do not bring hard-sided suitcases.** They are too bulky for our storage facility. A soft sided duffel bag or small pack is much better and easier to store. Label all your luggage with your name. **Note: You may bring a ski bag.**
- The last page of this document is a checklist.

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## REQUIRED EQUIPMENT

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### PASSPORT (Block 4 only)

You must have a valid passport with an expiration date no earlier than December 31 of the year you will be on the Icefield. We will ski across the Juneau Icefield into Canada and will re-enter the United States going back to Juneau. If you do not yet have a passport, or if your current passport expires before December 31, start getting a new one by going to the post office ASAP- **this process is cheaper when you have plenty of time.** You must have your valid passport with you upon arrival in Juneau at the start of the program. We will collect passport information during the pre-season.

### VISA

If you are not a US citizen, you will need to acquire appropriate visas for the US and Canada. This is your responsibility. Check with the US State Department here: <http://travel.state.gov/content/visas/en/visit.html> and the Canadian Government here: <http://www.cic.gc.ca/english/visit/visas.asp>

### LARGE BACKPACK

Internal frame pack with a volume of 3660-4880 cu. in./60-80 liters. Make sure there are attachment points for an ice axe (a loop towards the bottom) and skis (see below). External frame packs, with a visible aluminum frame, are prohibited. The North Face, Lowe, Gregory, Black Diamond, and Osprey are a few well-respected pack brands.

Make sure your backpack harness (the part that sits against to your back and the shoulder/hip straps) fits your torso. This is particularly important if you are borrowing a pack; some harness are adjustable (beyond tightening the shoulder and hip straps) but some are not. Below are pictures of the common method of attaching skis to backpacks; please make sure your pack has appropriate horizontal straps on the sides. We will talk about how to pack a backpack properly in Juneau. REI has an excellent video on fitting a backpack here: <https://www.youtube.com/watch?v=0SGiGZlppMM>.



*Fig 1. Side view of skis strapped to backpack. Note backpack side straps for skis. These are not the recommended backpack or skis, but merely an illustration of the strap use.*



*Fig 2. Rear view of skis strapped to backpack (secured with a rubberised ski strap at the top)*

## **SKIS**

Medium-duty, full metal edge, waxless/pattern-base backcountry touring skis. For a full explanation, including pictures, please see the **Gear List Supplement**.

## **SKI BOOTS**

Medium-duty (three buckle) boots. We strongly recommend hard plastic boots over leather or soft synthetic materials because they keep your feet drier. For a full explanation, including pictures, please see the Gear List Supplement.

## **SKI BINDINGS**

Three-pin telemark bindings (strongly recommended), A/T tech, or Silvretta bindings. **These must match your ski boots.** For a full explanation, including pictures, please see the Gear List Supplement.

## **SKI LEASHES**

These attach you skis to your boots so you can take your boots out of your skis without losing the skis. If you have them, bring them. Otherwise we'll make cheap options in Juneau.

### SKI STRAP

One rubberized skis strap. This serves many purposes on the Icefield, especially when carrying your skis. Example to the right:



### SPARE BINDING PARTS

Six spare binding screws (everyone) and a spare cable (or two) for your bindings if your bindings have heel cables.

### SKI POLES

Adjustable length (preferred), metal (not fiberglass) ski poles for hiking and skiing. External flip locks hold up better than internal screw locks. If you have fixed length ski poles, they cannot be longer than the distance between the ground and your armpit. Consider bringing an extra set of baskets.

### ICE AXE

Mountaineering style. Lengths range from 50-65 cm, sized by height. Must have a “B” or “T” rating and a steel or chromoly shaft (no aluminum). **Ice axes designed for technical ice climbing and hybrid ski pole/ice axes (“whippets”) are prohibited.**



Example #1: Grivel G1+



Example #2: Black Diamond Raven

### CRAMPONS

Hinged (flexible) crampons made from chromoly steel or stainless steel, with either 10-points or 12-points, and with straps that fit your boots tightly. **Do not bring crampons made from aluminum or aluminum alloy**, these are not durable enough.

We recommend “strap style”. These can accommodate most hiking and ski boots because they use flexible rubber straps at the toe and heel (ex. 1 below). If you bring crampons with steel bails at the toe and heel, please be sure they fit both your ski boots and your hiking boots.



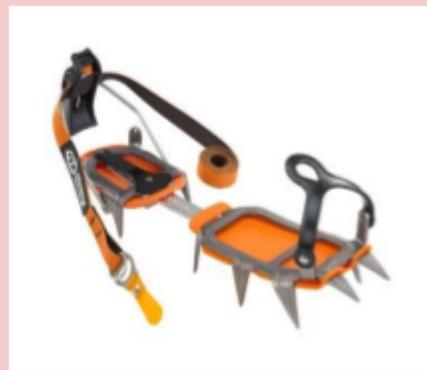
*Example 1: Grivel G-10, strap-style, 10-point mountaineering crampons.*

### THE FOLLOWING TYPES OF CRAMPONS MAY NOT FIT HIKING BOOTS

We do not allow “automatic” (steel wire bail at the toe and heel, ex. 2 below) or “semi-automatic” (steel wire bail at heel, rubber strap at toe, ex. 3 below) crampons. These are much more likely to cause fit issue with either your hiking boots or your ski boots.



*Ex #2: Automatic crampon*



*Ex #3: Semi-automatic crampon*

### EXTRA LONG CRAMPON BARS

Strap-style crampons are compatible with all boots. However, you need to check that your crampons are the right size for both your ski boots and your hiking boots. If your crampons do not fit both your hiking boots and your ski boots, please purchase extra-long crampon bars through the manufacturer’s website. See the Gear List Supplement for fitting instructions.

## HIKING BOOTS

Above-the-ankle, medium-weight, with a vibram-type lug sole. You may be hiking on snow, ice, sharp frost-shattered rocks, mud, loose and unconsolidated rocks and gravel, and across several streams. We strongly recommend leather or soft synthetic hiking boots or light-duty mountaineering boots instead of hard plastic mountaineering boots because soft boots provide better flexibility and traction on rock. Asolo, La Sportiva, Merrell, Scarpa, and Vasque are some well-known and reputable brands, but there are many others. Some boots have built-in Gore-Tex liners – we recommend these to cope with the wet conditions. Boots have a long lifespan, used options are acceptable here but check to see if they need to be resoled or restitched. Boots should be large enough for two pairs of socks (thick socks and liner socks). **Work boots are prohibited because they do not provide adequate traction or support on rock.**



*Ex. 1: Danner Mountain Light II GTX*



*Ex. 2: Asolo TPS 520 GV*



*Ex. 3: Lowa Mountain Expert GTX*



*Ex. 4 LaSportiva Makalu*

## CLIMBING HARNESS

A climbing harness that has a belay loop, adjustable leg loops, and gear loops. Fully detachable leg loops are a nice feature to have because they make the harness easier to put on over boots. If you plan to use the harness for rock or ice climbing outside the program, waist belt and leg loop padding make the harness significantly more comfortable; for our traverse padding isn't required and harnesses without padding are more comfortable when wearing a backpack. The Black Diamond Couloir (ex. 1, not padded) and the Petzl Corax (ex. 2, padded) harnesses or similar are ideal. Make certain it is the correct size: both snug enough over just a t-shirt/thin pants and not too restrictive over several layers of warm clothing. If you can pull your harness down over your hips it is too big. More info on choosing an appropriate model and size here (the ski mountaineering option is best for JIRP, although any harness will work): <https://www.youtube.com/watch?v=MHV-mr2VD-0>. **Harnesses have a lifespan of about three - five years and knowing the history of the harness (how many falls it's had on it, how it's been stored, etc.) is important. Avoid hand-me-down harnesses.**



Ex. 1: Black Diamond Alpine Couloir (not padded)



Ex. 2: Petzl Corax harness (padded)

## CLIMBING HELMET

Climbing helmets are either hard plastic (ex. 1) or foam (ex. 2), both are acceptable. Hard plastic helmets are cheaper and far more durable, foam helmets are lighter and offer better ventilation for skiing in hot conditions (common at JIRP). JIRP has a number of hard plastic helmets to rent if you don't already own one. Helmets not rated for climbing (single-purpose ski helmets, bike helmets, etc.) are not acceptable. **If you bring your own foam helmet, pack it carefully. Rough handling of luggage has cracked foam helmets en route to JIRP.**



Ex.1: Petzl Elios, a hard plastic climbing helmet.



Ex. 2: Black Diamond Vapor, a foam climbing helmet.

At some camps there are **optional** recreational downhill ski opportunities (conditions permitting). The climbing helmets pictured here for mountaineering **are not certified** to protect you in a downhill skiing accident. If you want to engage in optional downhill skiing, we recommend you purchase a helmet that is certified for both mountaineering and skiing. Some popular options are the *Camp Pulse*, the *Mammut Alpine Rider*, the *Salomon Mtn Lab Helmet*, and the *Kong Kosmos*. If you choose to engage in recreational downhill skiing without an appropriate helmet, you do so at your own risk. At no point will JIRP activities require you to ski downhill fast enough to need a downhill ski helmet.

## CARABINERS

Four locking and five non-locking carabiners. Climbing carabiners come in two general types: locking and non-locking. The lock is a cylindrical jacket that twists up over the gate of the carabiner to stop it from opening accidentally. For locking carabiners we recommend one large, pear-shaped one and three standard size/shape ones, although any combination of shapes is acceptable. A good way to personalize your carabiners is to use colored duct tape or electrical tape on the side opposite the gate. **Carabiners must be designed and approved for climbing use.**

*Locking carabiner:  
(the bright blue piece is the lock)*



*Two types of non-locking carabiners,  
both are acceptable:*



## SLEEPING BAG

A sleeping bag rated down to at least +15° F to +20° F (-9° C to -6° C). Cold sleepers may prefer a bag rated down to 0° F/-18° C. Insulation may be down or synthetic. We strongly recommend a mummy shape because it optimizes efficiency, weight, and volume. If you bring a down bag, you will have to be careful to keep it dry. We also require compression stuff sack for your sleeping bag. It's important you are warm enough to sleep well - choose your sleeping bag carefully. Down bags have a long (10+ yr) lifespan, synthetic bags lose much of their insulative powers after 5-10 years; choose hand-me-downs carefully.

## SLEEPING PAD

A closed-cell foam or inflatable sleeping pad. It can be either full-length or  $\frac{3}{4}$ -length. Thermarest, Ridgerest, and REI all make good quality pads. If your pad is inflatable bring a small patch kit to repair punctures. For groups who will camping in tents on snow for extended periods of time, we recommend both a closed-cell foam pad *and* an inflatable pad.

## **TARP / GROUND SHEET**

A large 8 ft. x 10 ft. (2.5m x 3m) blue poly or coated nylon tarp is required for constructing bivouac shelters or covering packs outside the tent at trail camps. These can be found at the hardware store. Tent "footprints" are lighter, may be purchased cheaply, and work well. **The metallic "space blanket" emergency type tarps are not durable enough.**

## **LARGE, HEAVY DUTY DRY BAG OR STUFF SACK**

About 10" x 30" (approx. 1,800 in<sup>3</sup> or 30 liters). This is to transport personal items between camps by snow machine or helicopter. A heavy duty marine/boating-type dry bag is strongly recommended as this bag will be outside in wet weather for several days at a time.

## **SMALL-MED STUFF SACKS**

Four-six smaller (~3-10 L) stuff sacks to organize gear, both in camp and on the trail. For organization in camp, non-waterproof nylon stuff sacks are good. For use on the trail, many people use backpacking-weight "dry sacks" (lighter weight than marine/boating "dry bags"). **Do not bring marine/boating type dry bags for these items, they are too bulky.**

## **UTILITY CORD/PARACHUTE CORD (P-CORD)**

50 ft./15m of parachute cord ("p-cord") or utility cord for miscellaneous, *non-mountaineering* use. This cord should not be more than 4mm in diameter. You can get this at the hardware store.

## **CORDELETTE / PERLON CORD**

50 ft./15m of 6 mm diameter perlon cordelette. Larger or smaller diameter are not acceptable. *This cord is used for mountaineering, you should buy it at a store that sells climbing equipment.* **This item has a lifespan of about five years; beware hand-me-downs.**

## **TUBULAR NYLON WEBBING**

One piece of tubular webbing, 1 inch wide and 8 ft long. *This webbing is used for mountaineering, you should buy it at a store that sells climbing equipment.* **This item has a lifespan of about five years, beware hand-me-downs.**

## **DYNEEMA SLING**

One 120 cm long, 8-11mm wide dyneema sling. *This webbing is used for mountaineering, you should buy it at a store that sells climbing equipment.* **This item has a lifespan of about five years, beware hand-me-downs.**

## **PLASTIC BAGS**

Five large trash bags and four-six ziploc bags. Large trash compactor bags are ideal, but 30-33 gal. standard garbage bags are acceptable. Consider saving the free, heavy-duty plastic bags that many airlines put your backpack in. Additionally, bring four to six smaller (qt or gallon) ziploc bags to protect individual items from moisture.

## **CUP & SPOON**

12-16 oz. cup and metal or lexan spoon or spork for trail and camp use. A metal cup is preferred; in an emergency you can use it to melt snow for water. You do not need a fork or a dinner knife.

## **TUPPERWARE CONTAINER**

Large enough for a sandwich, helpful for keeping your sandwich from getting squished on the trail. Can be bought in Juneau.

## **POCKET KNIFE / LEATHERMAN-TYPE MULTI-TOOL**

Swiss Army, Leatherman or similar with scissors are recommended. The large blade should be at least 2" long. Miniature multi-tools are not sufficient. Leatherman-style in particular are useful because they have pliers.

## **HEADLAMP**

LED headlamp (not a flashlight). Bring one set of extra batteries.

## **WATER BOTTLE / BLADDER**

Two 1-1.5 qt/L water bottles. We recommend wide-mouth bottles, they are easier to fill than small-mouth bottles. Bladders (e.g. *Camelbak*) or insulated water bottles (e.g. *Hydroflask*) are popular and can be substituted for one bottle each.

## **COMPASS**

Basic orienteering compass. Being able to set the declination and including a mirror are useful features.

## **LIGHTERS**

Two lighters. These are not allowed in your checked luggage and can easily be bought in Juneau.

## **SMALL REPAIR KIT**

Thread, needles, tape, crazy glue, adhesive patch material (e.g. Tenacious Tape), etc. A large sewing needle and unwaxed dental floss are great for repairing burlier items like backpacks.

## **WATCH**

Waterproof and with an alarm.

## **MOUNTAINEERING SUNGLASSES - "GLACIER GLASSES"**

Two pairs, one specialized wrap-around and a backup that can be cheaper. Sunglasses are critical protection against snow blindness, which is a painful, debilitating, and dangerous sunburn on your cornea. You will wear your glacier glasses all day, every day. **We recommend sunglasses designed for mountaineering**, which are designed to be worn while exercising and fog up less, however wrap-around fishing glasses or dark safety glasses that provide 100% UV protection and block >90% visible light are also acceptable. Either way, they must be wrap-around or have some sort of side shield and sit flush to your face to protect from light reflected up off the snow. Polarization is not important; many mountaineers prefer non-polarized glasses because visible glare helps differentiate between snow conditions. Bring a case for each pair to protect them.

Your backup pair may be less specialized (cheaper) sunglasses as long as they provide 100% UV protection (most do, but please check) and high visible light protection. Many hardware stores have tinted safety glasses that work and are well less than \$50. Wrap around is good, but not critical (we can make stylish side-shields out of duct tape if need be).

**Note for people who require vision correction:** please factor this into your decision about sunglasses and consider these options:

1. Contacts: Many participants choose contacts because it simplifies the options for sunglasses. There are sufficient resources for handwashing, but we also recommend bringing a travel-size hand sanitizer.
2. Prescription sunglasses: Bring two high quality pairs, you're unlikely to be able to replace them mid-season.
3. Dark ski goggles over prescription glasses: This is often hot on warm days, so bring an anti-fogging spray, and a high quality back-up pair.



*Good examples of glacier glasses.*

#### **LIP BALM**

3-4 tubes with an SPF of 15 or higher.

#### **SUNSCREEN**

One 8-12 oz container of SPF 30 or higher and sweat resistant/80 min. If you burn easily, bring two bottles.

#### **DUCT TAPE**

One large roll, two inches wide, light-colored. It may sound like a lot, but we use duct tape to package and label large bags all the time and you will go through the whole roll well before the program ends. We write on this with the black permanent markers, so black-colored tape is no good. You can purchase this in Juneau.

#### **PERMANENT MARKER**

Black, permanent, wide tip. Sharpie "King size" are great.

## PERSONAL HYGIENE KIT

Personal hygiene beyond washing hands and brushing teeth takes on limited importance on the icefield. There is one shower at each camp for all 50+ people, most people shower once or twice during the traverse. We will talk during Juneau Week Orientation about keeping yourself healthy with limited showers opportunities (snow baths are popular).

### Required items (bring a two-month supply):

- Toothbrush
- Toothpaste
- Soap: biodegradable, used for both body and laundry (ex. Campsuds, Dr. Bronner's, or similar)
- Contact solution and case
- Dental floss
- Small hand sanitizer (you can refill in camp)
- Any medication you take regularly
- Prescription glasses or contacts (eight weeks), a back-up pair of glasses, and a copy of your prescription.
- Non-cotton camp towel (24" x 24"/ 60 cm x 60 cm or smaller)
- Feminine hygiene items: Bring enough for two months, plus extra for unanticipated cycle changes. Menstrual cups are popular; we will provide facilities for washing them. Tampon users: consider bringing applicator-less tampons to reduce waste, NatraCare and OB are good brands.

### Recommended items:

- Shampoo and conditioner (travel size)
- Lotion (3-6 oz container)
- Nail clippers
- Deodorant: opinions differ on deodorant in the field, we trust you to make your own decision.
- Wipes: pH balanced is important for people with female genitalia.

## FIRST AID KIT

You can purchase a pre-assembled kit at an outdoor equipment store but make sure it is designed for backcountry use and includes the required items. Re-package it in a dry sack or ziploc bags. \*Blister care items, consider bringing extra.

- 1 pr. rubber gloves
- 5-10 band-aids
- 2 rolls/sheets moleskin\*
- 2 pkgs Spenco 111 second skin\*
- 2 rolls cloth athletic tape\*
- 3 2x2 gauze pads
- 1 small tube antiseptic ointment
- 1 small bottle acetaminophen
- 1 small bottle ibuprofen

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## REQUIRED FIELD CLOTHING

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**General information:** There are a number of different technical materials on the market, boasting a wide range of characteristics both real and potentially aspirational. Most are acceptable and the choice comes down to personal preference. The exceptions to this are cotton and down: Cotton fibers absorb water and lose their insulative properties. Likewise, down collapses when wet, becomes a heavy, soggy mess, and loses all its insulative properties. We often work all day in the rain. We encourage you to bring an optional down jacket for camp (see the optional gear section) and a down sleeping bag, but none of your other clothing can be down or cotton.

### CAMP SHOES

Sneakers, crocs, or sports sandals (e.g. tevas or chacos) for wearing around camp. Sneakers have the best traction and are most comfortable when there's snow in camp. Crocs provide good ventilation for healing feet and protection for toes. Sports sandals provide good traction and ventilation but leave toes vulnerable to stubbing on rocks. **Flip flops and slides (ie birkenstocks) are prohibited.**

### LINER SOCKS

Two or three pairs of thin polypropylene, wool, or silk socks. Wearing liner socks under thicker socks is a good way to prevent blisters, so please bring them even if you're accustomed to hiking or skiing without them.

### MEDIUM-WEIGHT SOCKS

Three pairs of wool or wool/poly blend. We recommend styles that hit your calf well above your ski boots cuff. **No cotton.**

### UNDERWEAR

Three-five pairs are adequate, you will wash them often. Nylon or polyester are best because they dry quickly.

*People with female genitalia:* we recommend one additional pair of cotton underwear to wear at night to discourage yeast infections. We will discuss this further during a lesson on backcountry hygiene during orientation.

*People with male genitalia:* Many people prefer close-fitting styles to reduce chafing.

### SPORTS BRAS (if appropriate)

Medium impact. Three are adequate, you can wash them. Synthetic or wool. **No cotton.**

### LONG UNDERWEAR BOTTOMS

Two pairs of polypro, other synthetic, wool, or wool blend. You'll keep a dry pair in camp for the evening. We recommend one be lightweight and light-colored for hot days on the glacier; shorts alone are prohibited in crevasse zones, many people layer their long underwear under their shorts and black can be uncomfortably warm. **No cotton.**

## SHORTS

One pair, made of durable synthetic material. Useful for sunny days and to wear over your long underwear. Styles with longer inseams are more comfortable under harnesses and reduce the incidence of upper-thigh sunburn from sun reflected up off the snow. Do not bring blue-jean cutoffs, they take too long to dry and are heavy.

## FLEECE OR WOOL PANTS

One pair of fleece-type pants, heavier than long underwear bottoms. You may find a cheaper wool alternative at a thrift store, look for a midweight pair with a tight weave. Many people wear these around camp as sweatpants, so find a style you feel comfortable hanging out in.

## LIGHT SHIRTS

Two shirts, we recommend one short-sleeve and one long-sleeve. Synthetic or wool (**no 100% cotton**). You may replace the short-sleeve with a tank top, but beware chafing pack straps on bare shoulders. The long-sleeve doubles as a sun shirt (try to find a light color). Some companies make extra-protective options with hoods. Ex: *Columbia Tidal Tee Hoody*.

## LIGHTWEIGHT INSULATION TOP

Two long underwear-weight, long-sleeve fleece, wool, or polypro shirts or hoodies. You'll keep one dry in camp for the evening. Ex: *Patagonia R1* or *Smartwool 250 Base Layer*. Wool shirt technology has changed in the last two decades to be much softer, but old-school wool button-ups still work perfectly well if you can find a hand-me-down.

## MIDWEIGHT INSULATION TOP

Midweight long-sleeve fleece or wool pullover, zip-up, or hoody. Ex: *Mountain Hardwear Monkey Woman/Man* or *Patagonia Synchilla*. Basic fleece technology hasn't changed significantly in the last few decades and it's very durable, so hand-me-downs are great (a good soak in a washing machine with detergent and baking soda takes the edge off smelly fleece). Old school, durable wool sweaters are also good.

## HEAVYWEIGHT FLEECE, WOOL, OR SYNTHETIC FILL JACKET

Heavy-weight fleece jacket or mid-weight synthetic fill puffy jacket (**no down**). A hood is great but not required. This should be large enough to fit comfortably over both your lightweight and midweight insulation layers. Do not bring an expedition-weight down jacket with gore-tex outer, as this is overly bulky for the summer conditions on the icefield and the shell slows drying (it will get wet). Ex: *Black Diamond Access Hoody* or *L.L. Bean Primaloft Packaway Jacket*.

## RAIN JACKET AND RAIN PANTS

**The Juneau Icefield is often cold and wet for days or weeks. Get the best rain gear you can afford.  
You will appreciate quality here.**

Material should be durable, waterproof, and breathable. In our experience, the best rain jackets are made of either Gore-Tex or eVent. The second best options are Dry-Vent, Pertex, or Patagonia H2No. This is your outermost layer of clothing and is critical for protection from rain, cold, and wind. Brands such as Patagonia, The North Face, Arcteryx, Rab, Marmot, Outdoor Research, REI, EMS, and Mountain Hardwear are brands that produce reasonable quality rain gear. If your rain gear is old or you are borrowing rain gear, check the seams and strongly consider washing it with *Nikwax TechWash* and refreshing the DWR coating with *Nikwax TX.Direct Spray-On* or similar.

**Rain pants** should have side zippers so you can take them on and off over boots. Rain pants may be coated or rubberized nylon, but be aware they will be uncomfortably warm in some conditions.

**Rain jacket** must have a **hood that fits over your helmet** and should be large enough to fit over all your layers. **Ponchos are prohibited.**

### **BANDANA /BUFF**

One or two are sufficient.

### **BRIMMED HAT**

For rain and sun protection. Baseball hats work well, although wrap-around brims provide more protection.

### **WARM HAT**

Fleece or wool hat that covers your ears.

### **POLYPRO/WOOL LINER GLOVES**

Two pairs of lightweight, close-fitting polyester or wool liner gloves.

### **WOOL OR FLEECE GLOVES**

One pair of midweight fleece or wool gloves.

### **OVERMITTS/GLOVES**

One pair of waterproof shell overmitts or gloves. Mitts that are just shells (no insulation) are becoming harder to find, so an insulated mitt or glove that includes a waterproof shell will be adequate. The hardware store in Juneau sells an affordable rubber fishing glove that we strongly recommend.



### **GAITERS**

Shin height, XL size to fit over your ski boots (this will be tight, but it mostly works). These go over your boots and keep snow from getting in your boots. These also protect your pants/legs when walking in crampons.

### **“ATLIN BAG” (Block 4)**

You will leave a small bag in Juneau when we go into the field, and the logistics staff will drive it around to Atlin, B.C. where we come down off the Icefield and hang out for a couple days. Atlin is a small town where we will shower, do laundry, re-group, and present student research projects at the Rec Center. We encourage you to pack a small backpack or bag with soap, shampoo/conditioner, laundry detergent for 1-2 loads, 1-2 extra sets of casual street clothes, and (optionally) a pair of sandals for post-traverse blistered feet. Volume for these bags is very limited; we transport all 40-50 Atlin bags in a single (6-10 hr) trip in the van. You may not put snacks in here, food encourages mice during summer storage.

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## **OPTIONAL ITEMS**

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These items are useful and recommended based on your personal preference, but are not absolutely necessary.

### **EAR PLUGS**

You will be sleeping in close proximity to many others throughout the program. Many people snore, some quite loudly. Several pairs of compressible foam ear plugs can make all the difference when trying to sleep.

### **INSOLES**

Orthotic insoles (ex: *Superfeet* or *Sole*) are great for making both hiking and ski boots more comfortable. We strongly recommend them for everybody, but especially for people renting ski boots.

### **EXTRA PUFFY JACKET**

A lightweight down or synthetic puffy jacket or vest (that packs down well) is nice to have for cold nights sitting around camp. This is in addition to the fleece/insulated layers required above. We strongly recommend this, especially for people who “run cold”. Do not bring one with Gore-Tex shell, they are difficult to dry if they get wet. Note that down jacket technology hasn’t changed significantly in the last few decades. A hand-me-down or thrift store find, cleaned properly (google “how to wash down”), will work about as well as a several-hundred-dollar option purchased new.

### **BOOT WATERPROOFING**

If you use leather hiking boots and/or leather ski boots, waterproof your boots well before leaving home and bring at least one can/tube of Aqua Seal, Biwell, Nikwax, Snowseal, or an equivalent type of boot waterproofing to re-treat boots.

### **CAMERA**

Cameras independent of your cell phone are a good idea so your phone isn’t in the rain and getting banged around every day. It is best if the camera is waterproof/resistant. GoPros are extremely durable and terrific for strapping onto your helmet. If you bring your phone as a camera, look into getting a waterproof/drop-proof case for it. If you bring a nicer (DSLR) camera, a wide angle lens is great for capturing the immensity of the icefield and a polarizing filter can be helpful in reducing glare. **Mark your chargers with colored tape.**

### **BIVY BAG**

Bivy bags are basically waterproof sleeping bag shells. It is great to help keep your sleeping bag dry, especially if you bring a down sleeping bag. Do not bring bivy bags that use poles, these are too bulky. A bivy bag does not replace a tarp.

## BLISTER BARRIERS

Blisters can be a serious problem and are more likely to form if you have ill-fitting or borrowed footwear. Blisters can sideline people and have kept them in camp for several days. Everyone seems to have different suggestions for mitigating blisters, from duct tape to liner socks to *HikeGoo* or vaseline lubricant. Do some research and try different options during pre-season training to see what works for you. These two options are off the beaten path and many of our alumni swear by them:

1. LeukoTape. This stuff stays on the sweatiest feet for days when applied correctly. **Warning: this product can cause significant skin damage when removed incorrectly, even from otherwise intact skin. Never apply directly over blisters or damaged skin.** Peel it off **slowly** and parallel to the surface of the skin. Also, be cautious applying over body hair (ouch!). Available on amazon or from medical supply stores.



2. Blister Booties: eZee Hi Ankle Booties go on either over or under socks. Available on amazon or [ezeefitsports.com](http://ezeefitsports.com).



## BELT / SUSPENDERS

You will be hiking and skiing for long distances in your rain pants. If they do not stay up on their own, make sure that you have a method to keep your pants up. If you go with a belt, consider how it fits with your backpack hip belt.

## WINDBREAKER/ SOFTSHELL JACKET

This is for breezy, clear days. This is optional because a rain jacket also works as a windbreaker.

## SOFTSHELL PANTS

Great for anything except pouring rain. More breathable than rain pants and more durable than long underwear with shorts.

## LEATHER WORK GLOVES

For work around camp and some field work. Highly recommended to save some wear on expensive mountaineering gloves! Consider waterproofing if they're not suede

### **HEADPHONES**

A small, earbud style pair (not over the ears) for listening to music in your bunk. We have strict rules against headphone use in common areas and on the glacier for group dynamics and safety concerns, but many people like to jam out in their bunks before going to bed. Please bring corded ones if possible (without a separate battery), charging opportunities are limited.

### **PORTABLE SPEAKERS**

Waterproof, battery-operated, **no bigger than a grapefruit**. A few are enough for sharing. Charging opportunities are limited and priority goes to academic and research equipment.

### **ATC/BELAY DEVICE**

If you already own an ATC, you may bring it. Do not buy a new one or bring pickets, flukes, ice screws, or climbing ropes.

### **HANDHELD GPS**

If you already own one, know how to use it, and want to have it, then you may bring it. Do not buy a new one.

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## **DO NOT BRING**

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### **SOLAR PANELS**

These are unnecessary as there is ample time to charge small electronics at camp each day.

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## CHECKLIST

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### REQUIRED EQUIPMENT

- Passport (Block 4)
- Visa
- Large backpack
- Skis
- Ski boots
- Ski bindings
- Ski leashes
- Ski strap
- Spare binding parts
- Ski poles
- Ice axe
- Crampons
- Extra long bars
- Hiking boots
- Climbing harness
- Climbing helmet
- 4 x locking carabiners
- 5 x non-locking carabiners
- Sleeping bag
  - Compression sack
- Sleeping pad(s)
- Tarp
- Large dry bag/stuff sack
- 4-6 small-med stuff sacks
- 50'/15m utility cord/p-cord
- 50'/15m 6mm cordelette
- 8'/2.5m 1"/2.5cm webbing
- 120 cm dyneema sling
- 5 x trash bags
- 4-6 x qt/gal ziploc bags
- Cup
- Spoon/spork
- Tupperware
- Pocket knife/multi-tool
- Headlamp + extra batteries
- 2 x water bottles/bladder

- Compass
- 2 x lighters
- Repair kit
- Watch
- Glacier glasses
  - Back-up pair
- 3-4 tubes SPF lip balm
- Sunscreen
- Duct tape (a whole roll!)
- Permanent marker
- Personal hygiene kit
  - Biodegradable soap
  - Toothpaste
  - Toothbrush
  - Small towel
  - Feminine hygiene items
  - Contact solution
  - Personal medication
  - contacts/glasses
    - backup glasses
- First Aid Kit

### REQUIRED CLOTHING

- Camp shoes
- 2-3 prs liner socks
- 3 prs midweight socks
- 3-5 prs underwear
- 3 x sports bras
- 2 x long underwear bottom
- Shorts
- Fleece/wool pants
- 2 x light shirts
- 2 x lightweight insulation top
- Midweight insulation top
- Heavyweight insulation jacket
- Rain jacket
- Rain pants

- Bandana/buff
- Brimmed hat
- Warm hat
- 2 prs liner gloves
- Midweight gloves
- Overmitts/waterproof gloves
- Gaiters

### ATLIN BAG (Block 4)

- Small bag/daypack
- Shower supplies (soap, etc.)
- Laundry detergent
- 1-2 sets of street clothes
- Sandals (optional)

### OPTIONAL ITEMS

- Ear plugs
- Insoles
- Extra puffy jacket
- Boot waterproofing
- Camera
- Bivy bag
- Topographic maps
- Blister barriers
- Belt/suspenders
- Hand lens/rock hammer
- Windbreaker jacket
- Softshell pants
- Work gloves
- Headphones
- Small speakers
- ATC
- Handheld GPS