

# Welcome to *PolarConnect*



## Phenology and Vegetation in the Warming Arctic 2021

With PolarTREC Teacher Liza Backman

& Team Researchers Dr. Jeremy May and Sarah Ansbro

**June 15, 2021**

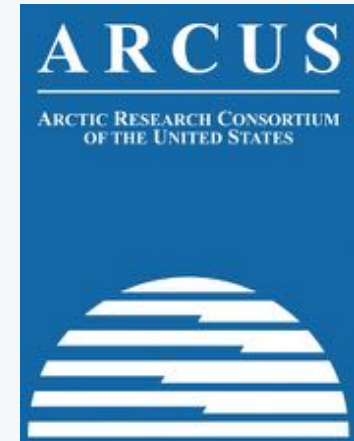
# Participant Introductions

**In the Chat box, please introduce yourself  
by typing in your:**

- ✓ Name
- ✓ School or Institution
- ✓ The number of students and adults participating with you in the same location

# What is PolarTREC?

- Since 2004, the Arctic Research Consortium of the United States (ARCUS), a non-profit organization, has been administering the PolarTREC Program.
- PolarTREC is professional development for U.S. middle and high school teachers and informal STEM educators. They are paired with researchers for 3-6 week research experiences in the polar regions.
- Over 150 educators from around the United States have joined scientists in the Arctic and Antarctica to learn about science, the polar regions, and to share what they have learned with their students and communities.



*25 Years of Connecting Arctic Research*  
[www.arcus.org](http://www.arcus.org)

# Questions

## During the Presentation:

- Type your question into the text chat box and we will insert your question when the right opportunity arises.
- Don't worry! If we haven't been able to ask your question during the presentation, we will save it for the end.
- At the end of the presentation, we often open the webinar up to family and friends who want to say "Hello" or have any last minute questions for the presenters.

**Liza Backman,  
Brooklyn Emerging  
Leaders Academy**



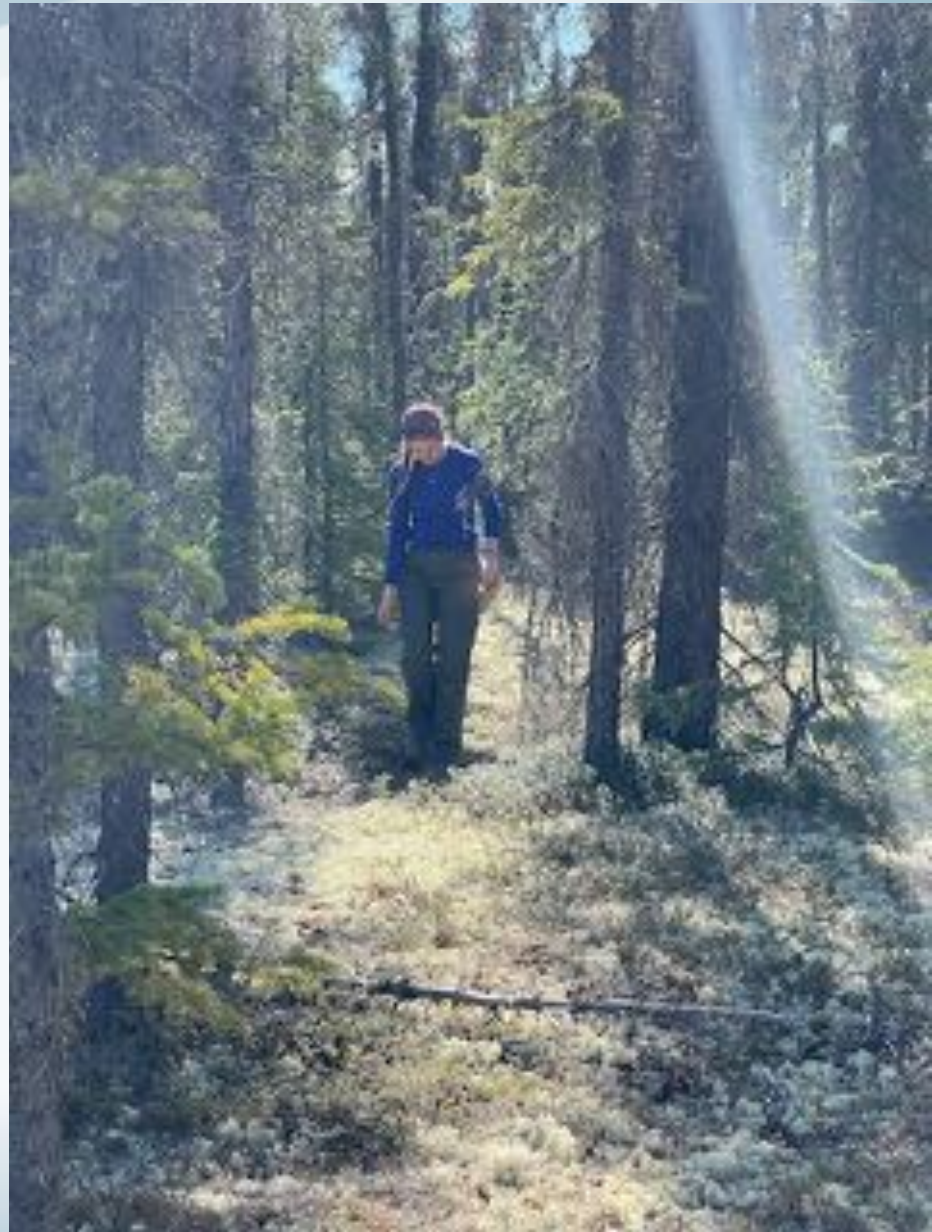
**Dr. Jeremy May,  
FIU**



**Dr. Steve  
Oberbauer, FIU**



**Sarah Ansbro,  
GVSU**



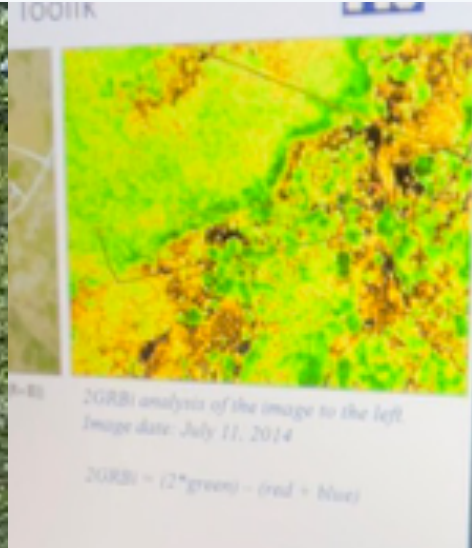


# The Journey Up Here!



Map Legend: Purple = Liza in NYC; Blue = Sarah + Jeremy in Michigan; Orange = Jeremy in Miami, Florida; Green = Fairbanks; Red Star = Toolik

# Quarantine



# The Dalton Highway



# Welcome to Toolik Field Station!

Run by  
University of  
Alaska  
Fairbanks

Houses a  
maximum of  
150 arctic  
researchers  
and staff  
(this year max  
~80)



# A Quick Tour around T-Town

## The Residential Area

- Dorms
- “Weatherports”
- The Health Club (a miniature gym!)



## The Work area

- Labs

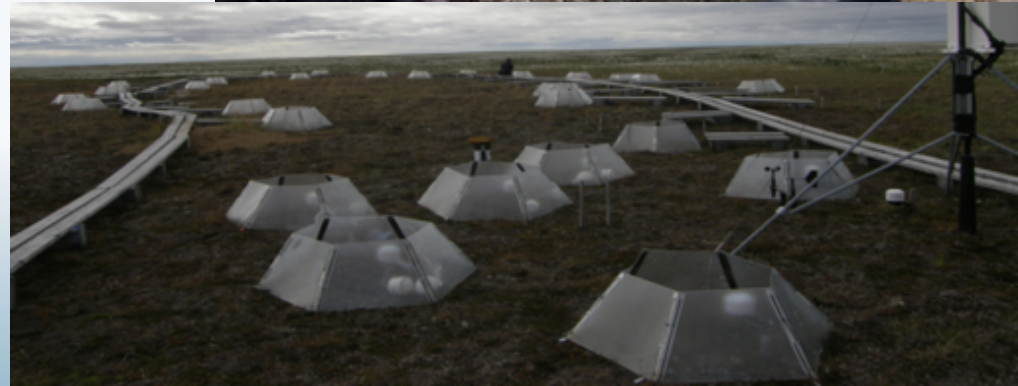
## The Middle

- The Dining Hall
- The Community Center

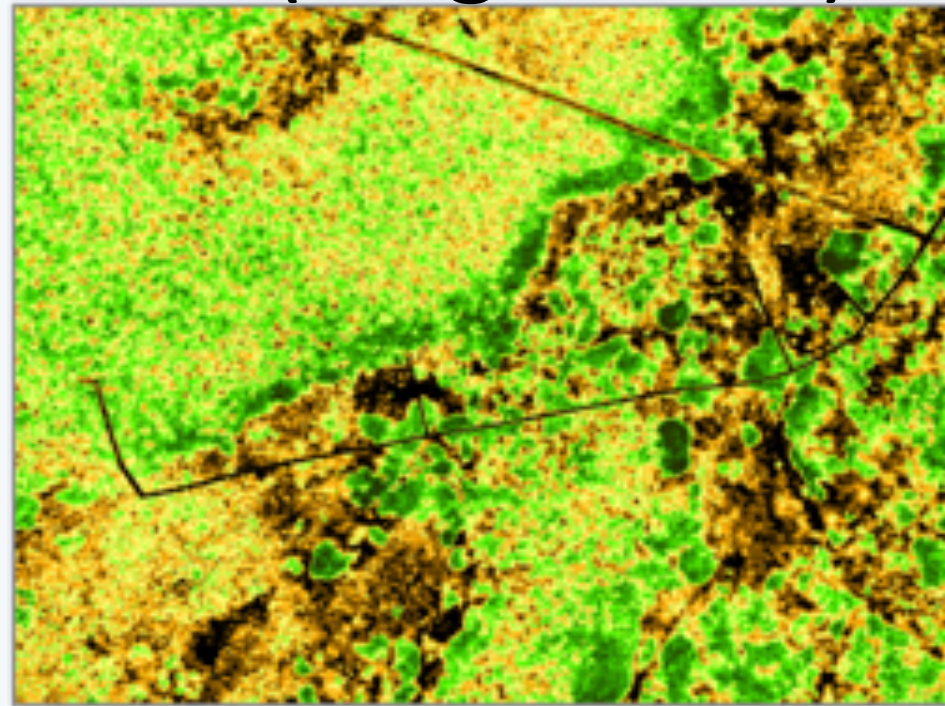


# Phenology (small scale)

- The science of “when”
- Monitor 8 species of interest and when...
  - Leaf/flower buds start forming
  - Leaf/flower buds start expanding or breaking
  - Flower buds start wilting
- Monitor the “greenness” both by eye (on a scale from 1-10) and by using a factor called NDVI
- Phenology is also monitored in OTCs (open top chambers) which heat the area by 2-3° mimicking the warming expected over the coming years



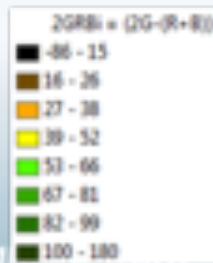
# Satellites and Drones (Large Scale)



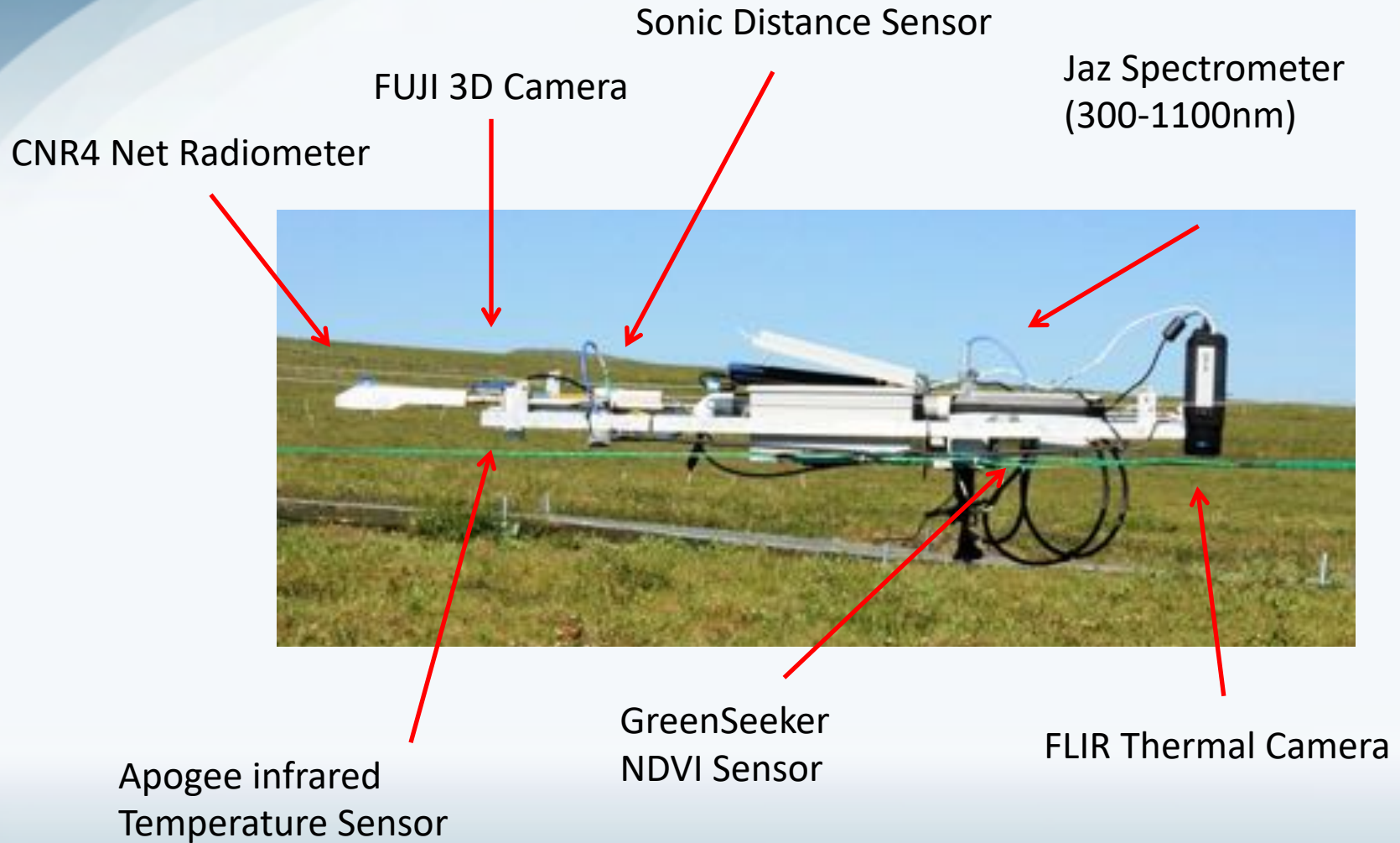
- Bigger Scale, much faster
- Try to do drone measurements/photos when possible
- But, how accurately does the big scale match the small scale?

*2GRBi analysis of the image to the left.  
Image date: July 11, 2014*

$$2GRBi = (2 * green) - (red + blue)$$

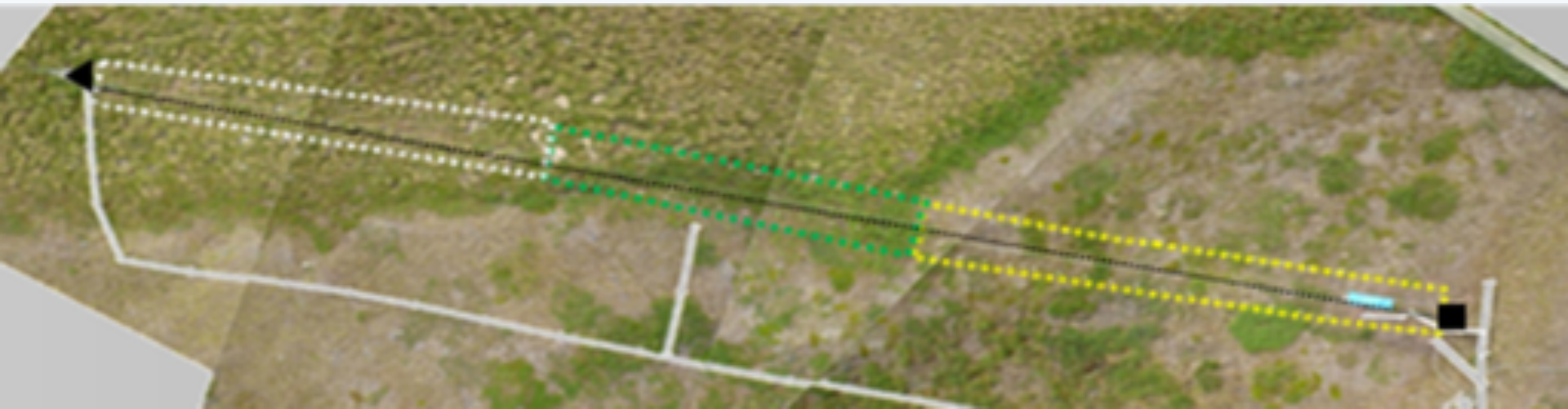
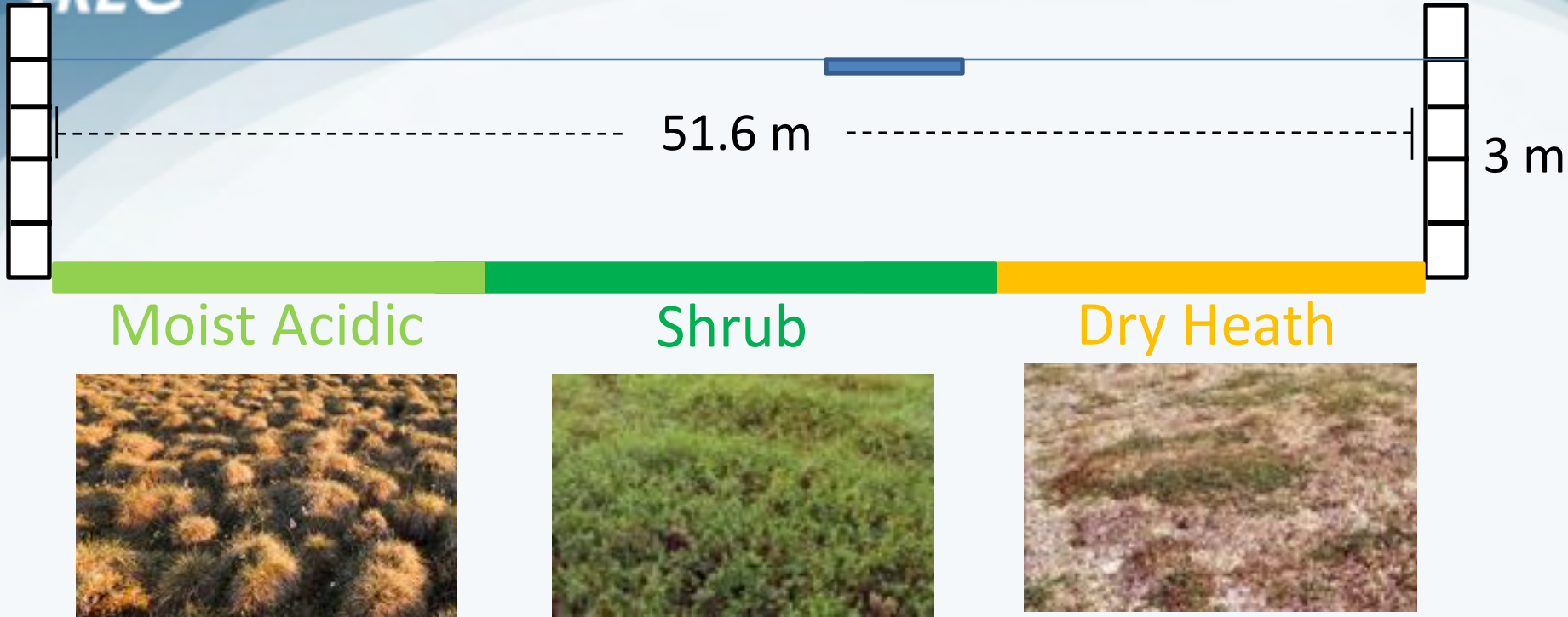


# The MISP (Middle Ground)





# Toolik Lake Transect



# MISP Transects

Atqasuk, Alaska

Barrow, Alaska

Imnaviat Creek, Alaska

Toolik Lake, Alaska



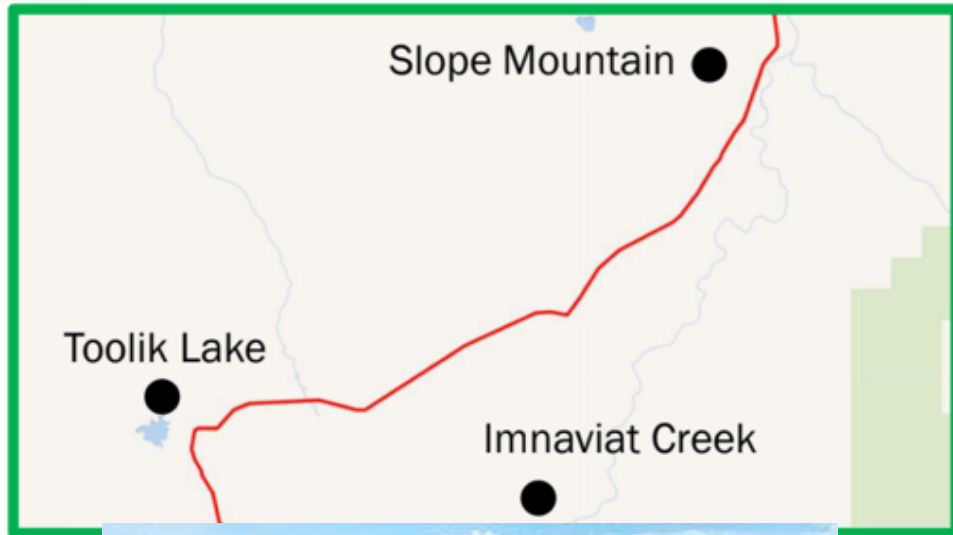
# Set-Up of the MISP



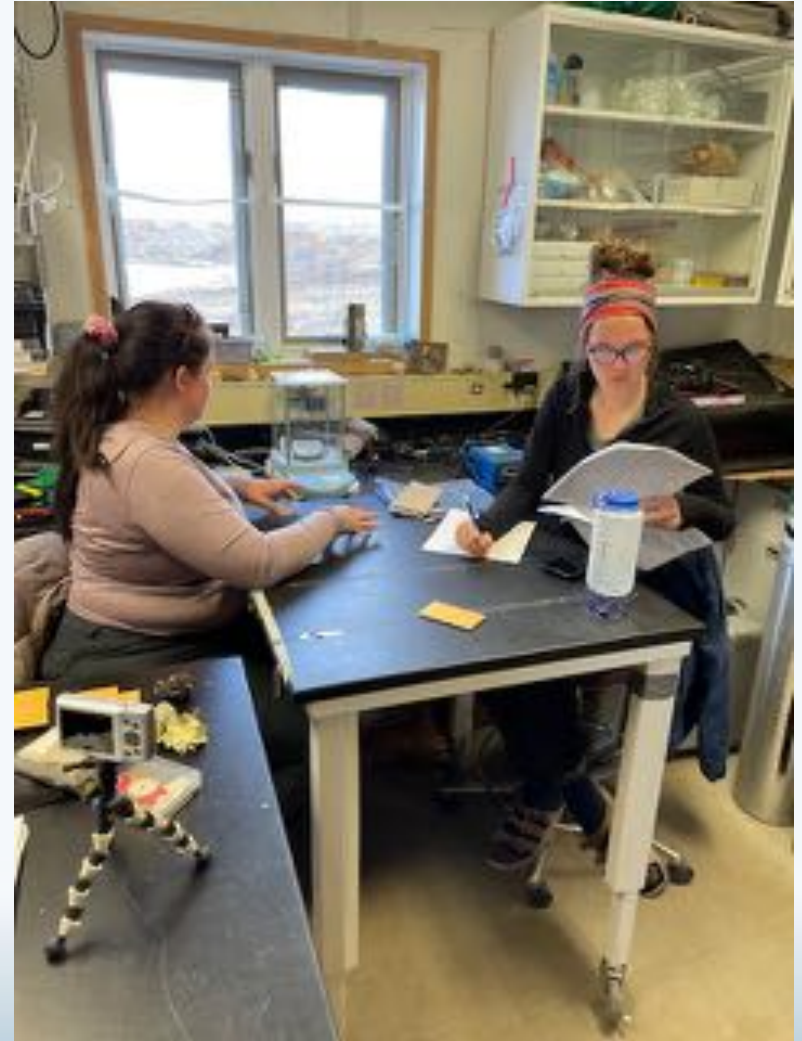
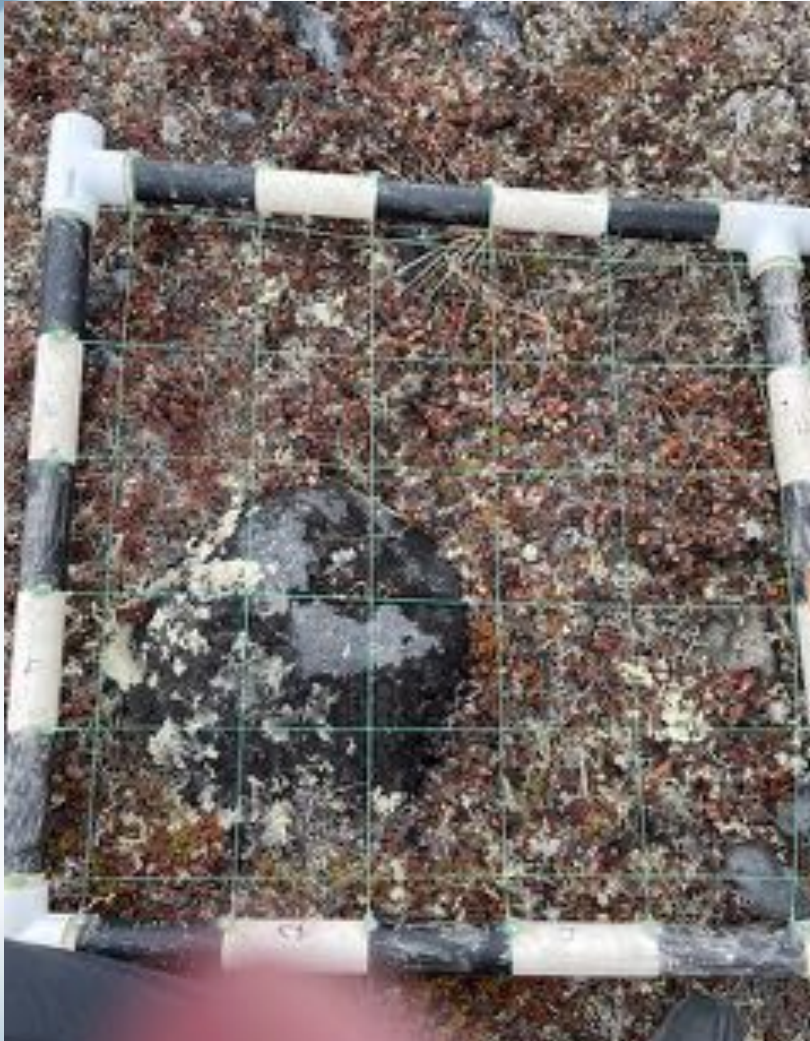
# Berry Survey!



# Back on the highway...



# Berry exciting data



# Even More Science...? Yes!



The Pollinator Crew!



Team Vole!

# Join PolarTREC!

[www.polartrec.com/about/join](http://www.polartrec.com/about/join)

Everyone can participate in different ways:

- **Follow Expeditions**
- **Participate in PolarConnect Events**
- **Join the Polar Education Email List**
- **Check out our great resources online**
- **Become a PolarTREC Teacher or Researcher**
- **Become a member of ARCUS**



# Thank You!

*An archive of the event will be available shortly.*

<http://www.polartrec.com/polar-connect/archive>



*25 Years of Connecting Arctic Research*  
[www.arcus.org](http://www.arcus.org)