

Welcome to *PolarConnect*



Chemical Ecology of Shallow-water Marine Communities

With PolarTREC Teacher Keith Smith

& Team Researchers Dr. Chuck Amsler, Dr. CJ Brothers & Michelle Curtis

29 May 2018

Getting to Know Adobe Connect

Slides will be shown here

Exit presentation

Mute your speakers

Raise your hand

List of all participants

Follow the chat

Find out more about the presentation

Chat here



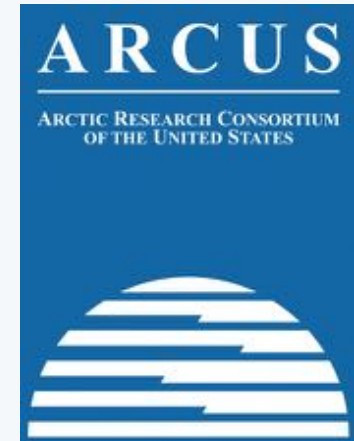
Participant Introductions

**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 K-12 teachers. They are paired with researchers for 2-6 week research experiences in the polar regions.
- Over 150 teachers 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

Questions

During the Presentation:

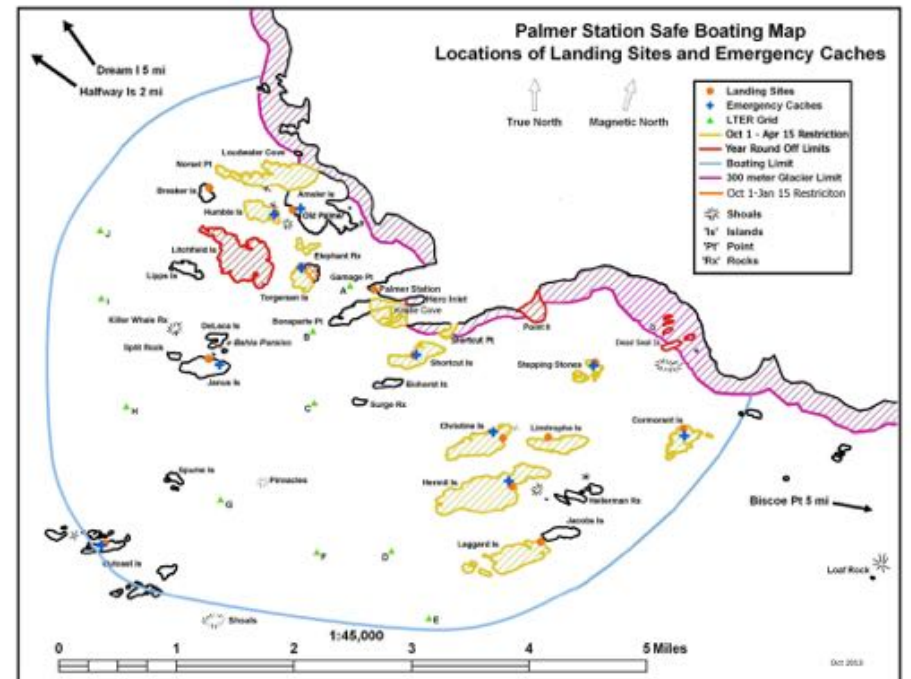
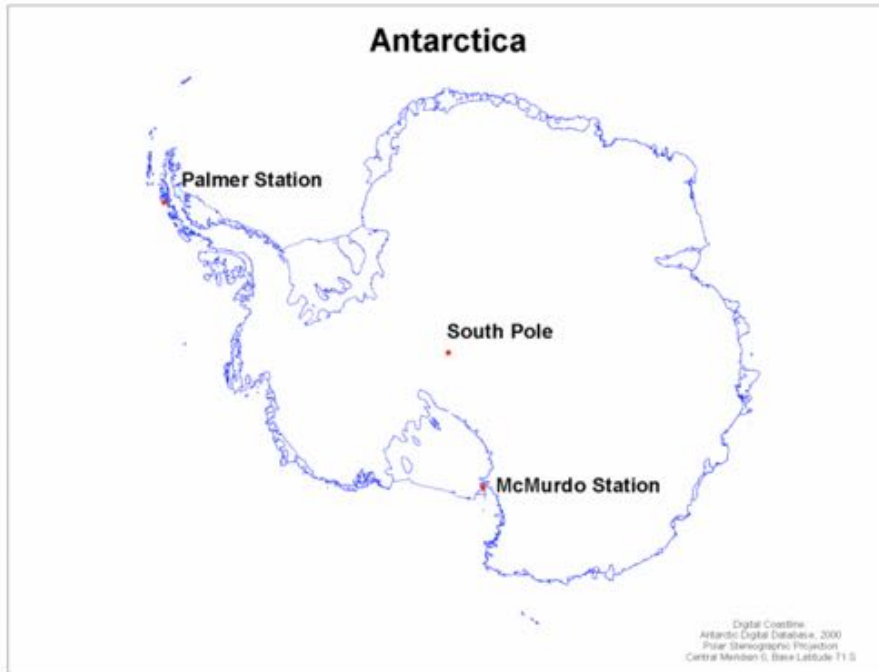
- Type your question in the text chat box

At the End of the Presentation, two options:

1. Type your question in the text chat box, or
 2. Raise your hand with the “hand button”.
- PolarTREC staff will call on you and activate your microphone.
 - Speak loud and clear, directly into the computer microphone or the phone to ask your question.

Palmer Station

Boating Limits



Dr. Chuck Amsler: Intersection of Chemistry and Ecology

- How very abundant small snails may help keep very large seaweed free of competitors
- Does the environment influence defensive chemistry in a common seaweed
- How is one small crustacean species able to live on a very toxic seaweed

**POLAR
TREC**

TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING



Maggie Amsler: Support for All Research

- Bioassays or taste testing algal compounds
- Amphipods (small shrimp like organisms)
- Starfish
- Algal growth experiments
- Diver



Dr. CJ Brothers: Sea Star Gut Bacteria

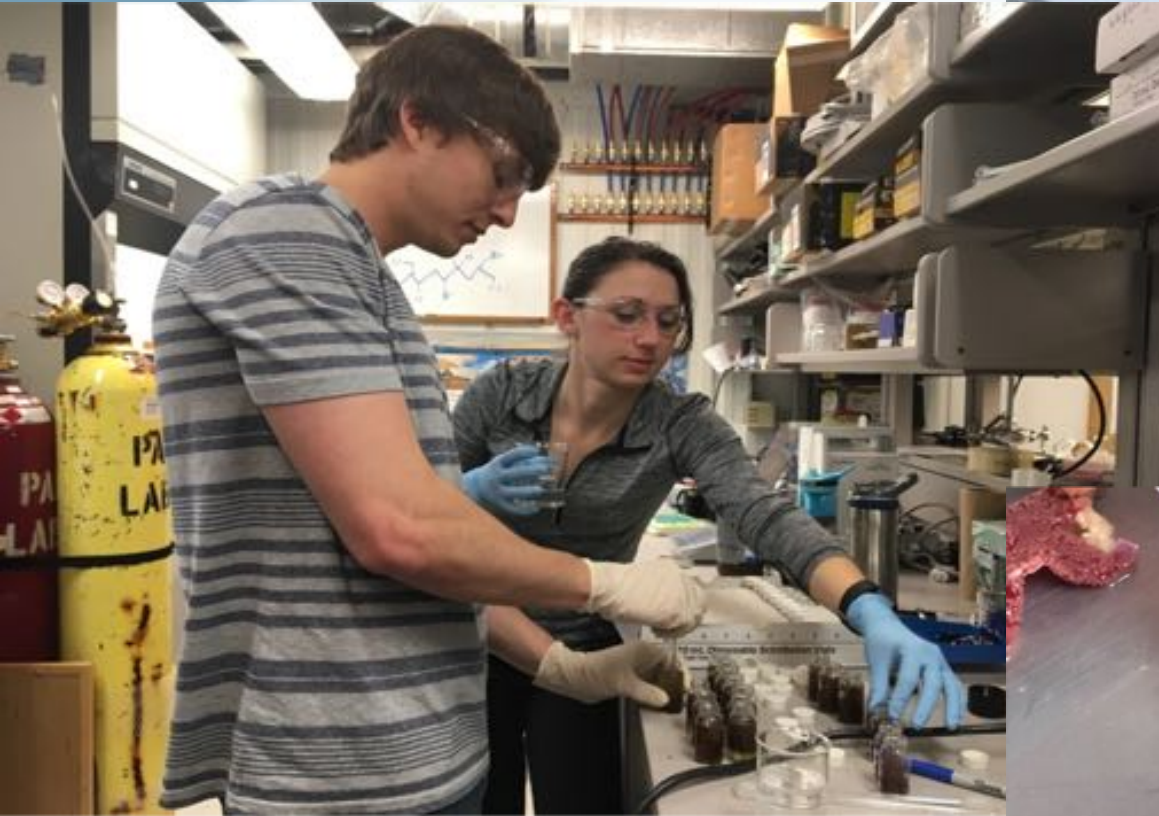
- What bacteria live in the sea star stomachs
- Are bacteria helpful or hurtful to sea star digestion
- Does the bacteria change between different types of sea stars.



Upper Left: Common
Antarctica sea stars
Upper Right:
Dissection of a sea star
Bottom Left: Exhibiting
sea stars before
dissection

Michelle Curtis: Sea Star Wrangler Extraordinaire

- Assists CJ by dissecting sea stars
- Assists in extracting chemical from seaweed
- Testing to see if chemical defenses in brown algae taste good to sea stars



Above: Extracting Chemotypes
Above Right: Driving the Zodiac
Right: Dissection of a sea star

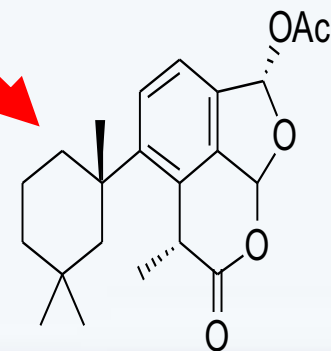
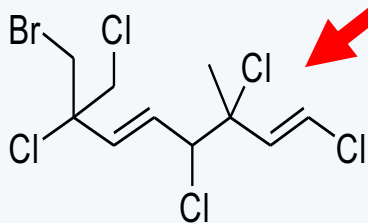
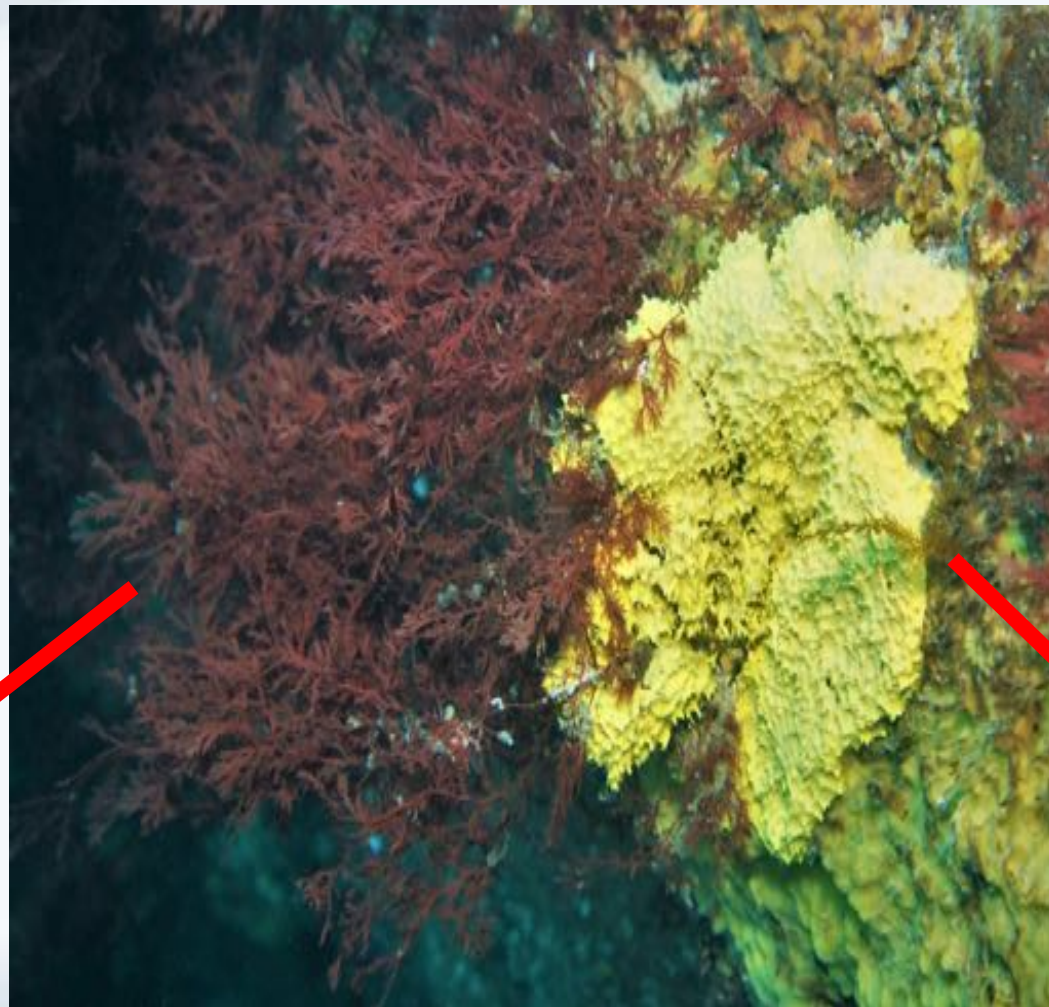
Sabrina Heiser: Understanding the role of seaweed in the ecosystem.

- How the chemical defenses impact other organisms living in the seaweed
- Trying to understand what is driving the chemical diversity within a single species
- Gene flow within transects within specific sites and throughout the boating area of Palmer Station



Andrew Shilling: Chemical analysis and medical uses of invertebrates and seaweeds

- Mucous (Cactus) Sponge- Being tested for being active for MRS
- Chemotyping red seaweed for understanding ecology of Antarctica marine environments
- Going to obtain his 100 Antarctic Dive





Left: Underwater during a dive



Right: Returning
from a dive while
brash ice has
moved in

Dive Tending



Scenery





Wildlife





TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING

Questions or Comments for the Keith or the Team?

Join PolarTREC!

www.polartrac.com/about/join

Everyone can participate in different ways:

- **Follow Expeditions**
- **Participate in PolarConnect Events**
- **Join the Polar Education Email List**
- **Check out the great resources**
- **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>



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