



TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING



Welcome!

PolarTREC Informational Webinar



Wednesday, 11 September 2019

Questions

During the Presentation:

- Type your question in the text chat box



At end of the Presentation:

- Raise hand, if you want to ask your question live and then, unmute your microphone.

Presentation Outline



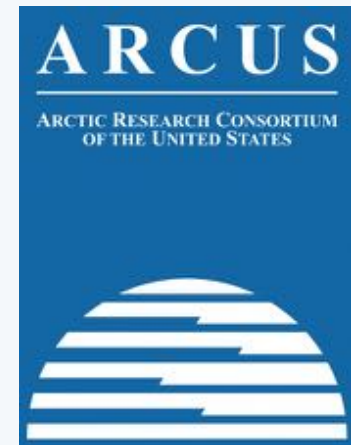
- Introductions
- What is ARCUS?
- What is PolarTREC?
- Goals and Project Elements
- Program Benefits
- The Application Process
- If You Are Selected
- If You Are Not Selected
- FAQ's & Answers

Who is ARCUS?

ARCUS (Arctic Research Consortium of the United States) is a not-for-profit corporation consisting of institutions operated for educational, professional, or scientific purposes. ARCUS provides leadership in advancing knowledge and understanding of the Polar Regions through a variety of programs and outreach endeavors.

ARCUS is based in Fairbanks, Alaska and works with primarily arctic scientists around the world to facilitate interdisciplinary collaboration, outreach and education within and outside the science community.

ARCUS website: www.arcus.org



25 Years of Connecting Arctic Research

www.arcus.org

What is PolarTREC?

PolarTREC (**T**eachers and **R**esearchers **E**xploring and **C**ollaborating)

- PolarTREC is a professional development teacher research experience in which primarily teachers and informal educators* are paired with researchers to participate in a 3-6 week polar research experience.
- PolarTREC is **not** educators simply observing and reporting science, taking a vacation, or only fulfilling a personal dream to visit the polar regions.
- PolarTREC is administered by Arctic Research Consortium of the United States (ARCUS)

*We will talk about eligibility for 2020-2021 later in this presentation.

PolarTREC Staff



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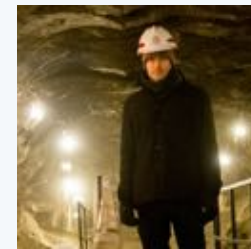
Helen Wiggins

Executive Director



Zeb Polly

Systems Administrator



Joed Polly

Video Production

...with help from the entire staff at ARCUS



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Goal, Objectives, and Project Elements

Program Goal & Objectives

Our goal is to invigorate polar science education and understanding by bringing educators and polar researchers together.

- To improve educator STEM content knowledge of the Polar regions and transfer to their learning setting.
- To increase educator knowledge and use of STEM practices with students and/or audiences in their learning setting.
- To build educator science identity.
- To increase student understanding and engagement in the polar regions and interest in polar-related STEM careers.
- To develop long-term professional relationships between the education and research communities.



Program Components

The main components include:

1. hands-on field research experiences that are implemented in the polar regions,
2. broadly disseminate the experiences to students, professionals, and the public,
3. develop a sustainable learning community, and
4. provide clear and appropriate measures of project success.



Key Program Activities

Intensive 1-Week Orientation

- Technology Training
- Education/Outreach Planning
- Polar Science
- Safety
- Cohort Team Building



Comprehensive Selection Process

Researchers Make Final Selections

Detailed Logistic Support

Substitute & Other Expenses Covered

Alumni Involvement

Pre\Post Expedition Travel Support

Long-term Access to Resources & Support

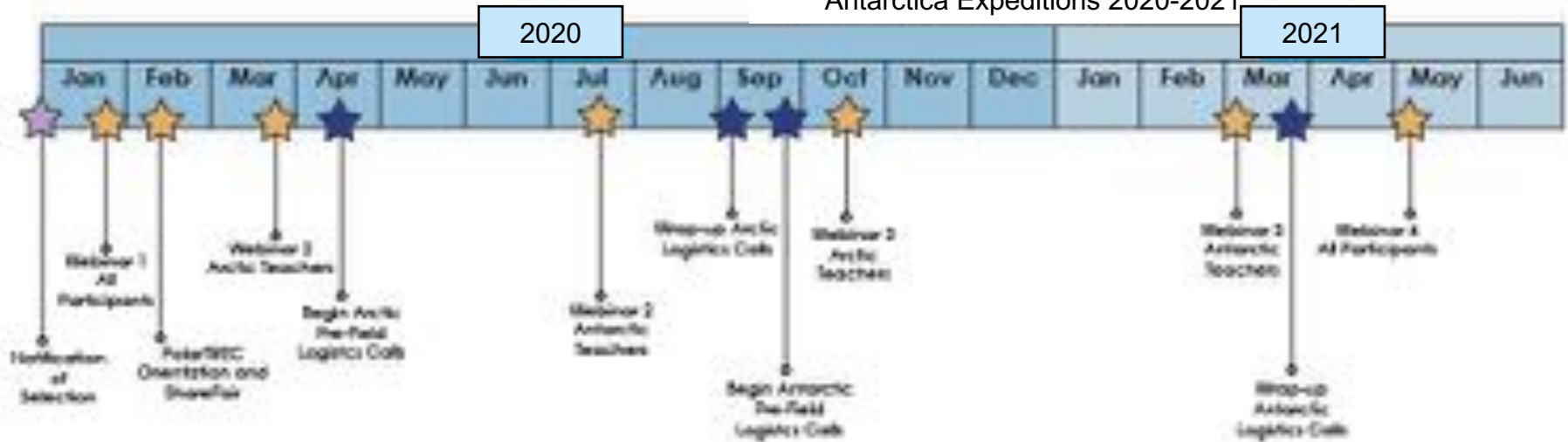


Projected Timeline of Major Program Activities

PolarTREC Expedition Activities (See Below)

Arctic Expeditions 2020

Antarctica Expeditions 2020-2021



Phone Calls, In-Person Meetings, and Webinars
 Note: Additional training webinars may be held for teachers as demand warrants.

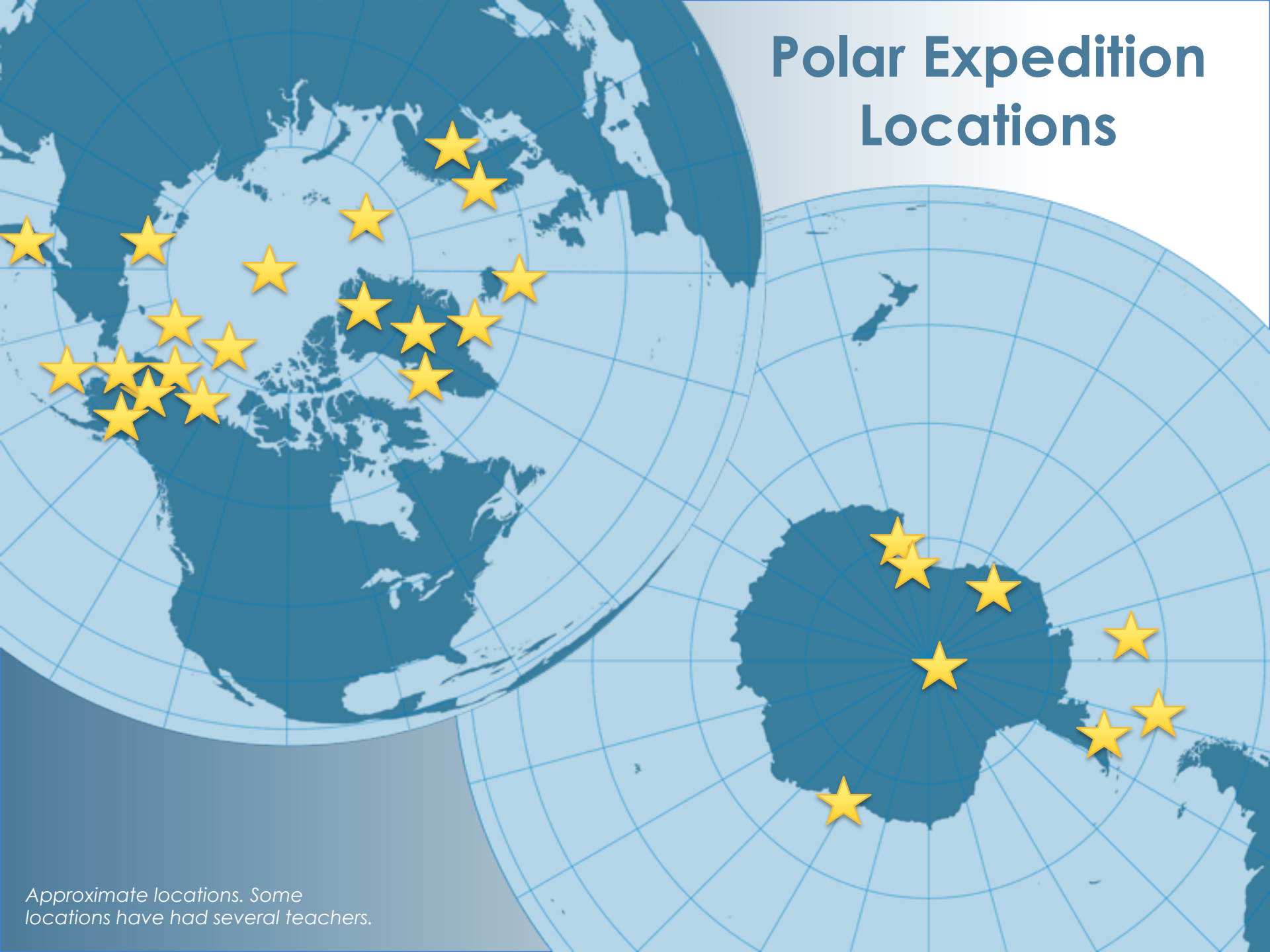
Note: PolarTREC will offer enrichment/professional development opportunities throughout the year which may include of webinars, field courses, and presentations at regional and national conferences. All TBC.

The Research Experience



- Educator is matched with researchers and travel to locations in the **polar regions**
- Experiences last from 3 to 6 weeks (or more!)
- Experience involves **intense** field work—educators become **members** of the team
- Experience involves safety and **training**
- Educators can **communicate** daily with the public

Polar Expedition Locations



Approximate locations. Some locations have had several teachers.

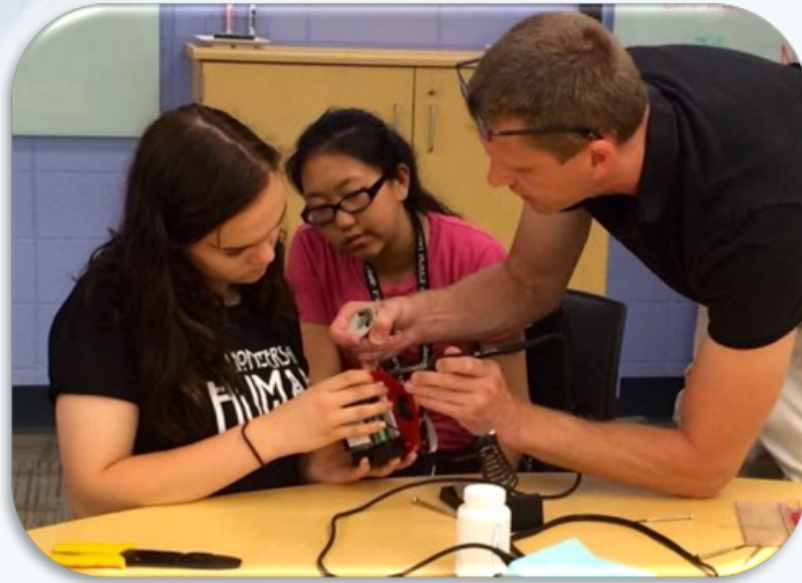
Professional Development



- Educators are **immersed** in scientific content and get experience with the latest scientific equipment
- Educators and researchers **work together** to bring the science to a variety of learning settings —science that students can connect with
- Educators **utilize experiences** to develop products that meet NGSS and are STEM focused

Outreach

Outreach supported through the use of technology tools:



- *PolarConnect in-field presentations*
- *Online journals & videos*
- *Photo albums*
- *Questions and comments from the public*

AND MORE!

Community and Program Support

- **Funding** to help nurture ongoing relationships between educator and researcher
- **Educator Partners** mentor and advice incoming participants
- A **Polar Network** where social media is used to keep alumni connected and collaborating between teachers and researchers
- The **Learning Resources** database, an online collection of polar related lessons and activities and products to share science
- Polar Education **E-Mail Listserve** to share ideas and opportunities
- **International Connections** to polar focused groups for ongoing collaborations and opportunities

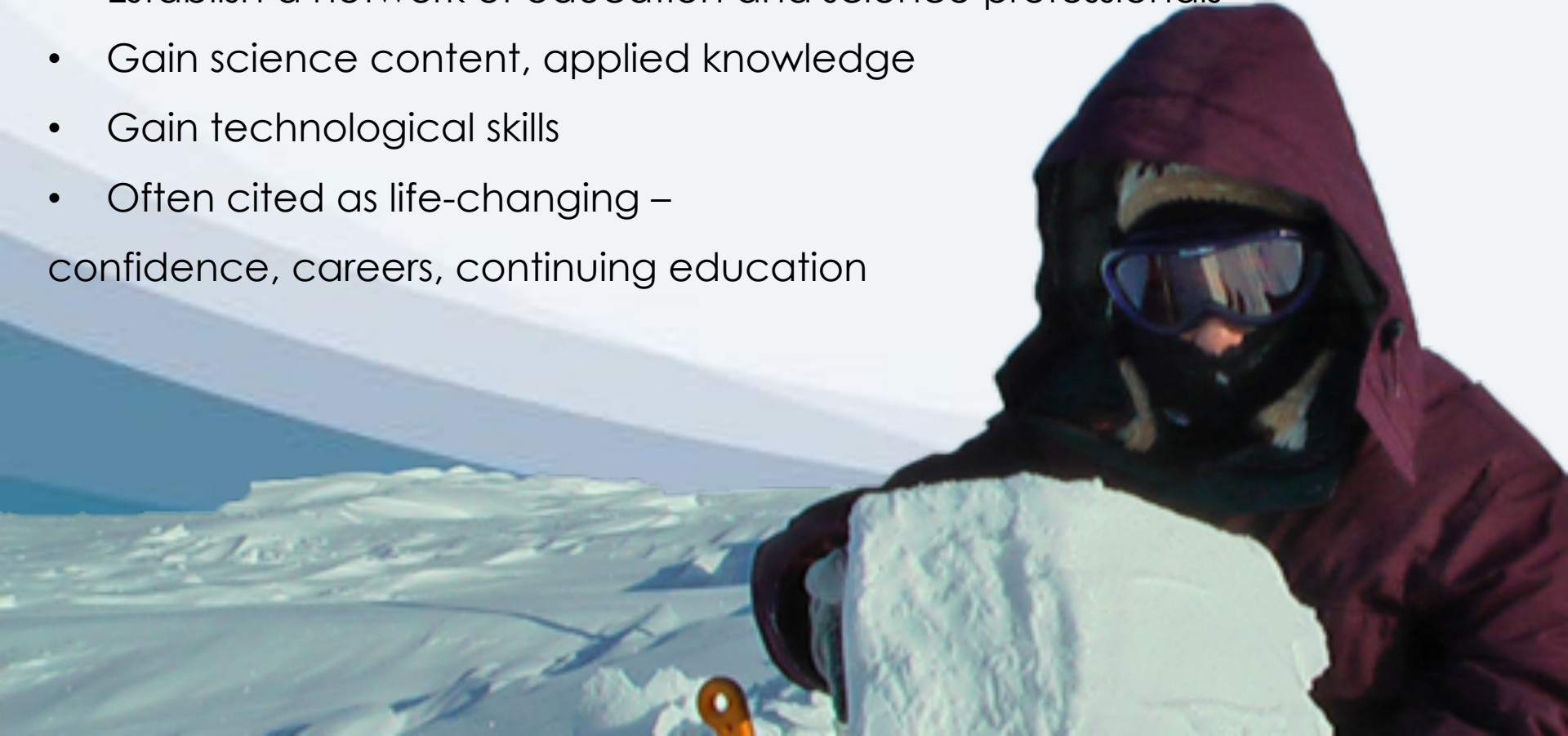


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Program Benefits

How Educators Benefit

- Integral part of a science team, engage in actual science with working scientists and acquire an understanding of inquiry science
- Transfer the experience and excitement to students & public
- Professional rejuvenation, seen and treated like a professional
- Establish a network of education and science professionals
- Gain science content, applied knowledge
- Gain technological skills
- Often cited as life-changing – confidence, careers, continuing education



How Researchers Benefit

- A well prepared, enthusiastic, hard-working team member.
 - A great amount of “easy” project outreach, often including web, print, TV, and in person outreach and education.
 - Personal satisfaction of working with educators and contributing to the improvement of STEM education and scientific literacy.
- 
- A photograph of two people standing on a rocky, snow-dusted beach. The person on the left is wearing a dark blue winter jacket and a fur-lined hat. The person on the right is wearing a bright red winter jacket and a black hat. They are both wearing sunglasses. The background shows a vast, flat landscape with patches of snow and distant mountains under a clear sky.
- A lasting connection to the education community.
 - Improvements in your ability to teach and communicate your science, and interact with those outside your scientific discipline.
 - And much more!



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The Application Process

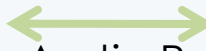
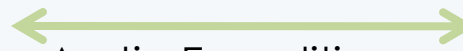
Application Timeline*

2019

2020

2021

Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb



Educator
Orientation

Arctic Expeditions

Antarctic Expeditions

Arctic Pre-Field Calls

Antarctic Pre-Field Calls

Applications
Accepted

Selection
Committee
Convened

Researchers
interview,
make final
selections

Top teachers are
matched to
selected projects

Ongoing:

- Pre / Post Field Visits (School/Institution)
- PQ or other Medical Preparations
- Related Training
- Related Education and Outreach activities
- Evaluation

Basic Eligibility for 2020-2021

Educator Eligibility

- **U.S. Citizens or permanent residents of the United States or its possessions**
- **Formal or classroom teachers grades 6-12 (middle school & high school)**
- **Informal Science Educators w/ primary focus on outreach to middle &/or high school students; and/or professional development to their teachers.**
- **Any discipline or subject matter accepted (not just science)**

Researcher Eligibility

- **Primary NSF funded or collaborating w/ NSF funded project**
*Contact us if this is not the case
- **Researchers do not need to be a U.S. Citizen to apply to the program.**
*Final decisions will be discussed with NSF.
- **Research projects that are polar or sub-polar are considered for the program**

Matching Process

- **October:** Approximately 200 Educator Applications Reviewed Internally; Top 100 applications reviewed by selection committee of educators, researchers, and others
- Finalist pool of top 40 created by selection committee
- **Early November:** All applicants notified of application status. Start looking at top applicants, select research projects
- **November:** Selected researchers review approximately 6-8 best matches for their project
- **November:** Researchers and ARCUS conduct approximately 3 educator interviews per project
- **December:** Researchers, with any needed help from ARCUS, select the educator they will be working with
- **February:** Webinar 1: Introduction to PolarTREC and Projects
- **March 2020:** PolarTREC Orientation, Location TBD

The Application Form

- Fill out the application at www.polartrec.com (**both educator and researcher app**)
- It is combination short answer and essay questions
- Some questions may require research and preparation
- You must have an email address to complete the application
- Your answers may not save if you navigate away from the page or close the page
- Use Word version & cut/paste into the online application
- Pre-existing supplement due w/ online application
- If you cannot access the application or have any troubles, please email info@polartrec.com as soon as possible
- **Educator apps due Monday, 7 October 2019 at 5 pm Alaska Daylight Time.** *Researcher apps due 14 October 2019.*

Application Tips!

- **Spell-check and proofread!**
- Write thorough, but concise answers.
- Take note of word limits for certain questions.
- Be clear about your personal and professional goals, and how this fits into your professional development strategy and career.
- Outline clear ideas about how you will share this experience with your primary audience, community, peers, the public, media, etc.
- Provide past examples when possible.
- Read the questions thoroughly, and address all parts.
- Do your homework and look through the website! We provide all teachers with a journal (blog), photo gallery, etc.
- **Make sure e-mails from us are coming to your inbox!**

Please don't...

- Misspell PolarTREC, Arctic, or Antarctic!
- Just write “I, I, I” and “Me, Me, Me”
- Paraphrase your essay question answers
- Write responses that are too brief or vague
- Submit incomplete answers
- Mail or e-mail us additional documentation, lesson plans, photos, etc.

If you have corrections or changes to your application, you can either resubmit the application or you can send specific instructions with your corrected answer to info@polartrec.com until the application deadline.



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If You Are Selected ...

Selected Educators Are Provided:

- Training for the experience virtually and in-person, including 1 week orientation
- Limited travel support for pre or post field meetings between educator and research team
- Technological equipment for duration of participation, including laptop, camera, related accessories
- Most outdoor gear and clothing to be comfortable in the field and complete the work, including jacket, boots, etc.
- Substitute expenses, for classroom teachers, during orientation week and expedition if occurs during the school year
- Travel expenses related to the orientation and expedition

Selected Researchers Are Provided:

- We work with NSF logistics providers to cover all travel to and from the field, meals, outdoor gear, etc.
- ARCUS provides support for educators where NSF logistics providers or schools do not cover it.
- ARCUS provides educators with technological equipment, training, ongoing support, and the infrastructure to communicate from the field.
- Researchers, optional personal or project costs you may incur include: your travel to orientation, travel to meet your educator, pre-field communications costs, materials or books sent to your educator, etc.

Costs Educators May Incur:

- Personal apparel and gear not provided, such as long underwear, socks, gloves, toiletries, etc.
- Personal travel adjacent to the expedition, or travel related to your outreach activities before or after the expedition
- Possibly salary related costs, depending on your school or work and their policies
- PolarTREC educators **DO NOT** receive a stipend for their participation in the program (this includes informal science educators)

Educator Expected Time Commitment

- 1 week for Orientation likely in March 2020
- Participation in 3-4 two-hour webinars related to the training
- Participation in 1 or more pre-field logistics phone call or virtual meeting
- Approximately 3-6 weeks in the field, plus associated travel days to and from the site
- Additional personal time for technology training and practice, as needed
- Additional personal research time/reading related to the subject of the expedition, as needed
- Outreach activities before and after the expedition, as you determine
- Completion of PolarTREC program requirements and evaluation components

Researcher Expected Time Commitment

- 8 – 9 hours of reading applications and selecting an educator for your team
- Participation in (2) 1 hour webinars related to the program
- Participation in 1 or more pre and post field logistics phone calls or virtual meetings
- Commitment to working with educator in the field
- Additional time sharing reading related material with the educator, as needed
- Outreach activities before and after the expedition, as you and educator determine
- Completion of PolarTREC evaluation components (no more than 1 hour)



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**I didn't get picked!
Now what?**



- **Apply again in the future!**
- **Follow an expedition at www.polartrec.com!**
- Read about adventures in science in the journals
- Post questions to the journals
- Check out the beautiful photography in the journals
- Watch short videos associated with expeditions
- Share a “Polar Profile” with your students and explore careers

- Participate in a “PolarConnect” live event from the Arctic or Antarctica
- Contribute to and utilize the online Learning Resources database
- Sign up for the Polar Education E-Mail List
- Become of our International networks and partners – APECS and PEI
- Participate in an online learning community about Polar science education





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Frequently Asked Questions

APPLICATIONS

- How many people are accepted?
- Does it matter where you are from? (within the U.S. or P.R.)?
- Are there age restrictions for participants?
- What types of backgrounds are you looking for?
- How many "areas of interest" need to be high in order to create a competitive application?
- Are there any specific fields in which you would like the teachers to have general/specific knowledge of?
- Are there any skills that would be advantageous in being considered as a candidate?
- Do your teachers generally have any research experience?
- Are applicants given specific feedback if they are not successful in their application?
- As an informal educator (one that teaches STEM to students on Saturdays during the school year) would I be eligible to apply?
- What makes a successful application and what are some of the reasons that applicants might not get chosen?

EXPEDITIONS

- Are there participation opportunities for geology and earth sciences?
- Are there opportunities to take or analyze core sample sets or do your own research?
- What type of research might we be doing? (Related: Do you get to pick the research project or are you assigned to one based on skills and interest?)
- What are the dates?
- Are there opportunities for polar scuba diving as part of the research?
- What percentage of the teachers who get selected have already set up a relationship with their researcher? How important is a prior relationship?
- What will we be doing that is STEM-oriented? Astronomy? Neutrinos? Climate Change?
- Is there an index or directory of researchers who will have projects with PolarTREC, and is it encouraged to contact them directly?

REQUIREMENTS

- What are the expectations of the teachers with regard to your program?
- Are social studies/world history teachers eligible? If yes, any tips for teachers applying from this discipline?
- How specific do our plans for implementation have to be before the trip? As an informal educator, our programs change often and opportunities may change between application time and implementation time.
- Are there deliverables that participants are expected to produce or other requirements following this experience?

OTHER QUESTIONS

- **Besides having the support from the school administration, if this is to take place during a school year, would I be responsible for covering the costs of a substitute teacher during my absence?**
- **If accepted to the PolarTREC Program, are there opportunities to be in contact with the researchers and team members after the expedition to share their experiences with our students?**
- **Does the PolarTREC program count towards any continuing education credits?**
- **Do the educators participating in PolarTREC during the 2020 field season ever meet one another to discuss their experience, curricular materials, etc.?**
- **What is the timeline once accepted into the program?**
- **How do I access the archive of this webinar?**

Remember the Deadlines

Educator Application Deadline:

Monday, 7 October 2019 – 5PM ALASKA DAYLIGHT TIME

<https://www.polartrec.com/educators/application>

Researcher Application Deadline:

Monday, 14 October 2019 – 5PM ALASKA DAYLIGHT TIME

(There is flexibility on this so email us.)

<https://www.polartrec.com/researchers/application>

Thank You!

For Questions & More Information:

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www.polartrec.com

