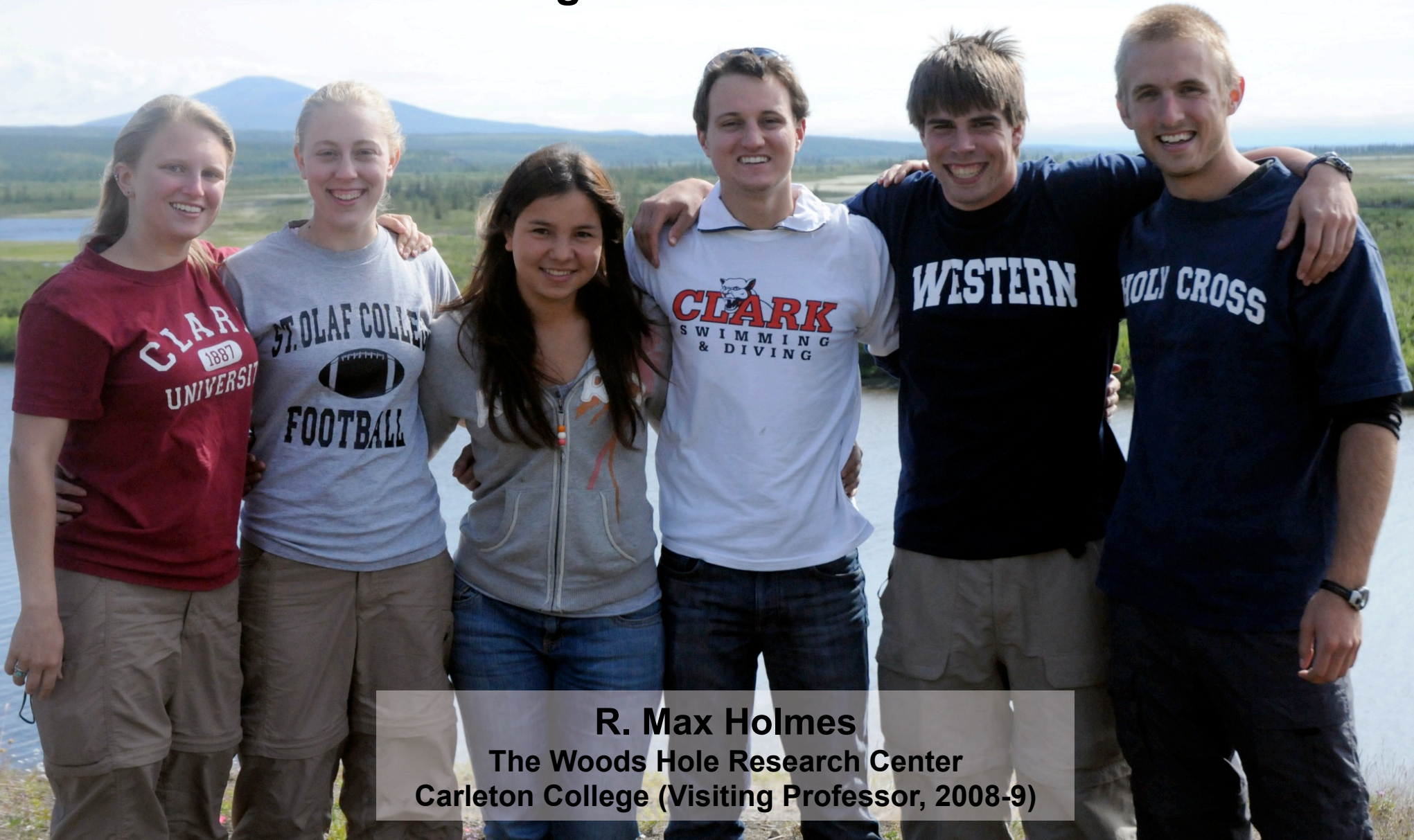


# The Polaris Project

## Rising Stars in the Arctic



**R. Max Holmes**  
The Woods Hole Research Center  
Carleton College (Visiting Professor, 2008-9)



# The Plan

- **Polaris Project Overview**
- **Why Siberia?**
- **Why the Northeast Science Station, Cherskiy, Siberia?**
- **Summer 2008 Polaris Project Field Course**
- **The 2009 Field Course**





# The Polaris Project

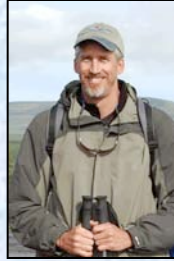
www.thepolarisproject.org



Karen Frey



Max Holmes



Kate Bulygina



Sergey Zimov



John Schade



Bill Sobczak



Katey Walter



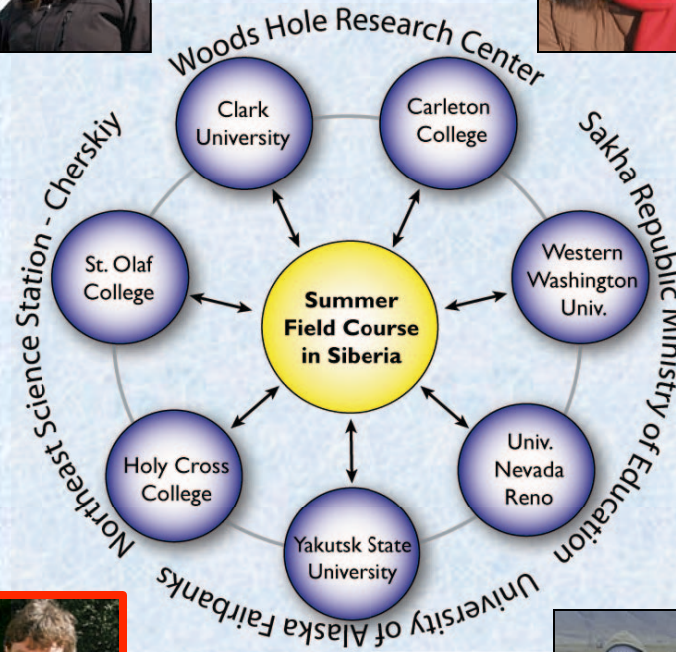
Valentin Spektor



Andy Bunn



Sudeep Chandra



**Assessment**  
Jo Beld, St. Olaf

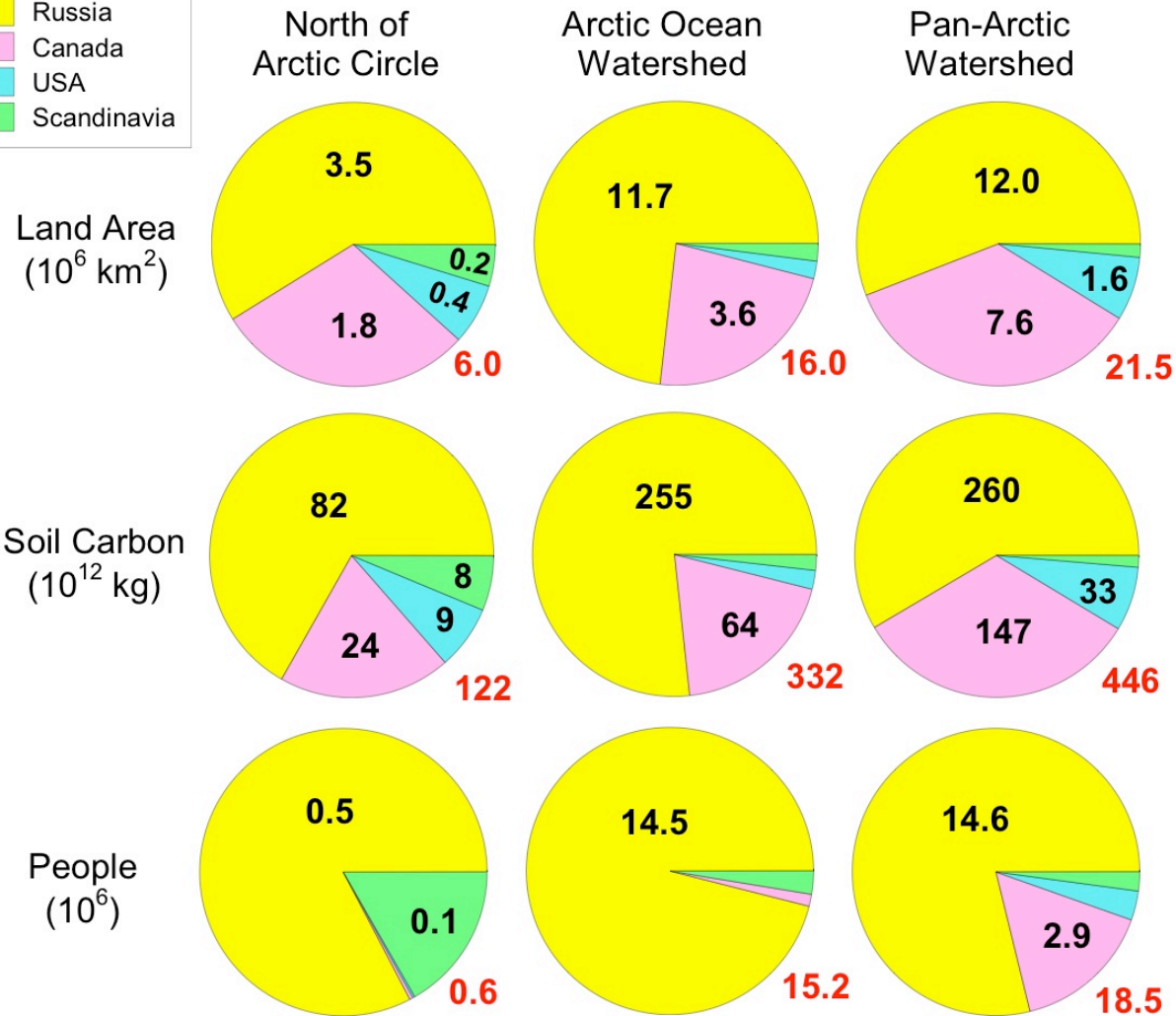


# Polaris Project Objectives

- Expose large number of undergraduates to Arctic System Science
- Provide authentic undergraduate Arctic research experience
  - In Siberia!
- Attract and develop next generation of Arctic researchers
- “Convert” exceptional early career scientists
- Promote diversity in Arctic science and education
- Build international partnerships and collaborations
- Engage the public

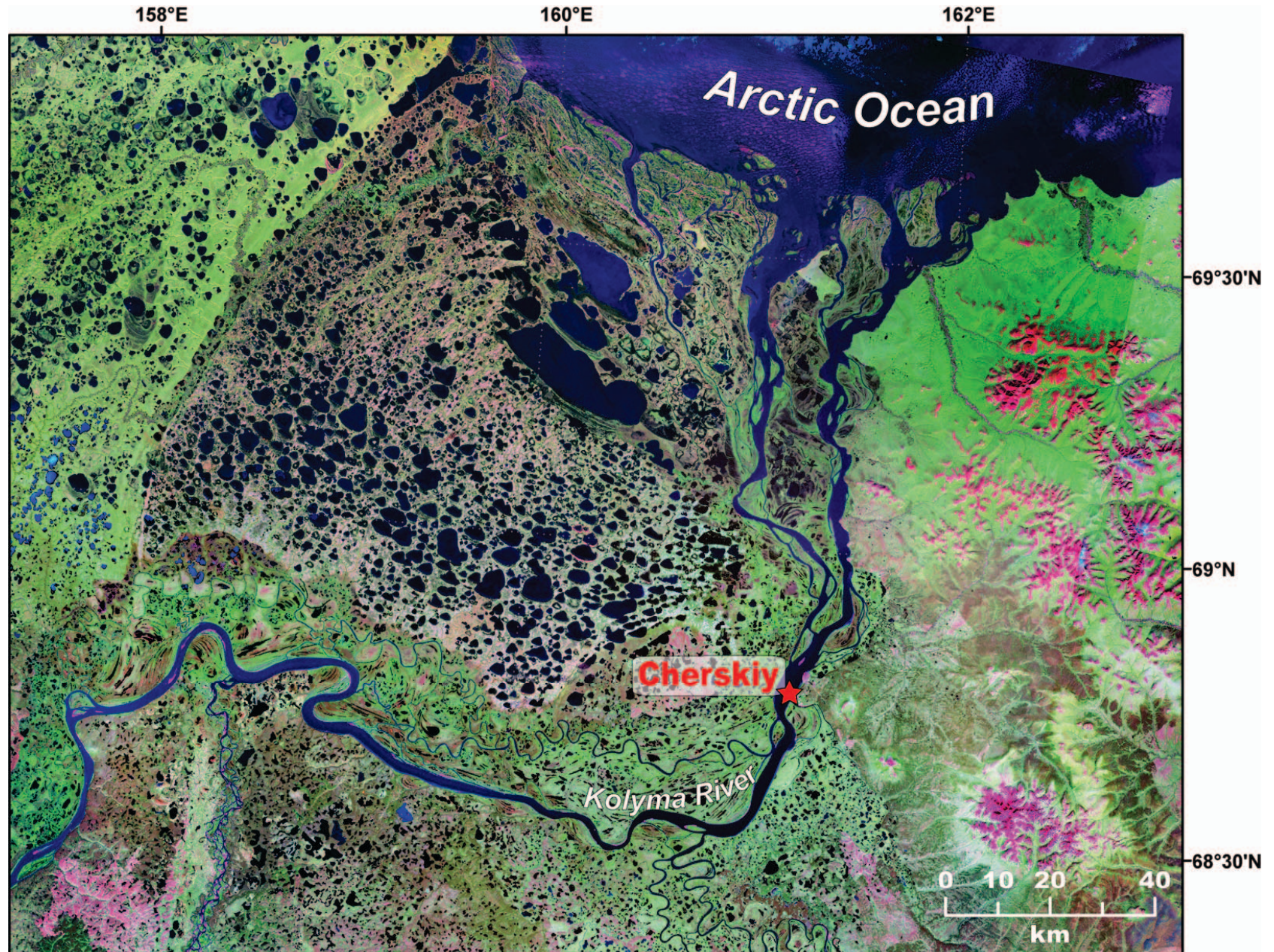


# Why Siberia?





# Why the Northeast Science Station, Cherskiy, Siberia?





# The On-Campus Courses

| <b>Institution</b> | <b>Course</b>                 | <b>Instructor</b> | <b># Students</b> |
|--------------------|-------------------------------|-------------------|-------------------|
| Clark Univ.        | Arctic System Science         | Karen Frey        | 32                |
| Western Wash.      | Climate Change                | Andy Bunn         | 35                |
| Holy Cross         | Arctic Ecosystem Ecology      | Bill Sobczak      | 12                |
| St. Olaf           | Arctic Ecosystem Ecology      | John Schade       | 20                |
| Yakut St. Univ.    | General Geocryology           | Valentin Spektor  | 11                |
| Univ. Nevada       | Biodiversity and Conservation | Sudeep Chandra    | 70                |
| Carleton           | Arctic System Science         | Max Holmes        | 12                |

- About 200 students per year
- Course materials to be shared broadly

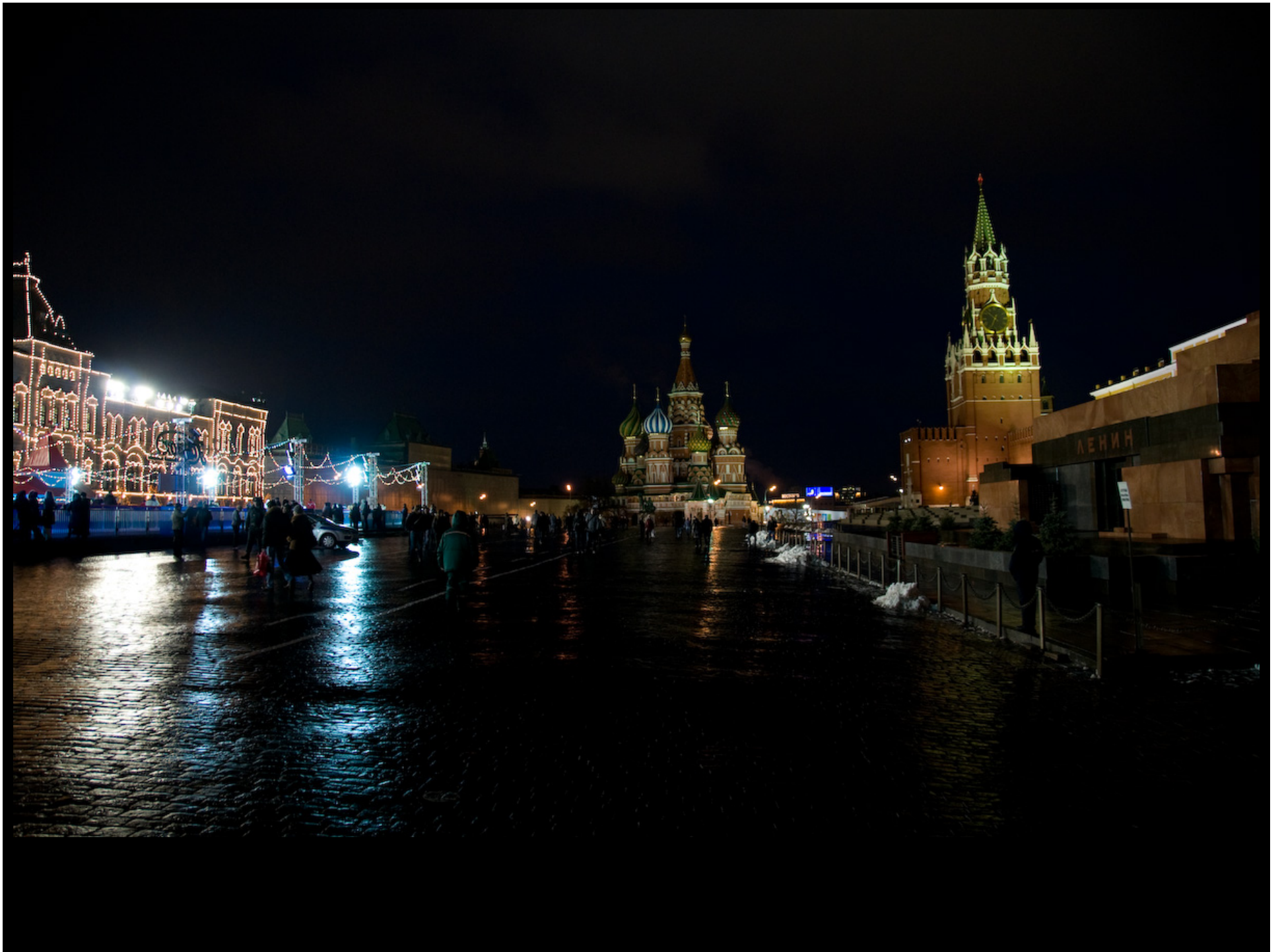


# The Field Course / Research Experience

(20 people, ~4 weeks)



- 2008 Field Course: 24 applicants, 9 offers, all accepted
  - 7 US, 2 Russian; 6 female, 3 male; 2 Arctic indigenous
- 2009 Field Course: 45 applicants, 12 offers, all accepted
  - 10 US, 2 Russian; 7 female, 5 male; 2 Arctic indigenous













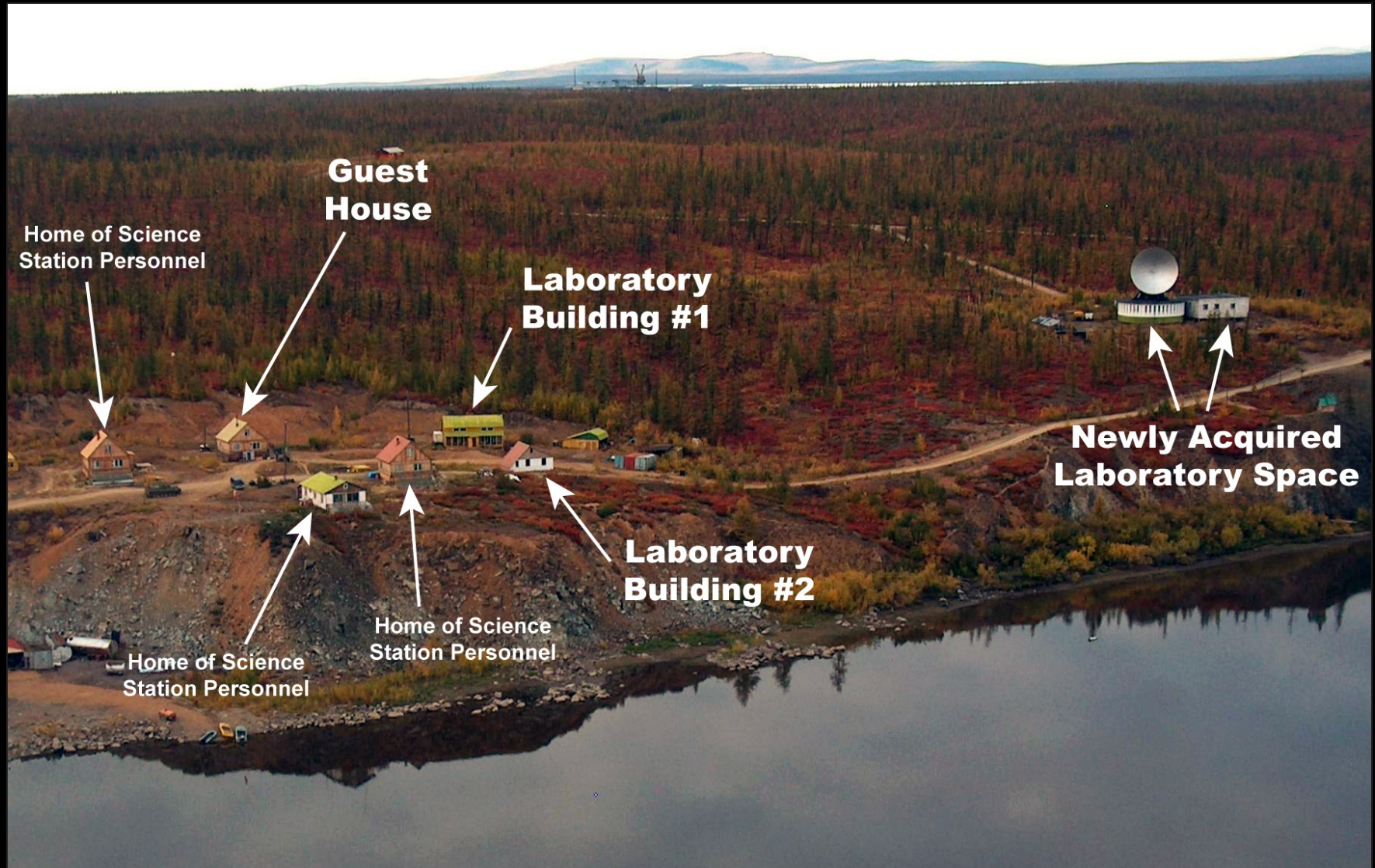








# Northeast Science Station, Cherskiy, Siberia

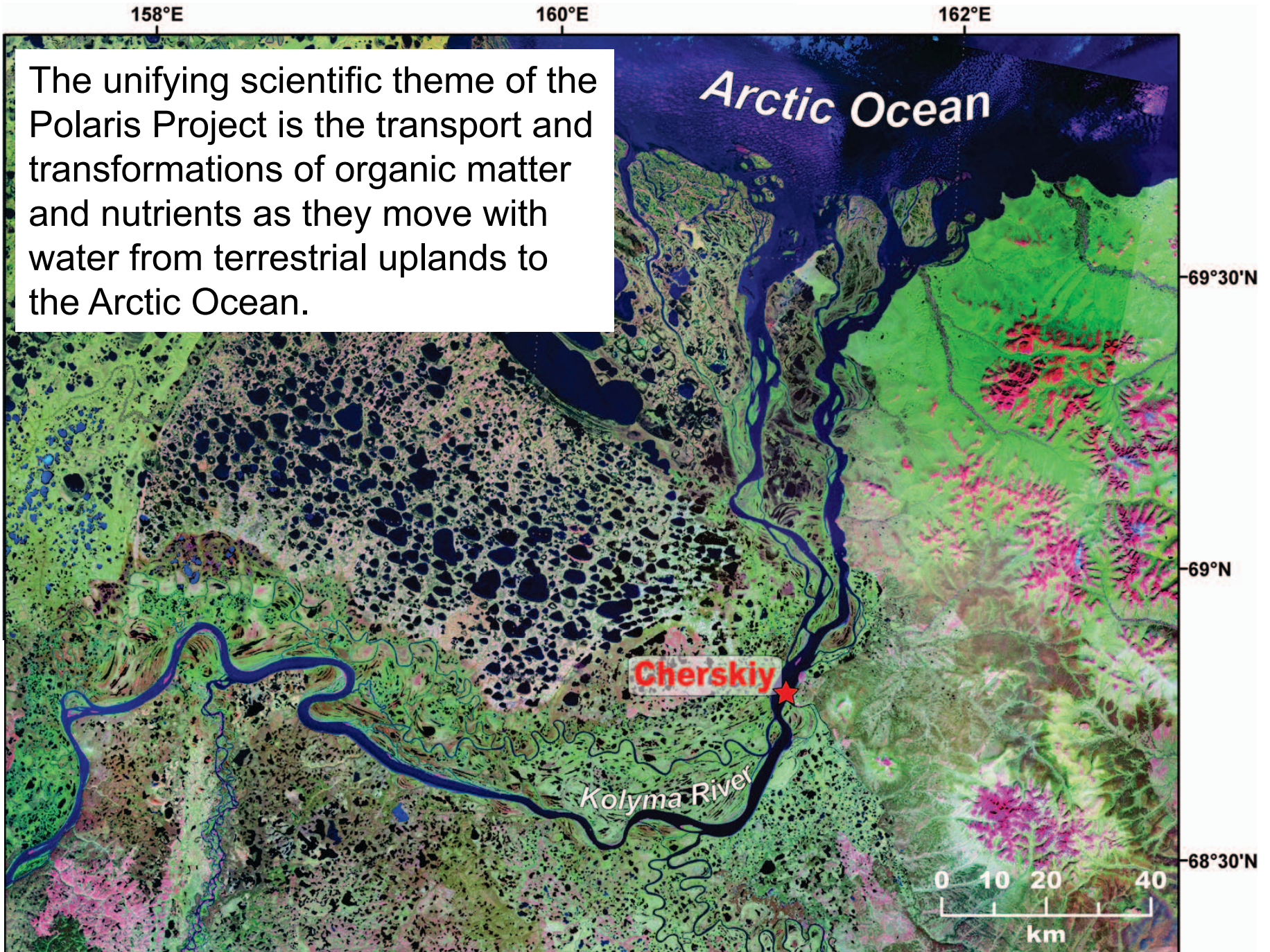








The unifying scientific theme of the Polaris Project is the transport and transformations of organic matter and nutrients as they move with water from terrestrial uplands to the Arctic Ocean.





























# American Geophysical Union San Francisco, Dec. 2008



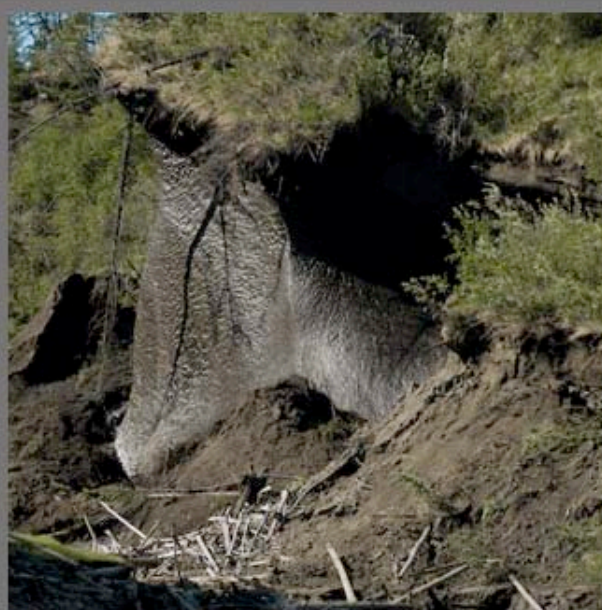


# Outreach and Public Education

- Website ([www.thepolarisproject.org](http://www.thepolarisproject.org))





[Home](#)[Apply Now](#)[Blog](#)[Photos](#)[Field Course](#)[Team](#)[Institutions](#)[FAQ](#)

Exposed permafrost at Duvannyi Yar

[Polaris Project Blog Entries](#)

## The Polaris Project: Rising Stars in the Arctic

After "Are you crazy?", the most common question you'll get as a participant in the Polaris Project will likely be "Why would anyone want to go to the Siberian Arctic?". The answers will vary, but most will include a description of the Arctic's tremendous importance to Earth's climate system, a desire to understand how global warming is already impacting the region, an excitement about the diverse and fascinating cultures you'll be exposed to in Siberia, and yes, the draw of an almost unbelievable adventure that very few people ever get to experience.

The Polaris Project includes a [field course](#) and research experience for undergraduate students in the Siberian Arctic, several new arctic-focused undergraduate courses taught by project [scientists](#) at their home [institutions](#), the opportunity for those scientists to initiate research programs in

[www.thepolarisproject.org](http://www.thepolarisproject.org)



# Outreach and Public Education

- Website ([www.thepolarisproject.org](http://www.thepolarisproject.org))
- K-12 Classroom visits
- Newspaper articles, TV, radio



# Challenges and Concerns



- Visas, permissions, tickets
- Travel, time zones, sleep
- Health and safety
  - NSF sponsored Safety Training Course
- Import / export: difficult and expensive
  - Incentive to analyze samples on-site
  - Recent upgrades help...



# The Reward...

“The most important impact on my attitude was changing my thoughts about climate change from a passive process, one that happens far from me and will likely have little effect, to a reality that will undoubtedly affect much of the world.”

“I definitely learned more about science and all aspects of it from this experience than I have ever learned in a classroom environment. I plan on continuing research of the Arctic.”



Cherskiy, Siberia, July 2008



# The 2009 Field Course

- Seasoned PIs
- More students
- Upgraded station
- Increased emphasis on research



## NEW STUDENTS

Travis Drake and Moira Hough – Carleton College  
Blaize Denfeld and Claire Griffin – Clark University  
Brian Kantor and Erin Seybold – St. Olaf College  
Joanne Heslop – Univ. Nevada Reno  
Kayla Henson and Max Janicek – Western Wash. Univ.  
Olga Belina and Kirill Tretakov – Yakutsk State University

## RETURNING STUDENT

Boyd Zapatka – Clark University

## PIs

Sudeep Chandra – Univ. Nevada Reno  
Karen Frey – Clark University  
John Schade – St. Olaf College  
Bill Sobczak – Holy Cross College  
Valentin Spektor – Yakut State Univ. / Melnikov Inst.  
Kate Bulygina – Woods Hole Research Center

## OTHER

Chris Linder