

National Science Foundation: Funding for our Future

The National Science Foundation is a critical funding resource for all science, engineering (S&E), and S&E Education fields in the U.S.

“Without NSF undergraduate research funding, I would not be the scientist I am today.”

ESA Member
Department
University
Email

Summer Undergraduate Research Fellowship

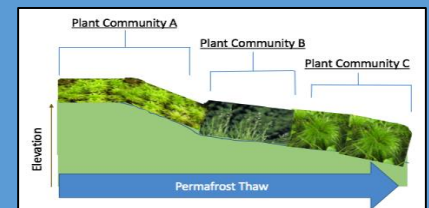
Consequences of Sub-Arctic
Permafrost Thawing in Abisko
Sweden



Higher average temperatures in Northern Sweden are causing permafrost to thaw and greenhouse gasses to be released

Research Highlights

- NSF funded my research to study the relationship between gasses and different plant communities that emerged over varying stages of permafrost thaw
- Over these different plant communities, I was able to track the release of methane (CH_4) and carbon dioxide (CO_2), two potent greenhouse gasses
- The new plant communities that emerged from the highly-thawed areas, were highly connected to increased methane levels
- Because this connection was so strong, it could change current climate predictive models
- This finding was the start of a multi-year study at this site, and is being written for publication



THE NATIONAL SCIENCE FOUNDATION (NSF)

is vital for supporting cutting-edge research across the U.S., securing the Nation's scientific innovation and prosperity.

In 2015, NSF provided grants to all 50 states.

Approximately 319,000 individual trainees, students, postdoctoral fellows, and teachers, were granted awards

National Science Foundation (NSF) Mission Statement:

“to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes.”

- The NSF Act of 1950 (Public Law 81-507)

National Science Funding at the University of New Hampshire

NSF Major Research Instrumentation Program aids UNH gain critical scientific equipment :

- **Illumina HiSeq 2000 DNA sequencer**

- Used for reading genetic information of organisms

Project Example: Understanding how the chemicals

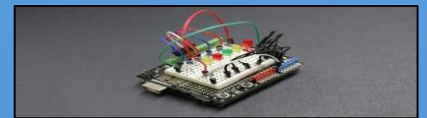
for degrading oil from the Deep Water Horizon spill in 2010 affects microbial communities



- **Focused Ion Beam Scanning Electron Microscope**

- Used for understanding micro-scale processes and dynamics of the world

- Project Example: Development of nanotechnology for advanced engineering



- **Isotope Ratio Mass Spectrometer**

- Used for tracking different isotopic elements through the environment and detecting changes over time.

- Project Example: Tracking nitrogen isotopes through different plant species to understand plant nitrogen requirements

