

HELEN A. EIFERT

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EDUCATION

Doctorate of Science, Planetary Science

Northern Arizona University, Flagstaff, AZ

Bachelor of Science, Geology

St. Lawrence University, Canton, NY

Visiting Student

University of Otago, Dunedin, New Zealand

August 2018 - Present

Degree in Progress.

August 2014 - May 2018

GPA 3.5881/4.

January 2017 - June 2017

GPA 3.5625/4.

RESEARCH

ICEBERG, NSF #1740450

August 2018 - Present

Dr. Mark Salvatore - Northern Arizona University;

Dr. Heather Lynch - Stony Brook University; Dr. Shantenu Jha - Rutgers University;

Dr. Vena Chu - UCA Santa Barbara; Dr. Mike Willis - University of Colorado Boulder

Flagstaff, AZ

- Investigate and test methods to automate atmospheric correction of Antarctic imagery.
- Collect spectral measurements in Antarctica using the ASD FieldSpec3.
- Identify and process geologic units in training images for cyberinfrastructure team to process at the continent scale.

Monitoring & Mapping Landslides in Myanmar

June 2018 - August 2018

National Aeronautics & Space Administration (NASA) and SERVIR

Huntsville, AL

- Organized and participated in two volunteer scientist "mapathon" events to generate new landslide presence dataset for Myanmar.
- Identified and discussed explanatory variables in susceptibility models and their scalability: manuscript in progress.

Leaf Waxes in Adirondack Lake Sediment, NSF #1636744

October 2016 - May 2018

Dr. Alexander K. Stewart - St. Lawrence University;

Dr. A. Diefendorf, Dr. T. Lowell - University of Cincinnati

Adirondack Park, NY

- Assisted with lake sediment core collection.
- Split, photographed, and sampled core and ran samples for LOI and lipids.
- Linked leaf-waxes to lake sediment, general stratigraphy, and paleoclimate for undergraduate honors thesis.

Progress of Women in Geosciences

June 2016 - April 2018

Dr. Alexander K. Stewart - St. Lawrence University

Canton, NY

- Analyzed departmental data of female geology graduates.
- Evaluated experiences and opinions of peers.
- Compiled research into a talk for GSA, 2016 and into a manuscript published in 2018.

Reaction Wood in Black Spruce Trees

May 2016 - September 2016

Dr. Alexander K. Stewart - St. Lawrence University

Dr. T. Hubbard - Alaska Departments of Geological and Geophysical Surveys

Tonsina, AK

- Assisted in slope-stability survey of remote highway.
- Cored, prepped, dot-counted, and measured ring widths of tree cores.
- Recorded reaction wood presence and analyzed plot for cause of slope movement.
- Compiled research into a poster for GSA, 2017.

AWARDS & RECOGNITIONS

- NASA Internship, 2018
- Faculty Scholar Award, 2018
- Deans List 2014-2015, 2017-2018
- Charles B. Scanlon'10 Outstanding Guide Award, 2018
- St. Lawrence Fellowship, 2016
- St. Lawrence CIIS Grant (supplement), 2016
- Sigma Gamma Epsilon, 2015

SKILLS & CERTIFICATIONS

Equipment

ASD FieldSpec3

Bartington MS3 Meter

Livingstone-Piston Corer

Bolivia Corer

Dionex 350 ASE Machine

Increment Borer

Computer Skills

Python

ENVI

Google Earth Pro

Google Earth Engine

Adobe Illustrator

Microsoft Suite

Certifications & Methods

UVA Advanced Computing Boot Camp, June 2018

Avalanche 1, January 2017

ArcGIS 24 Hour Certification, July 2016

AMGA Climbing Wall Instructor, April 2016

Wilderness First Responder, January 2016

Loss on Ignition

PUBLICATIONS

Eifert, H.A., and Stewart, A.K., in press, Progress of women in the geosciences: insight from a small liberal arts school, *in* Johnson, B., ed., *Women and Geology: Who Are We, Where Have We Come From, and Where Are We Going?:* GSA Special Publication, 17p.

POSTERS & TALKS

Stewart, A.K., Hubbard, T.D., Heinrich, C., **Eifert, H.**, and Leech, M., 2018, Landscape instability, permafrost and remote infrastructure corridors: dendrogeomorphology using black spruce, Alaska, USA: Abstract 131-6 presented at 2018 Annual Meeting, GSA, Indianapolis, IN, 4-7 November.

Stewart, A.K., Hubbard, T.D., Heinrich, C., **Eifert, H.**, and Leech, M., 2018, Landscape instability, permafrost and remote infrastructure corridors: reaction-wood analyses using black spruce, Alaska, USA: World Dendro Conference, Thimpu, Bhutan; Abstracts with programs.

Eifert, H.A., and Stewart, A.K., 2017, Infrastructure projects and their impact on mass movements: dendrogeomorphic evidence from the Trans-Alaskan Pipeline, Tonsina, Alaska: Abstract 153-56 presented at 2017 Annual Meeting, GSA, Seattle, Washington, 22-25 October.

Eifert, H.A., Stewart, A.K., and Musser, M., 2016, Progress of women in the geosciences: insight from a small liberal arts school: Abstract 307-3 presented at 2016 Annual Meeting, GSA, Denver, Colorado, 25-28 September.

FIELD EXPERIENCE

SP & Colton Crater Planetary Analogs

Northern Arizona University

August 2018 - Present

Flagstaff, AZ

- Conduct field reconnaissance of SP & Colton Crater as a planetary analog.
- Contribute to field guide of location.

New Zealand Field Camps

University of Otago

February 2017 - June 2017

Dunedin, NZ

- Two week-long field camps mapping the Maerewhenua and Borland regions.
- Applied general field reconnaissance practices

Adirondack Lake Sediment Sampling

St. Lawrence University

October 2016 - January 2017

Adirondack Park, NY

- Extracted lake sediment cores using Bolivia & Livingstone method in fall & winter.
- Recorded geophysical data using sonar.

Snow Science Course

St. Lawrence University

January 2017

Jackson Hole, WY

- Learned and practiced avalanche search & rescue curriculum at avalanche 2 level and suitable to receive avalanche 1 certification.
- Learned and analyzed snow stability in all avalanche conditions.

Alaska Tree Core Sampling

St. Lawrence University

June 2016

Tonsina, AK

- Used increment borer to sample downslope and perpendicular cores from 30 black spruce pine.
- Assisted in the second half of a slope stability test.

Iceland Glacial Field Methods Course

St. Lawrence University

January 2016 - May 2016

South-central, Iceland

- Reported on the impact of climate change on ecotourism and the Iceland economy.
- Applied general field reconnaissance practices.
- Assessed general geology of south-central region.

Outdoor Program Guide Training

St. Lawrence University

January 2016 - June 2016

Adirondack Park, NY

- Learned and practiced leadership, safety, and risk management in outdoor settings and through expeditions.
- Specialized in technical rock climbing skills including anchor building, rope management, and rescue tactics.

Recreational Rock Ethics Course

St. Lawrence University

January 2016

Joshua Tree, CA

- Learned and practiced technical rock climbing skills including anchor building and rope management.
- Discussed and practiced proper backcountry ethics and safety.

Alaska Geology & Biology Field Course

St. Lawrence University

May 2015

South-central, AK

- Reported on the Great Alaska Earthquake in 1964.
- Applied general field reconnaissance practices.
- Assessed general geology of Prince William Sound and Glennallen area.

Outward Bound Mountaineering Course

Outward Bound

July 2014

San Juan Mountains, CO

- Two week mountaineering expedition including a 48-hour solo in San Juan mountains, Colorado.
- Learned general backcountry skills and practices as well as introductory mountaineering skills such as rope skills, map reading, route finding, and navigation.

WORK EXPERIENCE

Research Assistant

Northern Arizona University

August 2018 - Present

Flagstaff, AZ

- Assist on NSF funded project, ICEBERG (Imagery Cyberinfrastructure and Extensible Building-Blocks to Enhance Research in the Geosciences) part time during classes and full time over the summer.
- Collaborate with a team of twenty two from five universities and multiple disciplines and supervise undergraduate assistant.

Intern

National Aeronautics & Space Association (NASA)

June 2018 - August 2018

Huntsville, AL

- Conducted research on satellite identification and explanatory variables of landslides in Myanmar with SERVIR.
- Attended NASA/RCRCRC Risk Financing Workshop and Marshall Space Flight Center tours, lectures, and events.
- Completed all NASA internship requirements.

Munro Family Climbing Wall Manager

St. Lawrence University

August 2017 - May 2018

Canton, NY

- Ensured climbing facility is open, staffed, and safe for public use.
- Hired and managed staff.
- Promoted and expanded the use of the wall and organized promotional events, parties, and clinics.

Outdoor Program Guide

St. Lawrence University

May 2016 - May 2018

Canton, NY

- Led and inspired students to get involved in the outdoors through trips in and around the Adirondacks (mainly rock climbing).
- Worked with peers and acted as role model to incoming students and assisted with training of new guides.
- Continued personal development of leadership and technical practices through trips & trainings.

Teaching Assistant, Geomorphology

St. Lawrence University

August 2016 - December 2016

Canton, NY

- Graded labs and pre/post tests for geomorphology class.
- Acted as a resource to students in and outside of lab and offered help and answered questions in the field during lab time.

Munro Family Climbing Wall Staff

St. Lawrence University

August 2015 - December 2016

Canton, NY

- Ensured a safe and positive experience for all guests.
- Taught or refreshed necessary belay practices and safety procedures to all climbers as well as advanced clinics.
- Carried out office tasks including registering customers into Rock Gym Pro software and managing rentals.

Climbing & Fitness Belay Staff

The Cliffs Climbing Gym

February 2013 - February 2017

Valhalla, NY

- Worked as a general belayer at the climbing wall to provide safety and advice for customers.
- Performed gym maintenance, retail, and cleaning tasks.
- Communicated and cooperated as part of a team.

Nature Camp Instructor

Teatown Nature Reservation

June 2014 - August 2015

Ossining, NY

- Acted as a role model and inspired children to pursue a passion in science and the outdoors.
- Led hikes, activities, and shared knowledge of the natural world with campers.

VOLUNTEER EXPERIENCE

Little Grasse Farm *Farm Hand*

August 2014 - May 2015

- Assisted in weekend farm tasks and discussed with other programs as part of a community based learning component.
- Continued to volunteer at farm for remainder of the year.

St. Lawrence University Rotaract Club

August 2014 - May 2015

- Fostered leadership and responsible citizenship, encouraged high ethical standards in business and promoted international understanding and peace.
- Assisted in campus events such as relay for life, trash pickup, and fund-raisers.

St. Lawrence University Club SLU Tutoring *Tutor*

August 2014 - May 2015

- Mentored students in grades 5-8 once a week at the Canton Middle School.
- Participated in activities with kids such as playing outside and helping with homework.

EXTRACURRICULAR

- Northern Arizona University Women's Ultimate Frisbee Team *Player*** **August 2018 - Present**
- Play on University ultimate frisbee team.
 - Assist coaches with drills and concepts.
- Texas Showdown Women's Ultimate Frisbee Team *Player*** **April 2018 - Present**
- Play on an elite ultimate frisbee team in Austin, Texas.
 - Commit to independent weekly training & fitness and weekends to fly to various locations for training camps & tournaments.
 - Invited to tryout for the United States of America U24 National Team, November 2018.
- New Zealand Christchurch Chicks Women's Ultimate Frisbee Team *Player*** **March 2017 - July 2018**
- Played on elite ultimate frisbee team at the 2018 World Ultimate Club Championships in Cincinnati, OH, 2017 New Zealand Nationals, and 2017 Australian Nationals.
 - Served as a role model to teach high level concepts to a developing program.
- St. Lawrence University Ultimate Frisbee Team *Captain*** **August 2014 - May 2018**
- Led practices, taught sport to new players, and facilitated a positive and constructive team community.
 - Organized and led team at weekend tournaments.
 - Led by example both on and off the field.
- St. Lawrence University Geology Club *Member*** **October 2014 - May 2018**
- Attended weekly meetings, assisted in the organization of SLUGAC (St. Lawrence University Geology Alumni Conference, held every 3 years), and collaborated with like minded individuals.
- St. Lawrence University LIGHT Theme Cottage *President*** **August 2015 - May 2018**
- Former treasurer, wrote budget proposal, securing 315% budget increase.
 - Facilitated and ensured a positive living environment for house members and led by example in living and sharing theme values.
 - Oversaw all events and programs carried out by the club for the campus community and delegate tasks to other house members.
- Ottawa Stella Women's Ultimate Frisbee Team *Player*** **April 2016 - March 2018**
- Played on an elite ultimate frisbee team in Ottawa, Canada.
 - Committed two nights a week in season to drive across border for practices and most weekends for tournaments in various locations.
- St. Lawrence University Woodcarving Club *President & Co-founder*** **April 2015 - May 2016**
- Co-wrote club and budget proposal to start club and connected with community members for instruction.
 - Organized weekly club meetings, appointed and delegated tasks to executive board, managed materials, promoted membership.
 - Successfully passed on club ownership to underclassmen.

RELEVANT COURSEWORK

Lecture	With Lab	Field Based/Independent
Calculus 1	Dynamic Earth	Alaska: Down To Earth
Rhetoric & Public Speaking	Mineralogy	Modern Recreation & Ethics
Historical Geology	Geomorphology	Guide Training
Glacial Geology	University Physics	Regional Field Studies: Iceland
Drawing 1	Paleontology	Snow Science
Exoplanets	General Chemistry	Field Studies & New Zealand Geology
Remote Sensing	Sedimentology	Geology Directed Studies
	Structural Geology	Senior Honors Thesis
	Petrology	Planetary Analogs: Volcanics
		Graduate Research