

Dr. Jess Gould

Current Affiliation

Postdoctoral Research Associate
Marine and Environmental Sciences
Northeastern University
Boston, MA

Contact Information

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Education

PhD Marine and Environmental Science
Northeastern University, Boston, MA

2018 - 2023

Master of Science in Oceanography
Dalhousie University, Halifax, Nova Scotia

2015- 2017

Visiting Researcher
MARUM, University of Bremen, DE

August-November 2016

**Bachelor of Science Co-op, combined honors in
Marine Biology and Oceanography**
Dalhousie University, Halifax, Nova Scotia

2014

Nantucket Marine and Coastal Ecological Research
University of Massachusetts, Boston
Summer study and research project on Nantucket

July 2013

SEA Summer Session: Ocean Exploration S-242.
SEA Semester, Woods Hole, Massachusetts
4 weeks of academic study in Woods Hole, with 4 weeks
of sailing in the Pacific, **12 credits** earned through BU

May-July 2012

Distinctions, funding & awards

- | | |
|--|-------------|
| ◦ NSERC Alexander Graham Bell Canada Graduate Scholarship*
(\$35,000/year for three years; ranked 2 nd amongst all applicants) | 2020 – 2023 |
| ◦ Climatebase Fellow | 2022 |
| ◦ Marine and Environmental Science Student Symposium top
presentation award (\$250) – Northeastern University | May 2021 |
| ◦ Teaching with Academic Technology Certificate –
Northeastern University | July 2020 |
| ◦ Northeastern University Academic Technology Scholar (\$12,000) | Summer 2020 |
| ◦ Marine and Environmental Sciences Fellowship –
Northeastern University (\$34,000) | 2018 |
| ◦ Research Award (\$5,000) – Northeastern University | 2018 |
| ◦ International Conference of Paleoceanography – Poster Award | 2016 |

- (1 of 12 awarded, sponsored by Nature Geoscience)
- Nova Scotia Innovation and Research Scholarship, 1 year MSc 2016
 - NSERC Canada Graduate Scholarships, Masters (\$17,500) 2015
 - Nova Scotia Innovation and Research Scholarship, Masters (\$10,000 renewable for two years) 2015
 - NSERC Undergraduate Summer Research Award** 2014
 - Science Atlantic Undergraduate Research Award 2014
 - Selected speaker at Science Atlantic Biology Conference 2014
 - Selected speaker at the Dalhousie Cameron Conference 2014
 - Dalhousie Faculty of Science Travel Grant 2014
 - Dalhousie In Course Scholarship 2010
 - Dean's List, Dalhousie University 2009, 2011-2013
 - Dalhousie Entrance Scholarship (\$1,500) 2009

*Deferred to the NSERC PGS Scholarship due to US residency

**Declined for paid internship opportunity at the Gulf of Maine Research Institute

Teaching and Employment

Northeastern University, Boston, MA

June 2023-*Present*

Postdoctoral Research Associate

- Marine macroalgal (seaweed) carbon in the context of carbon sequestration research
- Working in collaboration with climate tech startup *Running Tide*, Portland, ME
- Working in collaboration with WHOI, Woods Hole, MA
- Grant writing, scientific journal publication, acting as session Chair at an international conference, group leader, mentor

Northeastern University, Boston, MA

Summer 2020

Academic Technology Scholar

- Consultant for Northeastern University faculty transition to online learning in Canvas

Northeastern University, Boston, MA

2018-2019

Teaching Assistant/ Lab instructor

- TA for ENVR1200 Dynamic Earth (Fall 2018)
- TA for ENVR3600 Oceanography (Fall 2019)
- Conduct three-hour laboratories once per week
- Assist in the design of laboratory protocols
- Grading of lab reports and tests

Nova Scotia Community College, Halifax Nova Scotia

January-May 2015

Oceans Technology- Research Assistant

- Analysis of underwater video and seabed imagery including substrate description and identification of benthic marine macro fauna

Dalhousie University, Halifax Nova Scotia

August 2014-May 2015

Research Assistant

- Laboratory and field research assistant
- Participation in the Bedford Institute of Oceanography Atlantic Zone Monitoring Program Research Expedition

Gulf of Maine Research Institute, Portland Maine

June-August 2014

Casco Bay Monitoring Program Research Intern

- Laboratory and field research intern
- Participation in a newly implemented long term monitoring program for the Casco Bay ecosystem
- Analysis of fish energetics and condition factor
- Use of Bomb Calorimeter for fish energy content analysis
- Exposure to acoustic instrumentation and analysis

Dalhousie University, Halifax Nova Scotia

September-December 2013

Teaching Assistant/ Lab instructor

- TA for Biology for Engineers 1003 laboratory
- Conduct three-hour laboratories once per week
- Assist in laboratory protocol and analysis
- Grading of lab reports

McGregor GeoScience Limited, Bedford, Nova Scotia

2012/2013

Junior Marine Biologist/ Environmental Scientist

- Laboratory analysis of seabed biological samples including species sorting and assistance with faunal identification and data analysis of grab samples.
- Analysis of underwater video and seabed photographs including substrate description and species identification
- Acquired an Aquatic Insects Taxonomic Certification
- Stereomicroscope use
- Compilation of laboratory reference collections of benthic specimens
- Participation in preparation of project reports
- Research and development initiatives

Environment Canada AEMRD, Burlington, Ontario

May-August 2011

Coop Student Research Technician

- Laboratory analysis of water samples for water quality and optical property determinations
- Processing, analysis and validation of remote sensing satellite imagery of inland water
- Participation in and preparation for field work
- Processing and organization of collected data

Publications

In progress

1. **Gould, J.**, Stubbins, A., Bell, T. (2024) Carbon capture by seaweeds: uncertainty in the state-of-the art and the importance of DOC. Target journal: *Limnology & Oceanography Letters*.

Published

1. **Gould, J.** & Ries, J. (2023) Linear extension and calcification rates in a cold-water, crustose coralline alga are modulated by temperature, light, and salinity. *Limnology & Oceanography*. doi: 10.1002/lno.12474

2. **Gould, J.**, Halfar, J., Adey, W., Ries, J. (2022). Growth as a function of sea ice cover, light and temperature in the Arctic/Subarctic coralline C. *Compactum*: A year-long in situ experiment in the High Arctic. Submitted March 2022 to *Frontiers in Marine Science*.

3. **Gould, J.**, Kienast, M., Dowd, M., Schefuß, E. (2019). An Open-Ocean Assessment of Alkenone δD as a Paleo-Salinity Proxy. *Geochimica et Cosmochimica Acta*, 246; 478-497. doi: 10.1016/j.gca.2018.12.004

4. **Gould, J.**, Kienast, M., Dowd, M. (2017). *Investigation of the $U^K_{37'}$ vs. SST relationship for Atlantic Ocean suspended particulate alkenones: An alternative regression model and discussion of sampling bias. Deep-Sea Research Part I.*

5. Binding, C. E., Greenberg, T. A., Watson, S. B., Rastin, S. and **Gould, J.** (2015), Long term water clarity changes in North America's Great Lakes from multi-sensor satellite observations. *Limnology and Oceanography*. doi: 10.1002/lno.10146

Presentations

Gould, J. (April 2023) “*Improved understanding of high-latitude crustose coralline algal growth and application as high-resolution environmental archives*”, Northeastern University Dissertation Defense

Gould, J., Ries, J., Adey, W., Halfar, J. (March 2022) “*A year-long in-situ monitoring experiment for improved application of coralline algae as environmental archives*”, Ocean Sciences Meeting 2022, Virtual

***Gould, J.** (May 2021) “*Understanding Arctic Ocean coralline algae growth: implications for both past ocean reconstruction and future environmental change*” Northeastern University Marine and Environmental Science Graduate Student Symposium, Boston, MA

*Top student presentation awardee (\$250)

Gould, J. (September 2020) – *Guest Lecturer* ENVR 3125 Global Oceanic Change, Northeastern University, Boston, MA

Gould, J. (February 2020 – *Invited Speaker*) “*Calcareous Algae as Oceanographic Archives*”, Brown University, Department of Earth, Environmental, and Planetary Sciences – Climate and Environment Lunch Seminar, Providence, RI, USA.

Gould, J., Kienast, M., Dowd, M., Schefuß, E. (December 2018) “*Large-Scale Open-Ocean Algal Biomarker Proxy Validation: The Alkenone Paleo-Salinity Proxy δD_{K37}* ”, AGU Fall Meeting, Washington, DC, USA

Gould, J., Kienast, M., Dowd, M., Schefuß, E. (2018) “*An Open-Ocean Assessment of Alkenone δD as a Paleo-Salinity Proxy*”, Goldschmidt, Boston, MA, USA

Gould, J., Kienast, M., Mohtadi, M., Schefuß, E. (2018) “*Hydrogen Isotopes of an Algal Biomarker as a Paleo-Salinity Proxy: An Open-Ocean Validation*”, Oceans Sciences Meeting, Portland, OR, USA

Gould, J., Kienast, M., Schefuß, E. (2017) “*How Salty Was It? Investigation of a biomarker proxy for paleo-salinity,*” Conference of Dalhousie Oceanography Students (CDOGS)

Gould, J., Kienast, M., Dowd, G., Schefuß, E. (2016) “*Biomarker proxy calibration along the AMT transect: Alkenone $Uk'37'$ and δD* ”, 12th International Conference on Paleoceanography (ICP12), Utrecht, The Netherlands

Gould, J., Kienast, M., Dowd, M. (2016) “*Investigation of the $Uk'37$ - SST relationship for Atlantic Ocean suspended particulate alkenones: An alternative regression model with implications for $Uk'37$ paleothermometry*”, Ocean Sciences Meeting, New Orleans, USA

Gould, J., Kienast, M., Dowd, M. (2016) “*Investigation of the $Uk'37'$ Paleothermometer for Atlantic Ocean suspended particulate alkenones: An alternative regression model*”, Conference of Dalhousie Oceanography Students (CDOGS)

Gould, J. “*Investigation of possible non-thermal effects on $Uk'37$ values from Atlantic and Western Equatorial Pacific suspended particulate samples: Implications for $Uk'37$ Paleothermometry*” presented at the Dalhousie Cameron Conference (February 2014), the Science Atlantic Biology Conference (Mount Saint Vincent University, March 2014) and at the Conference of Dalhousie Oceanography Students (CDOGS) March 2015

Service, outreach, and workshops

- **Reviewer** for Geochemistry, Geophysics, Geosystems (AGU Publications); EGU
- **Mentor:** Mentor and program volunteer for BEACHES (Bridging Each Applicants Chance for Higher Education Success) program Northeastern University (2022; 2023) NU Marine Science Peer Mentoring Program - *Mentor* (January 2002 – *Present*); Katie Lee (visiting undergrad Wellesley College Summer 2019); Jessica Wong (undergrad Dalhousie 2021-*Present*), Alessio Scurci (MSc student University of Toronto 2021 – *Present*)
- **Session leader:** ALSO Summer Meeting 2024
- **Guest speaker:** School-to-sea Lynn Public Schools program (May 2021 – *Present*); Department of Earth, Environmental & Planetary Sciences -Brown University (2020)

- **Panelist:** Northeastern University Graduate Program PhD panel (2021-2023)
- **Workshop attendee:** You Are Welcome Here – Northeastern University (Virtual Workshop, October 2021); A Sea Change – Oceanographers Learn from Psychologists about Systemic Racism in America (Virtual Workshop, WHOI, November 2020); Northeastern University – Canvas and Online Learning Module (July 2020); Northeastern University – Diversity and Inclusion Mentoring Workshop (January 2020); Manomet “The Future of Fishing Event” (July 2018); The Canadian Women’s Club of Boston Canada Day Event (June 2018, 2019, 2021); Save the Harbor/Save the Bay “Destination Boston Harbor Gala” (March 2018); Society for Women in Marine Science Meeting (March 2018)

Sea-going experience

RV Vagabond – Arctic Bay, Nunavut

September 2020

Research Scientist

- Lead scientist onboard the RV Vagabond stationed in Arctic Bay, NU
- Set up a year-long *in situ* experiment for monitoring crustose coralline algae growth
- Collection of long-lived algal specimens for paleoceanographic reconstruction
- This work is directly related to my dissertation work at Northeastern University

RV SONNE – SO256

April-May 2017

Research Scientist

- Participation in SO256 cruise from Auckland, NZ to Darwin, AU
- Filtration of water samples for suspended particulate matter for hydrogen isotope analysis
- Assistant CTD operator, water sample collection from niskin bottles (CTD rosette) for nitrogen isotope analysis
- Assist with sediment core retrieval and sampling

Dalhousie University/ Bedford Institute of Oceanography

Fall and Spring 2014/15,

Offshore Volunteer

- Participation in the AZMP biannual research cruise offshore Nova Scotia (3 weeks)
- Filtration of water samples for suspended particulate matter for hydrogen isotope analysis and alkenone concentration
- Water sample collection from niskin bottles (CTD rosette) for nitrogen isotope analysis

Volunteer Experience

SeaBin Project: For Cleaner Oceans

January 2022 - *Present*

- Scientific data collection consultant
- Location scouting

“School-to-Sea” – Lynn Public Schools/Northeastern University

May 2021 - *Present*

- Guest speaker for virtual field trip programs

Mass Audubon - Wellfleet Bay Wildlife Sanctuary

July 2018 - *Present*

- Terrapin Conservation Volunteer

Professional Affiliations

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|--|--------------|
| ◦ Member of Northeastern University Marine and Environmental Science Student Association | 2018-2023 |
| ◦ Member of AGU | 2015-Present |
| ◦ Member of ASLO | 2016-Present |
| ◦ Member of Geochemical Society | 2020-Present |
| ◦ Dalhousie Oceanography Student Association- Secretary | 2015-2017 |
| ◦ Member of Dalhousie Oceanography Society | 2013-2018 |
| ◦ Member of the Marine Technology Society | 2012-2016 |
| ◦ Member of the Dalhousie Peer Partnership Program (Mentor) | 2013 |
| ◦ Member of BioNova | 2010-2018 |
| ◦ Member of Dalhousie Science Society | 2009-2018 |
| ◦ Member of Dalhousie Marine Biology Society | 2009-2014 |

Skills

Laboratory Skills:

- Laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS), organic lipid extraction and analysis, gas chromatography (GC-FID), mass spectrometry, isotope ratio mass spectrometry (GC-IRMS), elemental analyzer isotope ratio mass spectrometry (EA-IRMS), dissolved organic carbon analysis, carbonate chemistry characterization (VINDTA), scanning electron microscopy coupled with energy dispersive X-ray spectroscopy (SEM-EDS), fluorometric chlorophyll measurement, thermosalinograph and weather station data, microscopy, titration, chromatography, spectrometry, centrifugation, dissection, gel electrophoresis, spectrophotometry, particulate absorption measurement, plating techniques, culturing, invertebrate identification, bomb calorimetry

Sea-going Skills:

- CTD-Niskin Carousel deployment and sampling, satlantic irradiance sensor, AC-9 unit, Acoustic Doppler Current Profiler, phytoplankton net tow deployment, zooplankton net tow deployment (neuston and subsurface), interpretation of CHIRP sub-bottom profiler, Acoustic transducer and receiver calibration

Computer Skills:

- R Statistical Programming
- Data mapping using OceanDataView
- HOBOWare
- AZtec
- OlyVIA – Olympus Life Science
- Microsoft Office: Excel, Word, Powerpoint, OneNote
- Exposure to Genbank, STRUCTURE
- Exposure to EOLISA, BEAM 4.9.0.1/VISAT

Other Skills:

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|---|------|
| ◦ Aquatic Insects Taxonomic Certification | 2012 |
| ◦ Operation of J-Frame and hydraulic winch for equipment deployment | 2012 |

- Coastal and offshore piloting 2012
- Radar use 2012
- SCUBA certified 2009