**Frances Crable**

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Fifth year Ph.D. candidate at the University of Illinois at Chicago. My research aims to assess the impact freshwater systems on Arctic Ocean biogeochemistry and phytoplankton primary productivity. My research also focuses on the effects of natural variability and projected climate change on ocean primary productivity through laboratory culture experiments and remote sensing data.

## EDUCATION

**University of Illinois in Chicago** – Graduate College

Ph.D. Candidate, Biological Sciences – Gonzalez-Meler Stable Isotope Lab

GPA: 3.75/4

* NSF Graduate Education for Academically Talented Students Fellow
* NSF Bridge to the Doctorate Fellow
* UIC Pipeline to Inclusive Faculty Fellow

**University of Illinois in Chicago** – College of Liberal Arts and Sciences

BSc, Biological Sciences

GPA: 3.25/4

**ACADEMIC PROJECTS**

Arctic Thalassisosira Culture Experiment January 2022 - Current

Laboratory culture experiments to explore how changes associated with ocean acidification and sea ice loss affect photophysiology, carbon content, C/N isotopic fractionation, and photosynthesis/respiration in a common arctic phytoplankton species.

Hurtigruten - Roald Amundsen Expeditions August 2022, August 2023

Yearly summer expeditions through the Canadian Arctic Archipelago in collaboration with the Norwegian Institute for Water Research, with aims to characterize regional productivity, nutrient dynamics and determine the regional sources and composition of organic matter and freshwater inputs.

Northwest Passage Project Aug 2018 & July 2019

NSF funded expedition into the Northwest Passage in collaboration with the University of Rhode Island and the Inner Space Center to understand how waters of the Canadian Arctic Archipelago have changed because of climate change.

**ACADEMIC AWARDS**

* UIC Biology Department - Diversity and Inclusion Award  May 2022

**PROFESSIONAL AFFILIATIONS**

* The American Geophysical Union
* Black In Marine Sciences
* Black Women in Ecology, Evolution, and Marine Science (BWEEMS)

## PUBLICATIONS

**Crable, F., C. Garcia-Edell, S. Umar, B. Loose, M. Berkelhammer, A.L. King, M. Gonzalez-Meler Elucidating coastal oceanic processes in the Canadian Arctic Archipelago using oxygen, carbon, and nitrogen isotopes** Under review for publication at JGR Oceans Dec 2023

**Crable, F., C. Garcia-Edell, T. Ewa, H. Raziuddin, and S. Umar (2020) Once Again into the Northwest Passage, Eos 101** [**https://doi.org/10.1029/2020EO144059**](https://doi.org/10.1029/2020EO144059)Published May 2020

## PRESENTATIONS

**Hurtigruten – Roald Amundsen cruise guest lecturer** August 2022, 2023

Presented lectures on arctic climate change, phytoplankton and sampling techniques aboard arctic northwest passage cruise**.** Held onboard workshops and discussion sessions on phytoplankton collection, ID and microplastics.

**Understanding Phytoplankton Nutrient Utilization in the Canadian Arctic Archipelago**

Poster Presentation at Louis Stokes Midwest Regional Center of Excellence Conference February 2023

**Elucidating coastal oceanic processes in the Canadian Arctic Archipelago using oxygen, carbon, and nitrogen isotopes**

Poster Presentation at the ILSAMP STEM Symposium 2023 February 2022

**SheddTalksMini – A Conversation with an Arctic Explorer** August 2021

Recorded interview with Shedd Aquarium in Chicago, IL

[www.youtube.com/watch?v=3wqij9YtHwk&t=19s](http://www.youtube.com/watch?v=3wqij9YtHwk&t=19s)

**TedxChicago Virtual Salon: Next in Education** September 2020  
Recorded discussion with TedxChicago

[www.youtube.com/watch?v=ffW0B\_8hJFw](https://www.youtube.com/watch?v=ffW0B_8hJFw)

**Multi-Element Oceanic and Atmospheric Summer Isoscape of the Canadian Arctic Archipelago and Implications for Biogeochemical Cycling**

Poster Presentation at the Ocean Sciences Meeting 2020 – San Diego February 2020

**Ocean Explorations from Magellan to Today in a Changing Climate**

Oral Presentation at Instituto Cervantes of Chicago – Chicago December 2019

**WORKSHOPS**

**Best practices for collection and processing of ship-based underway flow through optical data workshop at the Darling Marine Center** August 2022

* Hands-on experience in setting an inline system on a ship or dock, logging and processing of the data collected
* Built knowledge of optical sensors and their principles of measurements, calibrations, installation, and best practices for quality control while at sea and during data processing.

**Hellenic Center for Marine Research Mesocosm Workshop** May 2022

* Learn best practices of chlorophyll-a and carbonate sensors in oligotrophic conditions.
* Opportunity to meet and learn from engineers developing new sensors
* Hands-on & guided experience in learning to use new technology and conducting mesocosm experiments.

## SERVICE & COMMUNITY

**UIC Biology Diversity, Equity, Inclusion and Justice Committee** May 2020 – Current

* Co-created a DEIJ website for UIC biology department.
* Organized UIC biology department Midwest Books for Prisoners book drive

**DuSables Scholars Mentor** Sept 2021 - Current

* Speaker to DuSables Scholars class about navigating campus and STEM degree programs as a student of color
* Mentoring scholarship students through academic life and STEM research.
* Guiding students in stable isotope research, lab activities, and presenting their own research

**Black Girl Environmentalist**  April 2023 – Current

* Active Chicago hub member
* Panel speaker at “The Eco-Artistry Experience” discussing the power of art as a means of climate action.

**Argonne/ACT-SO High School Research Program (ARP)**  Dec 2023

* Guest speaker at Argonne National Laboratory for ACT-SO student enrichment program, presenting on my PhD journey and providing student project feedback.

**Shedd Aquarium - Shedd Stewards & Water Quality Lab Volunteer** Feb 2016 - Dec 2017

* Collected samples from cetacean systems and conduct water quality testing for nitrogen cycle and other related parameters.
* Helped teach middle/high school students’ concepts of stewardship and sustainability.

**REFERENCES**

**Miquel A. Gonzalez-Meler** – Department of Biological Sciences UIC

Ph.D. Program Co-Advisor | [mmeler@uic.edu](mailto:mmeler@uic.edu)

**Andrew King** – Norwegian Institute of Water Research

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**Theresa Christenson** – UIC Graduate College

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