

# Cara B. G. James

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updated: Oct 2023

## bio:

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I research the environmental impacts of deep-sea mining via laboratory experiments on turbulent fluid and particle flows. My goal is to understand and predict how deep-sea mining may pollute the water column both physically with particles, and chemically via dissolution of metals. I am fascinated by the scientific questions that surround deep-sea mining, but also the social and political aspect of governing resource extraction in international waters.

## education & research:

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2022 - Now      **PhD Geophysics, University of British Columbia**  
**Research:** Environmental impacts of particulate clouds produced during deep-sea mining.  
*Supervisor:* [Mark Jellinek](#)

2022              **Research Internship, l'Université Clermont-Auvergne, Laboratoire Magmas et Volcans**  
**Research:** Laboratory experiments on analog volcanic plumes with varying vent geometries  
*Supervisor:* [David Jessop](#)

2020 - 2021      **MSci Earth Sciences, University of Cambridge**  
**Research:** Particle separation from turbulent particle plumes in a crossflow  
*Supervisor:* [Andy Woods](#)

2017 - 2020      **BA Natural Sciences, University of Cambridge**  
Earth Sciences, 'minor' in Chemistry & Physics  
**Research:** Geological Mapping of the Cantabrian region of Northern Spain

## science communication, outreach & policy:

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2023 - Now      **Mentorship program member, Deep Ocean Observing Strategy (DOOS)**

- Mentee of [DOERs program](#) ‘foster a new generation of leadership to guide deep-ocean observing and research’
- 2023 – Now      **Working Group Member, Deep-Ocean Stewardship Initiative**
- [Minerals working group](#), supporting attendees who participate in International Seabed Authority Council meetings
- 2023              **Introduction to Ocean Governance, [COBRA](#)**
- Two-day interactive workshop “Insights into Ongoing Policy Processes and Lessons for Early Career Professionals”
- 2023              **Heavy Metal: Earth’s Minerals and the Future of Sustainable Societies, UBC Graduate Course**
- Jointly taught by UBC Schools of Public Policy, Mining Engineering, Law, & Earth Sciences
  - Examines the interdisciplinary roles of scientists, engineers, policy makers, & lawyers in the transition towards sustainable energy systems
- 2022 – Now      **Social Media Manager, UBC Department of Earth, Ocean & Atmospheric Sciences**
- Plan, create and schedule audience specific content across various social media platforms
  - Videography projects (filming and editing) documenting research and innovations from the department
- 2022              **Young Voices of Science, Hubbard Brook Foundation**
- 2-month series of science communication workshops for environmental science students

**positions of responsibility:**

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- 2023 – Now      **Graduate Council Treasurer, UBC Department of Earth, Ocean & Atmospheric Sciences**

- 2022 – Now      **Faculty Graduate Student Representative, UBC**  
*Department of Earth, Ocean & Atmospheric Sciences*
- 2022 – Now      **Department Representative, UBC Graduate Student**  
*Society (GSS) Council*
- 2022 – 2023     **Graduate Council President, UBC Department of**  
*Earth, Ocean & Atmospheric Sciences*
- 2019 – 2021     **President & Founder, The Amazons sports society**  
*for women, non-binary and trans individuals of*  
*Jesus College, University of Cambridge*
- 2019 – 2020     **President, Cambridge University Athletic Club**  
*(track and field varsity team)*

**teaching & supervision:**

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- 2023              **Undergraduate Supervision, University of British**  
*Columbia*  
Shreya Gangadharan
- Guiding laboratory experiments, computational analysis, and synthesis of academic papers
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- 2022-2023       **Graduate Teaching Assistant, University of**  
*British Columbia*
- EOSC223: Field Techniques & Geological Mapping**
- 7 day field trip covering basics of geological mapping
  - Sedimentology, volcanology, igneous deposits, geomorphology and landscape processes.
- SCIE113: First-year Seminar in Science**
- Science in society, scientific process, communicating scientific concepts
  - Lead weekly discussions of a wide range of scientific papers covering multiple fields.

**skills:**

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technical:       Python, MatLab, LaTeX, Microsoft Office Suite

media: Adobe Illustrator, Premiere Pro (video and sound editing), Canva, Social Media Management

languages: English - native  
French - full working proficiency  
Spanish - conversational  
Dutch - conversational

**awards and scholarships:**

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2023 - 2026 **Vanier Scholarship**, *National Sciences and Engineering Research Council of Canada*  
CAD \$50,000/yr

2022 - 2026 **Four-year Fellowship**, *University of British Columbia*  
CAD \$18,000/yr

2022 - 2026 **President's Academic Excellence Initiative PhD Award**, *University of British Columbia*  
CAD \$1,500/semester

2022 - 2026 **Faculty of Science PhD Tuition Award**, *University of British Columbia*  
CAD \$6,000/semester

2022 - 2026 **International Tuition Award**, *University of British Columbia*  
CAD \$3,200/semester

2021 **Prize for Part III Natural Sciences**, *Jesus College, University of Cambridge*  
£120

2021 **Poster Prize (2<sup>nd</sup> place)**, *Sedgwick Club Conference*  
£40

2020 **Prize for Part II Natural Sciences**, *Jesus College, University of Cambridge*  
£120

2019 **Jesus College research & travel grant**, *Jesus College, University of Cambridge*

£550

2019                    **Geological Mapping Fund, Cambridge Arctic Shelf Programme (CASP)**  
£400

**publications:**

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*in prep*                    R. Deberdt, **C.B.G. James**. Self-governance at depth: The International Seabed Authority and verification culture of the deep-sea mining industry. (*tbc. Resources Policy*)

2022                    **C.B.G. James**, N.Mingotti, A.W.Woods. On particle separation from turbulent particle plumes in a cross-flow. *Journal of Fluid Mechanics*, 932, A45.