



# Eurofleets<sup>+</sup>

An alliance of European marine research infrastructure  
to meet the evolving needs of the research and industrial communities

# EUROFLEETS+ FINAL CONFERENCE

PORO-CLIM: Project successes and outlook  
*RV Celtic Explorer CE21008*



UNIVERSITY OF  
BIRMINGHAM



GEUS

**DIAS**

Institiúid Ard-Léinn | Dublin Institute for  
Bhaile Átha Cliath | Advanced Studies

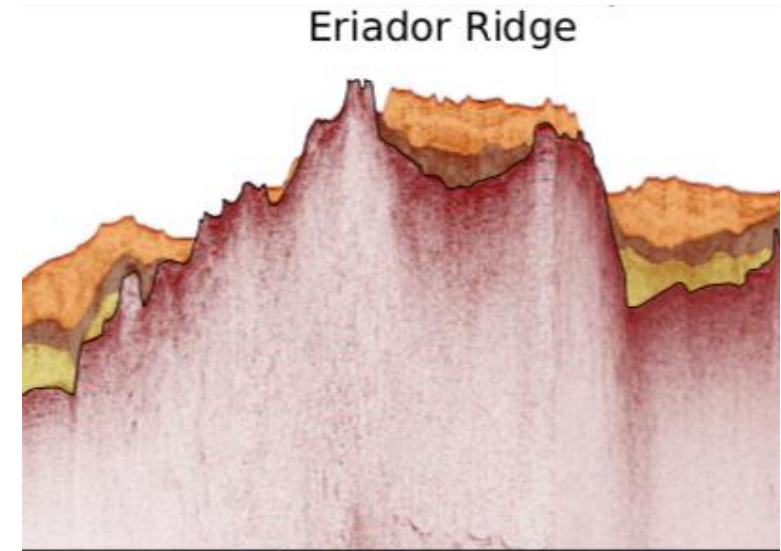
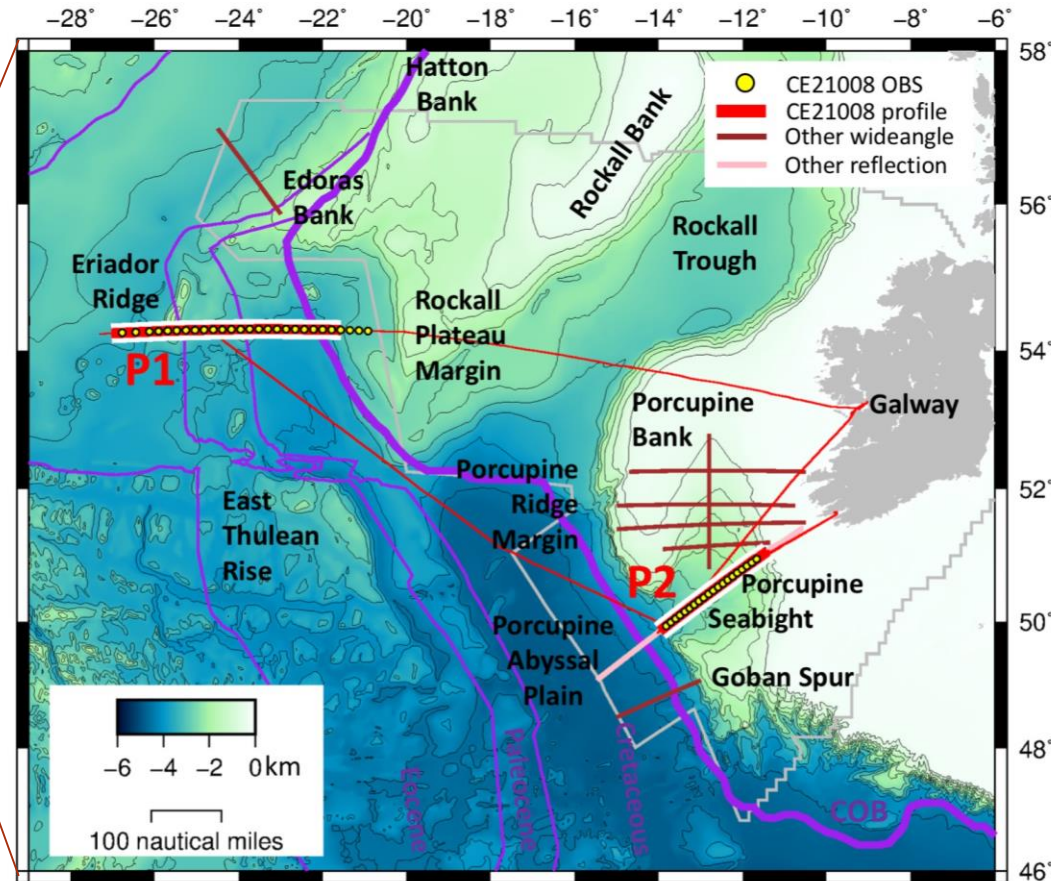


*Foras na Mara*  
*Marine Institute*



# PORO-CLIM:

POrcupine and ROckall margins inform deep-time CLIMate



*Did the North Atlantic Igneous Province trigger or maintain the Paleocene/Eocene Thermal Maximum ?*



# Team PORO-CLIM



## Shipboard Science Party of 11

- 8 nationalities
- 6 early career researchers
- 4 women

### Senior Scientists:

*Stephen M Jones*

*John R Hopper*

*Brian O'Reilly*

*Thomas Funck*

*Per Trinhammer*

*U Birmingham, UK*

*GEUS, Denmark*

*DIAS, Ireland*

*GEUS, Denmark*

*U Aarhus, Denmark*

### PhD Researchers:

*Matt Allison*

*Hazel Knight*

*Ibrahim Yusuf*

*U Birmingham, UK*

*U Birmingham, UK*

*U Birmingham, UK*

### ECR Outreach Team:

*Erica Krueger*

*Benjamin Couvin*

*Niamh Faulkner*

*Haleh Karbala Ali*

*TCD, Ireland*

*UCD, Ireland*

*TCD, Ireland*

*DIAS, Ireland*

### Partners:

*David Van Rooij*

*Aggie Georgiopolou*

*Nicky White*

*Tim Reston*

*Rob Hardy*

*U Ghent, Belgium*

*U Brighton, UK*

*U Cambridge, UK*

*U Birmingham, UK*

*Tonnta Energy, Ireland*

**Talk at 14:10 Today !**  
**+ poster presentation**



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Learner-led science communication from the  
open sea: the PORO-CLIM expedition

Erica Terese Krueger

*PhD Candidate, Trinity College Dublin*

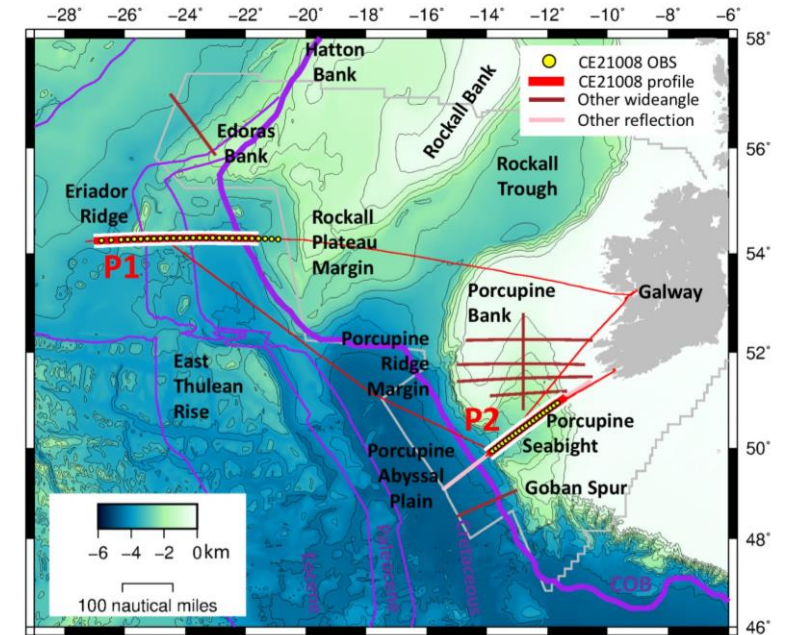




# PORO-CLIM Expedition



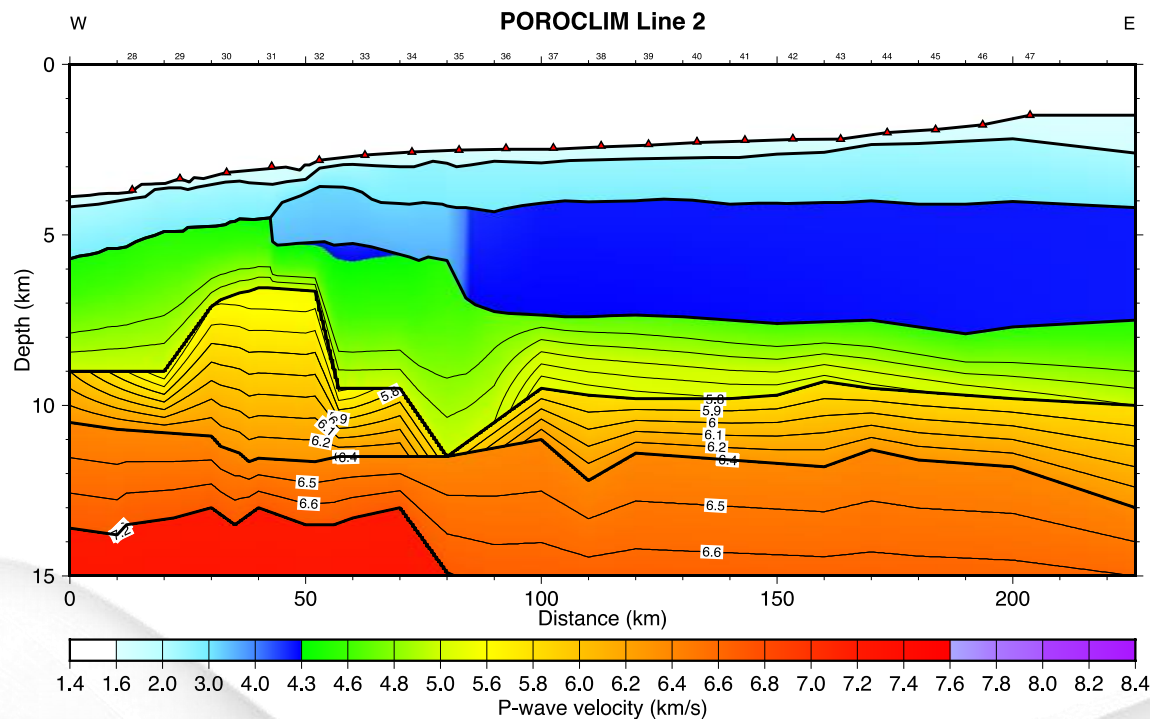
May 2021, RV *Celtic Explorer* CE21008



- EuroFleets+ (EU Horizon 2020) funded 12 ship days plus mobilization costs
- Levered further 14 ship days from Irish Marine Research Programme
- Levered €657,000 for acquisition equipment and initial work-up
- Total project value: €1.2M, including 26 ship days



# Results: PORO-CLIM Line 2



## Aim

- To document the process of continental break-up when volcanic production is limited, by expanding and completing OBS-MCS mapping in Porcupine Basin
- To measure how sea-water leaks into and reacts with mantle rocks; this process is an important part of the plate tectonic cycle, as well as a potential carbon sequestration mechanism

## Achievements

- Work in progress: Ibrahim Yusuf's PhD began Oct 2022
- Preliminary crustal velocity model shows extreme crustal thinning and mantle serpentization

See Ibrahim Yusuf's poster for details



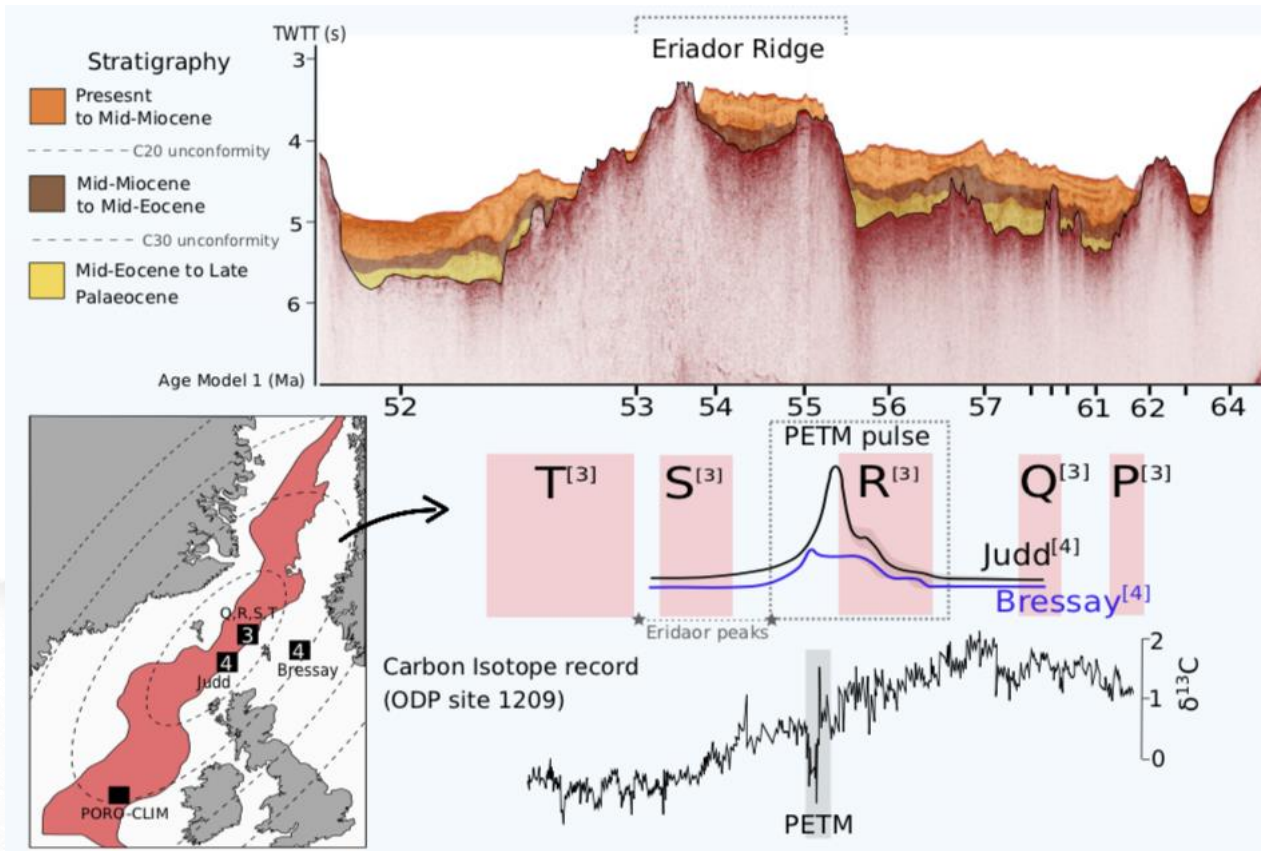
# Results: PORO-CLIM Line 1

## Aim

Did the North Atlantic Igneous Province trigger or maintain the Paleocene/Eocene Thermal Maximum ?

## Achievements

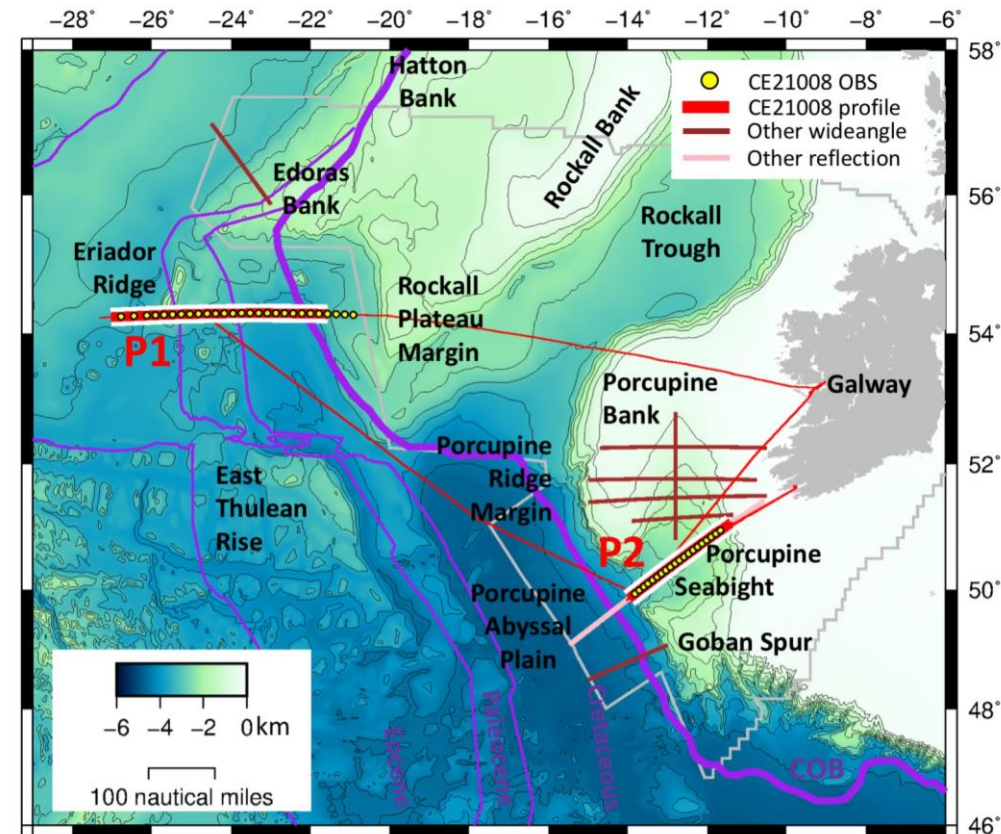
- Line 1 provides complete waxing and waning cycle of Large Igneous Province volcanism, for first time, anywhere in the world
- Line 1 provides first image of volcanic pulse that may have driven PETM climate change, closest natural analogue to anthropogenic warming
- Results suggest that North Atlantic LIP *was* a major driver of PETM global warming
- Hazel Knight PhD, completing 2025



See Hazel Knight's poster for details



# PORO-CLIM: Outputs and Outlook



*“Specific deliverables by 1–2 years following cruise return are: ... (v) one or more grant proposals to public funding bodies (e.g. UK NERC, Leverhulme; Ireland iCRAG) to lever additional funding for staff to complete work on objectives O3–O8.”*

- PORO-CLIM data supports 2 PhD research projects up to 2026, including additional UK NERC funding
- Levered 3 new research projects (UK NERC; Ireland) worth £4.6M and 63 ship days: IMPULSE, C-FORCE, PORO-CLIM-2
- Multiple national and international conference presentations
- Papers in preparation on both science and outreach activities



# Thanks for listening !



Non-alcoholic "Cheers!" from the PORO-CLIM science party



POROCLIM



This project has received funding from the EU H2020 research and innovation programme under Grant Agreement No 824077



... and don't forget ...  
**Outreach talk at 14:10 Today !**  
+ poster presentations

