

# Dr Lorna Kearns

POSTDOCTORAL FELLOW

Jackson School of Geosciences, University of Texas at Austin

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## Education and Work

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### Postdoctoral Fellow

UNIVERSITY OF TEXAS AT AUSTIN

Austin, USA

2022-Present

- NSF Funded Project: Was There a Shift Toward Small, Non-Fossilizing Plankton after the End of the Cretaceous Mass Extinction?

### Johanna M. Resig Foraminiferal Research Fellow

UNIVERSITY OF SOUTHAMPTON

Southampton, UK

2021-2022

- Cushman Foundation funded Project
- Title: A multi-scale investigation into the impact of abiotic changes on ecological communities.

### PhD in Paleoecology

UNIVERSITY OF SOUTHAMPTON

Southampton, UK

2017-2021

- SPITFIRE Funded PhD Researcher in Palaeoceanography
- Thesis title: The Correspondance of morphological and geochemical trait dynamics in shifting plankton communities

### Master of Research (MRes) with distinction in Geology and Geophysics

UNIVERSITY OF SOUTHAMPTON

Southampton, UK

2016-2017

- Thesis title: Mg/Ca variability between morphotypes of Globigerinoides ruber and its implications for both morphological based species identification and palaeoceanographic studies

### BSc (Hons) Geological Sciences with Industrial Placement

UNIVERSITY OF LEEDS

Leeds, UK

2012-2016

- Final year project: Mapping and palaeoenvironmental analysis of Eocene turbidite deposits within the Ainsa Basin, Spanish Pyrenees

### Education Assistant

FIELD STUDIES COUNCIL (FSC)

Millport, Scotland

2014-2015

- Teaching assistant for outdoor education fo Primary School to Masters level courses
- Labratory Technician

## Grants and Awards

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### Johanna M. Resig Foraminiferal Research Fellow

CUSHMAN FOUNDATION

\$15000

2021-2022

- A multi-scale investigation into the impact of abiotic changes on ecological communities

### TMS Grant in Aid

THE MICROPALAEONTOLOGICAL SOCIETY

£500

2020

- Aid the attendance of Crossing the Paleotological-Ecological Gap (CPEG) meeting

### SPITFIRE Research Scholarship

SPITFIRE, UNIVERSITY OF SOUTHAMPTON

£6000

2020

- Funding for a 3 month research project with Prof. Brian Huber at the Smithsonian Museum
- Cancelled due to COVID-19

### TMS Travel Grant

THE MICROPALAEONTOLOGICAL SOCIETY

£100

2019

- Aid the attendance of TMS Meeting at BGS Keyworth

### BES Travel Grant

BRITISH ECOLOGICAL SOCIETY

£500

2019

- Aid attendance at International Conference of Paleoclimatology (ICP), Sydney ,Australia

### Best Student Talk

THE MICROPALAEONTOLOGICAL SOCIETY

2018

- Talk entitled: Intraspecific trace element, stable isotope and morphological variability in Globigerinoides ruber

### TMS Travel Grant

THE MICROPALAEONTOLOGICAL SOCIETY

£100

2018

- Aid the attendance of TMS Meeting at University of Leeds

## Urbino Summer School of Paleoclimate Scholarship

£1200

ECORD

2018

- Aid attendance at the Urbino Summer School of Paleoclimate

## TMS Travel Grant

£100

THE MICROPALAEONTOLOGICAL SOCIETY

2017

- Aid the attendance of TMS Meeting at Natural History Museum

## SPITFIRE Doctoral Training Grant

NATURAL ENVIRONMENTAL RESEARCH COUNCIL (NERC)

2017-2022

- Full stipend and research funding for duration of PhD

## Fieldwork and Shipboard Experience

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### Brazos River Sampling

Texas, USA

SEDIMENTARY LOGGING, OUTCROP SAMPLING FOR MICRO AND MACROPALAEONTOLOGICAL ANALYSIS

2022

### DY0847 Research Cruise

Falkland Plateau, South Atlantic

PISTON CORING, FORAMINIFERA BIOSTRATIGRAPHY, CORE DESCRIPTION, PISTON CORING, CORE SPLITTING, MULTIBEAM

2018

SURVEYING, MAGNETOSTRATIGRAPHY

## Training and workshops

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### Organizer of Geochemistry Workshop

Online

THE MICROPALAEONTOLOGICAL SOCIETY

Nov 2020

### Science communication and writing workshop for palaeontologists

Online

BRITISH ECOLOGICAL SOCIETY

Nov 2020

### Urbino Summer School in Palaeoclimate

Urbino, Italy

ECORD

July 2018

### NHM Advancing computational and data literacy course

London, UK

BBSRC

June 2018

### ECORD Training course: Virtual Drill Ship experience

Bremen, Germany

ECORD

April 2018

## Teaching Experience

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Online **SOES 1015**: Statistical Computing for Marine Science

Online **SOES 1015**: Data Literacy and Analysis

Lab **SOES 2036**: Quantitative methods in Marine Science

Lab **SOES 1009**: The Living Earth

Field **SOES 2032**: Paleobiology

## Skills

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### Computing

Excel, Word, Powerpoint, Outlook, Zoom, Microsoft Teams

### Analysis

R, Excel, Linear models, PCA, Generalized linear mixed effects models, Clustering analysis, Anova

### Data Visualization

ggplot, Affinity Designer, CorelDraw, Adobe Illustrator, Dragonfly

### Imaging

SEM, ImagePro, ImageJ, Micro-CT scanning, Dragonfly

### Geochemistry

Stable Isotope mass spectrometry, LA-ICP-MS

### Fieldwork

Core description, facies analysis, Geological mapping, Core and outcrop sampling

### Taxonomy

Cenozoic and Cretaceous planktic foraminifera

# Research Outputs

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## PUBLICATIONS

- **Kearns, L.E.**, Bohaty, S.M., Edgar, K.M., Nogué, S. and Ezard, T.H.G. (2022) 'Small but mighty: how overlooked small species maintain community structure through middle Eocene climate change', *Paleobiology*, pp. 1–22. Available at: <https://doi.org/10.1017/pab.2022.24>.
- **Kearns, L.E.**, Bohaty, S.M., Edgar, K.M., Nogué, S. and Ezard, T.H.G. (2021), 'Searching for Function: Reconstructing Adaptive Niche Changes Using Geochemical and Morphological Data in Planktonic Foraminifera', *Frontiers in Ecology and Evolution*, 9, pp. 1–17. Available at: <https://doi.org/10.3389/fevo.2021.679722>.
- **Kearns, L.E.**, Foster, G.L., Milton J.A., Searle-Barnes, A., Ezard, T.H.G. The influence of geochemical variation among *Globigerinoides ruber* individuals on paleoceanographic reconstructions. In review at *Paleoceanography and Paleoclimatology*

## MANUSCRIPTS IN PREPERATION

- **Kearns, L.E.**, Searle-Barnes A., Ezard, T.H.G. Is porosity a functional trait in planktic foraminifera? In preparation for *Proceedings of the Royal Society B: Biological Sciences*.

## SELECTED ORAL PRESENTATIONS

- **Kearns, L.E.**, and Ezard T.H.G., 2022, Is porosity a functional trait in planktic foraminifera: *Geological Society of America Abstracts with Programs*, v. 55, no. 5, <https://doi.org/10.1130/abs/2022AM-379749>
- **Kearns, L.E.**, Bohaty, S.M., Edgar, K.M., Nogué, S. and Ezard, T.H.G. Linking deep- and shallow-time palaeoecology: the need for ecologically relevant traits. *Crossing the Paleontological Ecological Gap (CPEG) 2021*
- **Kearns, L.E.**, Bohaty, S.M., Edgar, K.M., Nogué, S. and Ezard, T.H.G. Diversity in Eocene planktic foraminifera communities accelerated by climatic fluctuations. *Progressive Palaeontology 2020*
- **Kearns, L.E.**, Bohaty, S.M., Edgar, K.M., Nogué, S. and Ezard, T.H.G. Diversity of planktic foraminifera during key climatic transitions is biased by size fraction choice. *BES 2019*
- **Kearns, L.E.**, Bohaty, S.M., Nogué, S., Edgar, K.M. and Ezard, T.H.G. Diversity decline in Eocene planktic foraminifera communities accelerated by the middle Eocene climatic optimum. *TMS 2019*
- **Kearns, L.E.**, Searle-Barnes, A., Foster, G.L., Milton J.A. and Ezard, T.H.G. Intraspecific trace element, stable isotope and morphological variability in *Globigerinoides ruber*. *TMS 2018*
- **Kearns, L.E.**, Searle-Barnes, A., Foster, G.L., Milton J.A. and Ezard, T.H.G. Stable isotope and trace element variation between morphotypes of *Globigerinoides ruber*. *FORAMS 2018*

## SELECTED POSTER PRESENTATIONS

- **Kearns, L.E.**, Sanchez-Montes, M., Sepúlveda, J. and Lowery, C. Did non-fossilizing plankton rule the oceans after the end Cretaceous mass extinction: *Geological Society of America Abstracts with Programs*, v. 54, no. 5, <https://doi.org/10.1130/abs/2022AM-379754>
- **Kearns, L.E.**, Bohaty, S.M., Edgar, K.M., Nogué, S. and Ezard, T.H.G. The descent into less even and more less rich planktic foraminifera communities from the MECO to the EOT. *ICP 2019*
- **Kearns, L.E.**, Bohaty, S.M., Edgar, K.M., Nogué, S. and Ezard, T.H.G. Size fraction amplifies bias in planktic foraminifera assemblage composition estimates. *ICP 2019*

## References

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### Dr Christopher Lowery

UNIVERSITY OF TEXAS AT AUSTIN

- Email: [cmlowery@utexas.edu](mailto:cmlowery@utexas.edu)

Texas, USA

Research Associate

### Professor Thomas Ezard

UNIVERSITY OF SOUTHAMPTON

- Email: [t.ezard@soton.ac.uk](mailto:t.ezard@soton.ac.uk)

Souhtampton, UK

Professor of Evolutionary Ecology