



**Universidad
de Concepción**



INTERNATIONAL SYMPOSIUM ON FORAMINIFERA
University of Concepcion, Chile
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SESSION N° 4

SESSION TITLE	CONVENORS
<p>Invasions, Dispersal and Biogeographic Range Expansions of Foraminifera: Lessons from Earth History</p>	<ul style="list-style-type: none"> • Martin R. Langer University of Bonn, Germany • Anna E. Weinmann University of Bonn, Germany • Susan T. Goldstein The University of Georgia, United States

SUMMARY

Climate warming and the poleward widening of the tropical belt have induced range expansions in a variety of marine and terrestrial species. Among the predicted effects of rising temperature is the range expansion of species into areas where they previously did not exist. The expansion of species ranges along their cooler boundaries appears to be a prominent consequence of the global warming trend. A rapidly increasing number of studies have shown “fingerprints” of recent climate-driven changes in various biological systems. This includes range shifts of species towards higher latitudes, deeper waters, higher elevation or earlier springtime phenologies. To date, however, only a limited number of studies have addressed the impact of range shifts on foraminifera or the dispersal mechanisms by which these occur.

Larger and smaller foraminifera constitute ubiquitous and prominent components of marine ecosystems, and range shifts of these important protists are likely to trigger changes in ecosystem functioning. Range expansions may also have broad implications on native biotas and

ecosystem functioning as shifting species may perturb recipient communities.

The purpose of this session is to explore the rates, dispersal mechanisms, magnitude and environmental implications of biogeographic range expansions in foraminifera from data sets of both modern and past ocean environments. The goal is to bring together researchers from different subfields in order to foster interactions between the various experts as well as to raise awareness about the environmental and economic impacts of foraminiferal range shifts associated with global climate change.

Topics will include:

- History of range expansions in foraminifera: Lessons from the fossil record
- Biogeographic shifts and rates of range expansions in foraminifera
- Perturbation of shifting species on recipient communities
- Effects of foraminiferal range shifts on native biotas: Impact on biodiversity of foraminiferal assemblages
- Impact of invasive foraminifera on carbonate production, sediment composition and substrate modifying capabilities: Economical, environmental and ecological perspectives
- Implications for ecosystem functioning: Benefits or harmful effects on natural resources
- Predicting range expansions with Species Distribution Modeling
- Examining the range of dispersal mechanisms that may facilitate invasions or range expansion