FORAMS 2006

Micro- to Macro-scale Foraminiferal Distributions: Patterns and Processes

A Session in Honor of the Research Contributions of Dr. Martin A. Buzas

Chaired by Laurel Collins, Stephen Culver and Brian Huber

The research of Dr. Martin A. Buzas over the past 40 years has dealt with the distribution of foraminifera across all scales, from a single cc to an entire ocean, and from the present to the past. This session is designed to showcase new findings and new methodologies in benthic and planktic foraminiferal distributional studies from Mesozoic and Cenozoic strata and modern oceans. The session commences with an overview of Marty Buzas's research contributions followed by papers dealing with, but not limited to, the following topics: patterns of distributions, both small and large-scale; processes controlling distributions; quantitative approaches and interpretive techniques; and molecular approaches.

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Micro- to macro-scale foraminiferal distributions:
The contributions of Martin A. Buzas

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The research that Marty Buzas has published over the past more than 40 years has influenced us greatly. That research has many strands that we cannot deal with in a single symposium. The theme of this session is micro- to macro-scale foraminiferal distributions, a theme that is interwoven throughout Marty's research career. Distributions are something that Marty is very fond of. He was trained in statistics as well as foraminifera and so it was inevitable that he would combine his knowledge of statistical distributions with foraminiferal distributions at several different scales. He has studied the distribution of foraminifera at microscales, horizontally within a 10 cm^2 area of the sea floor or vertically, cm by cm within a 20 cm core. He has also worked at the mesoscale, quantifying, through the pioneering use of the General Linear Model, the relationship of foraminiferal distributions and environmental variables in space and time. This research led to the hypothesis of pulsating patches. He has worked at the macroscale with S. J. Culver, defining the distribution of benthic foraminiferal provinces, showing that all foraminiferal distributions particularly around the coasts of North and Central America belong to the same statistical distribution. Their work has documented the assembly and disassembly of communities and the latitudinal patterns of deep-sea benthic foraminiferal diversity in the Atlantic basin. Most recently, with his coauthor, mathematical statistician L. C. Hayek, Marty has delved deep into the intricacies of species diversity and solved a 50 year-old supposedly intractable problem of mathematically relating species richness with species evenness. This work led to the introduction of new approaches to understanding community structure and recognizing boundaries between adjacent communities (SHE analysis).

Many of us work long hours and publish many papers over our careers but few of us truly influence the fundamentals of our science. Marty Buzas is one micropaleontologist whose work will be of lasting significance.