

## Ellen Thomas Receives 2012 Maurice Ewing Medal

*Ellen Thomas was awarded the 2012 Maurice Ewing Medal at the AGU Fall Meeting Honors Ceremony, held on 5 December 2012 in San Francisco, Calif. The medal is for “significant original contributions to the scientific understanding of the processes in the ocean; for the advancement of oceanographic engineering, technology, and instrumentation; and for outstanding service to the marine sciences*

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### Citation

Over the course of her remarkable career, Ellen Thomas has illuminated the microcosm of the deep ocean and brought into sharp focus its significance as a bellweather for global climate change. Her profound mark on the fields of micropaleontology and ocean history derives from an uncanny ability to blend highly detailed data, required to understand benthic communities, with big-picture interpretation necessary to make major advances in paleoceanography. For those who have watched Ellen's career closely over the last two decades, her tremendous success is not at all surprising. Trained in Utrecht as a classical geologist but also coming from a powerhouse of micropaleontology, Ellen's career has taken her from Arizona State to the Deep Sea Drilling Project to Wesleyan to Cambridge before settling at Yale for the last twelve years. Over the course of her career, Ellen has repeatedly shown great instincts in zeroing in on timely areas, and she has been a harbinger for an unusual number of big advances in paleoclimatology.

Living in possibly the most remote habitat on the planet, deep-sea benthic foraminifera thrive in an environment that is not easily perturbed. For example, as Ellen has discovered, the group was hardly affected by the impact at the Cretaceous-Tertiary boundary when havoc reigned in the surface ocean and on land. As a result, Ellen was the first to realize that the benthic foraminiferal mass extinction close to the Paleocene-Eocene boundary, an event now well known as the Paleocene-Eocene thermal maximum (PETM), was a very big deal. Not only was the PETM significant enough to change the source of deep-ocean waters, the event is possibly our best road map of future climate change. Since her 1989 publication that presaged recognition of the PETM, Ellen has clarified how the deep ocean changed during the event. Perhaps even more impressive, Ellen has been an author or coauthor of a great number of the most significant papers on the PETM; it is widely understood that if you want one of the best minds in the game, you had better involve Ellen on your team! Ellen's papers on the PETM are innovative masterpieces, using large data sets to explore a range of novel hypotheses; case in point, her 1996 paper with paleoceanography co-pioneer and co-Ewing medalist Nick Shackleton. And

speaking of being a harbinger, Ellen was also the first to realize also in 1996 that the PETM was not unique, that other “hyperthermal” events as she termed them occurred in the late Paleocene and early Eocene. Following Ellen's lead, research on hyperthermals is now a cottage industry.

Ellen has proven to be versatile in research, making great progress on a topic close at hand in Connecticut, living foraminifera inhabiting the salt marshes along Long Island Sound. In publications dating back to 1991, Ellen has elucidated the environmental factors that have impacted these communities. Moreover, she has shown the breadth I have referred to through collaborations with her husband Johan Varekamp in volcanology and igneous geochemistry. In closing, the Ewing Medal is a fitting tribute to Ellen Thomas for her numerous intellectual contributions to, and leadership of, the fields of micropaleontology and paleoceanography.

—TIMOTHY J. BRALOWER, Department of Geosciences, Pennsylvania State University, University Park

### Response

I feel deeply honored to receive the Maurice Ewing Medal, especially because that means seeing my name on a list of medalists including some of my heroes in science. They not only influenced my scientific thinking, especially as to the complexities of the Earth's carbon cycle, but also helped me in my serendipitous career.

I thank them sincerely: Karl Turekian, who welcomed me to Yale; the late Nick Shackleton, who invited me to Cambridge; Rick Fairbanks at Lamont-Doherty, and Wolf Berger at Scripps, where I was lucky to work with him and Edith Vincent as DSDP staff scientist. I am grateful to Peter Buseck (ASU), my first U.S. employer, who helped with dual-career life and hired me to use an SEM, teaching me about airborne particulates and the practice of doing science in the United States I owe much to my Ph.D. advisor at Utrecht University, the late Cor Drooger, who taught me to think of microfossils as living organisms, and offered me a Ph.D. position although the department was unwelcoming to women geologists.

I thank Olaf Schuiling, who showed me in the first university lecture that I attended that carbonate equilibria are exciting; 44 years later I am still studying them, looking at ocean acidification in the geological past in



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order to glimpse the future. That lecture was special, because there I first met Joop Varekamp, my best friend since geological fieldwork in southern France in the summer of '69, and now my husband of many years. Yes, carbonate equilibria can be scientifically fascinating as well as romantic. It is Joop, my colleague, collaborator, and co-author, who has strongly influenced and improved my scientific reasoning through our mutual exercises in communicating science across disciplines. Together we undertook scientific exploration in the smelly muds of Long Island Sound and collaborated in raising our children Dylan and Daphne, to whom I must apologize for long, boring dinner table talk with too much geology.

I am especially grateful that I have been awarded the Maurice Ewing medal because it may show others that it is possible to have a truly awarding career even when one does not “have it all.” I have never been able to get a tenured position, but I have been able to get what is most important to me, the opportunity to combine having a great family with engaging in exhilarating science, thanks to grant money from NSF, the USGS, and EPA, and thanks to scientific ocean drilling (DSDP and IODP), which provided more material for study of past climate and environments than I can research in a lifetime. And last, I must acknowledge my favorite organisms, the foraminifera. More and more obscure trace elements and isotopes are measured on their small shells, but I am happy to see that they are getting the respect that they deserve as organisms, now that I have received a prestigious medal from a geophysical society just for counting microscopic shells. To foraminifera, my citationist Tim Bralower, the U.S. Navy, and AGU: thank you.

—ELLEN THOMAS, Yale University, New Haven, Conn., and Wesleyan University, Middletown, Conn.