

Robert Howarth is an Earth systems scientist, biogeochemist, and ecosystem biologist. He joined the faculty at Cornell University in 1985 and was appointed the *David R. Atkinson Professor of Ecology & Environmental Biology* in 1993. Howarth earned a BA in Biology from Amherst College in 1974 (*magna cum laude*) and a Ph.D. jointly from MIT and the Woods Hole Oceanographic Institution in 1979. He then worked as a staff scientist at the Marine Biological Lab in Woods Hole, Massachusetts, until 1985. He rejoined the Marine Biological Lab as an adjunct Senior Scientist in 2000, and has had a lab in Woods Hole as well as at Cornell for the past 13 years.

For the past 35 years, Howarth has worked jointly with his close colleague and wife, Dr. Roxanne Marino, running an active research program focusing on how human activity affects the environment, with emphases on global change and on coastal ocean water quality. A particular focus is human alteration of the nitrogen cycle at scales from local to regional to global, including both sources of pollution and their consequences. Howarth also works on greenhouse gas emissions (particularly methane and nitrous oxide) and the ecological consequences of oil and gas development. He was the head consultant for the Attorney General of the State of Alaska on the response to the Exxon Valdez oil spill.

Howarth is the Founding Editor of the journal *Biogeochemistry* and was Editor-in-Chief of the journal from 1983 to 2004. He chaired the National Academy of Sciences Committee on Causes and Consequences of Coastal Marine Eutrophication from 1998-2000, co-chaired the International SCOPE Nitrogen Project from 1992 to 2002, directed the North American Nitrogen Center of the International Nitrogen Initiative from 2003-2006, was the lead author on nitrogen pollution for the Millennium Ecosystem Assessment (2003-2005), and was the chair of the International SCOPE Biofuels Project on environmental effects of biofuels from 2007 to 2011. Currently, he is a consultant to the United Nations Environment Program on sustainable resource use. He has testified numerous times before the US Congress and Senate, as well as the European Parliament, and gave a briefing on coastal nitrogen pollution in the White House during the Bush presidency in 2006.

In 2011, Howarth together with colleagues Tony Ingraffea and Renee Santoro published the first comprehensive analysis of the greenhouse gas footprint of shale gas in *Climatic Change Letters* and an invited commentary on shale gas in *Nature*. This work was cited in over 1,500 newspapers globally, winning Howarth an honorable mention as one of “50 People who Matter” in the annual Time Magazine Person of the Year issue for 2011.

In March of 2013, Howarth worked with Mark Jacobson of Stanford and other colleagues at Stanford, the University of California at Davis, Cornell, and elsewhere to produce the “2030 Plan:” a peer-reviewed paper demonstrating how to make the entire state of New York free of fossil fuels and instead develop an energy economy powered entirely by wind, solar, and water.

Howarth has published over 200 scientific papers, reports, and book chapters. His most recent book is the 4th edition of the text *Essentials of Ecology* (Begon, Howarth, and Townsend), scheduled for release in early 2014.