Citation by Warren D. Allmon

It is with pleasure and honor that the Paleontological Research Institution presents its 2005 Gilbert Harris Award to Robert J. Elias.

The Harris Award is presented annually by PRI in recognition of excellence in contributions to systematic paleontology, to a scientist who, through outstanding research and commitment to the centrality of systematics in paleontology, has made a significant contribution to the science.

Bob received his PhD from the University of Cincinnati in 1979. He moved to the University of Manitoba, where he is now Professor. Since then, he has pursued a multi-faceted research program on coral faunas and environmental change during the Ordovician evolutionary radiation, mass extinction, and Early Silurian recovery. His research deals with some of the most significant events in Earth history. His analyses of the patterns and processes involved in these events are being integrated with broadly based studies on all aspects and applications of fossil corals.

Specifically, his work includes establishment of a sound taxonomic framework on which to base the other areas of study. In this he has published numerous studies on Ordovician and Silurian corals, several of which have been published in *Bulletins of American Paleontology*.

His work also includes development of innovative methods in the study of coral paleobiology, and their application to taxonomy, paleoecology, and evolution, including innovative application of biometrics, and studies of variation, growth, and form.

His work includes development of paleobiologic, paleoecologic, and taphonomic models for paleoenvironmental reconstruction and basin analysis. His integrated approach to paleoenvironmental reconstruction based on entire coral faunas permits more precise interpretations of paleoenvironments, on both local and basinal scales.

His work includes recognition of evolution and extinction events, and their relation to biogeography, paleoceanographic/climatic conditions, eustacy, and basin history.

Bob is also interested in applying his paleontological work to the solution of current global problems. The knowledge and ideas resulting from this research program on early coral faunas are necessary for global paleogeographic, paleoceanographic, and paleoenvironmental reconstruction, intercontinental stratigraphic correlation, and determination of patterns and processes in the history of life.

He has worked on latest Ordovician to earliest Silurian post-extinction and recovery coral faunas in the cratonic interior of North America. Monographic studies in the east-central United States have provided the first comprehensive database on an entire coral fauna during this critical time. His colleague Graham Young and he recently completed an analysis of the diversity, paleoecology, and provincial structure. They proposed that changes in nutrient levels and environmental stability, related to sea-level changes, were important causal factors in the mass extinction and recovery. They are now investigating relationships between environmental parameters and morphologic/paleoecologic trends in post-extinction rugose corals. A comparative study of the paleoecologic/taxonomic organization in pre-extinction, post- extinction, and recovery coral faunas is also underway.

Bob is also working on Late Ordovician to earliest Silurian rugose corals on the eastern margin of North America. The world’s most complete, coral-bearing succession across the Ordovician-Silurian boundary occurs on Anticosti Island, Quebec.

He has also worked on Late Ordovician pre-extinction coral faunas in the cratonic interior of North America. Patterns in the evolution and biogeography of solitary corals have been related to major transgressive-regressive cycles and paleoceanographic parameters. Graham Young and he are adding data on colonial corals, to permit a more comprehensive analysis of faunas that existed prior to the mass extinction. Ongoing studies of coral distribution, paleoecology, and community structure contribute to an understanding of biotic response to environmental change.

In the late 1990s, while working on Late Ordovician-Early Silurian archipelago with rocky shorelines in the cratonic interior of North America, Bob was part of the team that discovered and described the world’s largest trilobite in the Ordovician on the modern shore of Hudson Bay near Churchill, Manitoba.