Donald R. Whitehead

Donald R. Whitehead's career has demonstrated how to be really happy in academia. Don has managed to combine scientifically important research with research that has important practical applications and research that requires long hours in field activities he adores. His teaching and service activities have reflected the same loves. And his demeanor and interactions at IU over the past several decades have reflected his deep satisfaction and happiness.

Don began his academic career at Harvard University, graduating magna cum laude in 1954. He did graduate and postdoctoral work with some of the top figures in paleobotany and paleoecology of the time—his Ph.D. with Elso Barghoorn at Harvard and his postdoctoral work with the founders of ecological pollen analysis, Johs. Iversen and Sven Th. Andersen at the Danish Geological Survey and Knut Faegri at the University of Bergen. In 1960 he joined the faculty of Williams College, advancing there to associate professor. In 1967 Don began his IU career in the Department of Botany (subsequently Plant Sciences). Reflecting his interdisciplinary nature, he left the department in 1974 and became professor-at-large in the Division of Biological Sciences before finally lodging permanently in the amalgamated Department of Biology.

Don's initial research interests were in applying pollen analysis to understanding the biogeography and paleoclimatology of the unglaciated southeastern United States. This was an important and controversial area, with views ranging then from Braun's assertions of no biogeographic displacement during the Pleistocene to Deevey's of massive southward displacements of vegetation zones. Great advances in pollen analysis occurred in the 1950s and 1960s, and Don soon applied the advances in the southeast. Although much other work has been done in the region since then, Don's studies still serve as standards and most of his conclusions are well accepted.

In the late 1960s Don became interested in the rapid development of new theory in community, evolutionary, and ecosystem ecology, and he began to apply these new ideas in several contexts. His 1969 review on evolutionary and ecological aspects of wind pollination remained the standard in the field for two decades. He was also among the first to apply these theories to interpretation of paleoecological records. Specifically, much of his group's effort starting in the early 1970s was devoted to using integrated paleoecological and paleolimnological studies to investigate long-term watershed lake interactions. This work focused initially on lakes in the Berkshires, with later studies along an elevational transect in the Adirondacks. The work combined applications—some pioneering—of pollen, plant macrofossils, pigments, diatoms, Cladocera, sediment chemistry, organic chemistry, and geochemistry.

Two findings of the Adirondack studies were especially important both in their own right and in terms of Don's subsequent career. He showed, first, that lake-water acidity had changed substantially during the last 12,000 years in response to watershed events and, second, that diatoms were particularly sensitive to lake-water pH. These conclusions emerged around 1980, coincident with emerging national concerns about acid rain. This conjunction led to the PIRLA (Paleolimnological Investigations of Recent Lake Acidification) project. Don directed this multi-university, multi-investigator effort, which was funded by the Electric Power Research Institute (EPRI), the Environmental Protection Agency, and several other governmental and private sources. For the early 1980s this was very-large-scale environmental research; EPRI alone granted over $3 million to IU. PIRLA provided very clear indications that recent acid deposition from industrial sources had caused rapid acidification of many lakes in the Adirondacks, in New England generally, and on the Canadian Shield.

Although Don's publications and work with graduate students both on large-scale anthropogenic environmental change and on paleobiogeography have continued through to the present, the focus of his efforts began to shift markedly in the late 1980s. For most of the past decade he has studied the effects of forest fragmentation and forestry management on migratory songbird populations. Here again, he has worked with scientists from several universities in achieving major results, published, for example, in *Science*. This new initiative combines his long-term interest in human impacts on the natural world with a professionalization of his first love—birds. Throughout his career Don has been an avid birder and general naturalist, and has devoted innumerable hours just to local bird censuses and to birding field trips for the Sassafras Audubon Society.

The vast majority of Don's teaching has directly reflected his love of ecology and of the naturalist's perspective, especially in courses on ecology (for majors), environmental biology (for nonmajors), community ecology (for graduates), field biology, and advanced field biology. His students will long remember the advanced field biology summer courses in the Adirondacks, Berkshires, and Florida. Don's lively teaching garnered him the Senior Class Teaching Award and the accolades of many students. He has involved a large number of undergraduates in his research. Both his involvement of these undergraduates and his courses have stimulated many students to take up environmental careers.

Much of Don's service has reflected these strong environmental interests. He gave scores of public talks to alert people to environmental issues at the time of "Crisis Biology" in the early 1970s. He offered the first seminar in the department focusing on environmental issues, was on the steering committee for IU's first Earth Day, was instrumental in the founding of the COAS Environmental Studies Program (which later became part of SPEA), and is now serving on the steering committee for the new university environmental science degree. He has served as the director of IU's Kent Farm field research station for the last fifteen years. Don has also been a major supporter of students in the Individualized Major Program.

Don's retirement leaves for many of us a too quiet silence, an ache much like that of a naturalist who longs to hear more frequently the song of one of his favorite, but now rare, bird species. Don has hosted more celebrations of other people's accomplishments than anyone else in the ecological end of the department, cooking endless dinners and holding endless parties. We are quite pleased to be able to contribute to a party for him.

Craig Nelson
Stephen Jackson