
Resolution of Respect

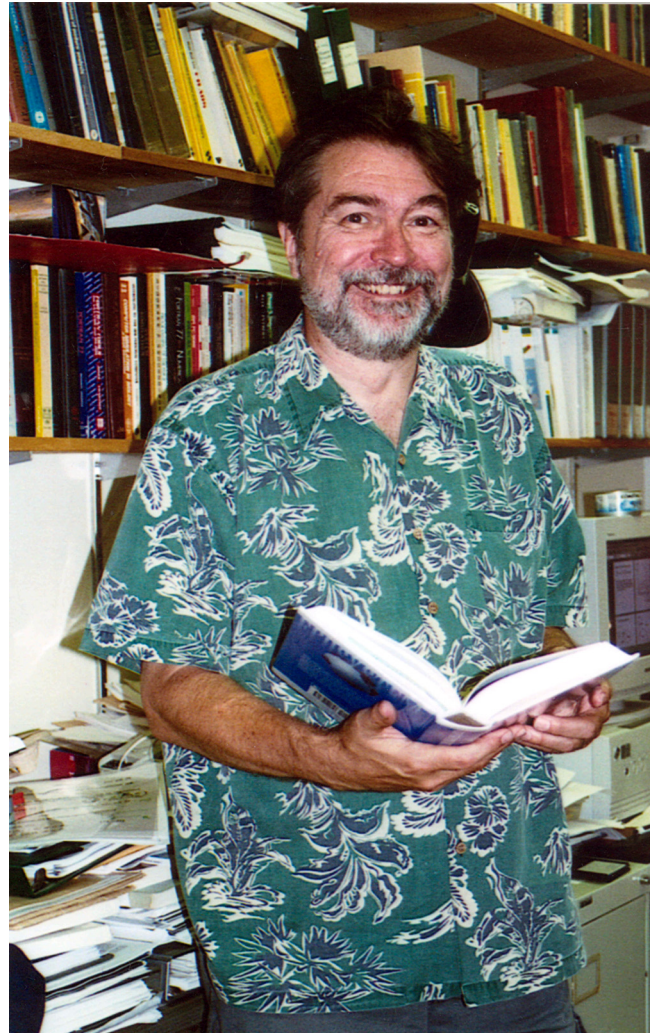
Peter Yodzis

1943–2005

Renowned theoretical ecologist Peter Yodzis, Professor Emeritus at the University of Guelph (Guelph, Canada), husband to Susan and father to Hans and Michael, passed away in Guelph, Canada on 28 March 2005. Peter was afflicted with ALS (Amyotrophic Lateral Sclerosis; Lou Gehrig's disease), a crippling and terminal disease that deteriorates the motor neurons in the brain and spinal cord. Peter was an eminent leader in theoretical community and food web ecology. He was an advocate for an energy-based view of the world as a means to simplify the sheer complexity of both mathematical models and nature.

Peter was born on 10 July 1943 in Baltimore, USA. Like a number of theoreticians working in ecology in the 1970s, Peter was first a physicist by training. He received a B.Sc in 1964 from Duke University in North Carolina and a Ph.D in mathematical physics in 1969 from New Mexico State University. Following a series of postdoctoral fellowships in Dublin, Ireland and Hamburg, Germany, he joined the Institute for Theoretical Physics in Bern, Switzerland. While at Bern working on relativity theory, Peter became interested in theoretical ecology, and he shifted his focus to that subject. Peter published his first paper on theoretical ecology in 1976 in the journal *Nature*, and soon after he became a regular lecturer on the subject at the University of Zurich's Zoological Museum, where he became acquainted with his most influential mentor, Professor Hans Burla. Peter made a move to the Department of Zoology at the University of Guelph in 1979, where he enjoyed a successful 25-year career.

Late in his career Peter was diagnosed with ALS, and like many patients, he was ultimately confined to



a wheelchair and had only limited mobility in his lower extremities. Despite the dire physical challenges of the disease, Peter continued to work with the passion and rigor that marked his entire career. In 2004 he retired from an active role and was honored with the status of Professor Emeritus. Following his retirement, Peter continued to collaborate with his colleagues and to pursue his own research directives.

Compared to many accomplished ecologists, Peter's publication record is brief. However, his attention to detail and the rigor with which he conducted research is evident in each of his publications. Peter was a true proponent of the maxim "quality over quantity." During his 25 years at Guelph, Peter supervised only a small number of graduate students, but his ability to inspire and teach is evident when considering that all have continued on to careers in science. Peter believed that ecologists, as scientists, should be familiar with mathematics, and he passed on this idea to graduate and undergraduate students alike. His desire to make biologists mathematically and computationally literate met resistance, but he persevered. In the words he often used to his graduate students, "You've got to fight the good fight." When Peter believed in something, he could not be swayed. He was a true teacher and mentor who cared more about content and rigor than pleasing everyone.

In 1980 and 1981 Peter published two groundbreaking papers on the connectance and stability of real ecosystems. At this time theoretical ecologists were bewildered by the discrepancy between natural ecosystems, which appeared to be stable and resilient, and the instability exhibited by ecosystem models. These two papers awoke ecologists to the importance of the trophic organization of ecosystems (which had

previously been considered somewhat random) and prompted decades of research into the subject. In 1988 Peter published his best known paper, "The indeterminacy of ecological interactions as perceived through press perturbation experiments." The conclusion, that the consequences of a perturbation on a food web are frequently impossible to determine from short-term observations of the system, has resonated consistently through the food web literature. It also suggested that the management of such complex systems may be better understood within a probabilistic framework, since complex systems are prone to a dizzying array of potential responses. In an attempt to deal with such complexity and its baroque consequences, Peter then employed bioenergetic reasoning as a means to simplify food web dynamical models. The 1992 paper "Body size and consumer-resource dynamics," co-authored by physiologist Stuart Innes, has frequently been used as a means to understand the role of energy flow in driving food web dynamics. This paper was one of the first to unite trophic models with organismal physiology.

Peter had a gift for communicating science—an unusual ability to integrate simple explanations and profound mathematical theory with such clarity that he could impress a message upon the most accomplished ecological theoretician and the interested layman with a single line of text. Attesting to this, Peter's 1989 textbook, *Introduction to Theoretical Ecology*, appears often in the syllabi of current courses and is, despite its age, still considered an essential reference for any theoretician. Perhaps his most well-known work to those outside theoretical ecology was published with his long-time friend Alan Held, "On the Einstein-Murphy interaction." Here they provide a satirical test of the claim that "bread always falls butter side down,"

which they argued must contradict either Einstein's theory of general relativity or Murphy's Law—both of which are known to be true.

Toward the end of his career, Peter's battle with ALS limited his travel to conferences and forced him to turn down the many speaking invitations he received. Hearing this, John Vandermeer of the University of Michigan suggested that if Peter could not go to a meeting, then a meeting should come to Peter. Many of Peter's closest colleagues at the University of Guelph and abroad, excited by this idea, hurriedly organized a colloquium in his honour. As a testament to Peter's reputation and broad affiliation, the program was quickly filled by a distinguished list of colleagues: Jim Brown, Don DeAngelis, John Harwood, and Kirk Winemiller. Peter himself delivered the final lecture, entitled "The seven scholia of bioenergetic allometric models," and received a standing ovation for his charismatic and brave performance. The colloquium has since spawned an annual series at the University of Guelph, aptly named the "Peter Yodzis Colloquia in Fundamental Ecology," and a new book series, *Fundamental Ecology*, chronicling the colloquia. (More

information about past and upcoming "Peter Yodzis Colloquia in Fundamental Ecology" and the book series *Fundamental Ecology* is available on the Internet at <http://www.ecologycolloquia.uoguelph.ca/>)

Those of us who had the opportunity to know Peter realized that he possessed an incredibly warm personality and a love of laughter. Peter was an avid practitioner of Aikido, a dynamic martial art that emphasizes control of one's opponent through use of the opponent's energy. Peter was a lover of classical music, debate, and the Japanese art of Haiku poetry. When asked why he made the change from the study of general relativity to theoretical ecology, Peter's recurring answer was, "Because I wanted to change the world." Peter was an outstanding colleague and teacher and a dear friend. He will be sadly missed by all.

David A. Vasseur and Kevin S. McCann
Department of Integrative Biology
University of Guelph
Guelph, ON
N1G 2W1 Canada