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Personal report

James J. Kay (1955–2004)

Those who recognize the world as subtly complex and who seek deep insights into its workings have recently lost an esteemed colleague. James J. Kay, age 49, passed away after a prolonged illness on 30 May 2004 near his home in Kitchener, Ont.

James was a relatively unsung hero who was working to change key assumptions about the field of thermodynamics in order that the discipline be better applied to the fields of ecology and the environment. He is probably best known for his series of papers with Eric Schneider on the application of irreversible thermodynamics to ecosystem development. Their work reinterpreted the second law of thermodynamics so that it applied to the capacity for exergy gradients to induce self-organizing structures and the conjugate propensity for living systems to destroy exergy gradients at the fastest rates possible. Kay's work was featured as the cover story on the 5 October issue of the *New Scientist*. His key paper with Schneider and Kay (1994) was recently identified as one of the 12 most important papers in ecology, 1990–1999, in a survey by Curtin and Allen (forthcoming) and is included in the Oxford University Press *Readings in Ecology* (Dodson et al., 1999).

As Associate Professor of Environment and Resource Studies at the University of Waterloo, Dr. Kay's research interests ranged from the theoretical and epistemological basis for an ecosystem approach to the formulation of ecosystem-based environmental policy and ecosystem monitoring. He served on the Long Term Ecosystem Research and Monitoring Panel of the Royal Society of Canada and was a member of the Royal Swedish Academy of Sciences, Beijer Institute, Working Group on Complex Ecological Economic Systems Modeling. He was a founding board member of the Network for Ecosystem Sustainability and Health (http://www.nesh.ca/), one of the founding members of the International Society for Ecosystem Health, and Chair of the ecosystem special integration group of the International Society for Systems Science. At the time of his death, he sat on the United States National Science Foundation Advisory Committee on Environmental Research and Education. He was working with his colleague at Waterloo, Roydon Fraser to redefine and clarify thermodynamic concepts in ecology. With David Waltner-Toews and Martin Bunch he was preparing the manuscript "*The Ecosystem Approach: Complexity, Uncertainty, and Managing for Sustainability*", for publication by Columbia University Press.

Many readers are perhaps aware that James spearheaded a wholly ad hoc association of like-minded scientists who called themselves the Dirk Gently Gang. This group of very well-known thinkers met on a non-sponsored and informal basis at various spots around the world to develop a "Post-Normal Science" that challenges the conventional ways of regarding nature.

James was an enthusiastic practitioner of the dictum, "think globally and act locally." He was the founding Chair of Waterloo's Greening the Campus Committee and a founding member of the City of Kitchener's Environment Committee, which developed a Strategic Plan for the Environment and an ecosystem-based master plan for the Huron Natural Area. He sat on the commit-

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tee which developed a bicycle master plan for Kitchener that won an award from the Canadian Institute of Planners. At the time of his death was on the City's committee for the Transistion to a Hydrogen Economy.

Prof. Kay was active in a number of other National and International bodies to improve the understanding and management of natural systems at the level of the ecosystem. These initiatives and much of his personal philosophy can be viewed on his highly popular website http://www.jameskay.ca, which receives about 50,000 visits per year.

James was guided in his outlooks by his background as an engineer, who knew how things worked; as a boy scout, who acquired a fervid love of nature; and as a Catholic, who believed deeply in the harmony of faith and reason. He was a very devoted husband to his wife, Michelle, and a loving father of two children, Lise and Jonah. Those of us who were privileged to know James personally will sorely miss his brilliant insights, his easy wit, and his loyal friendship. We shall cherish our memories of him and work enthusiastically to continue along the pathways that he helped to blaze.

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