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Obituary

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In Memoriam Lani Stephenson (1948–2021): a scientific pioneer of human nutrition and parasitic disease studies

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Lani Sue Stephenson died in Ithaca, New York on 10 March 2021 after a professional and highly productive life spent investigating the nutritional consequences of parasitic infections in children and adults. Lani was a native of Hawaii, born to Joan and Russell Stephenson in Honolulu on 31 July 1948, and attending Punahou school there until the family moved back to the mainland. In New Hartford, New York, she completed secondary schooling then attended Cornell University in Ithaca, New York where Lani obtained her degrees, a BSc in Human Nutrition and Food, a MSc in Nutritional Science and a PhD in Human Nutrition in 1971, 1973 and 1978, respectively.

Lani developed an interest in human parasitic infections after listening to an account of research on that topic by Malden Nesheim, who had recently returned from a sabbatical leave at the Molteno Institute at Cambridge University, UK. Under his supervision, she carried out a study with young pigs infected with *Ascaris suum* as a model for human ascariasis, showing that the infection reduced their growth and affected the absorption of both fat and protein. She found that there were changes in the intestinal morphology of infected pigs with a thickening of the intestinal wall and a shortening of the villi. This animal study spurred her interest in assessing the nutritional consequences of infections with *Ascaris lumbricoides* in children. She organized a study involving school children in Kenya who were predominantly infected with *Ascaris* and subsequently demonstrated that deworming improved their nutritional status. The studies with pigs and children became the basis of her PhD thesis and began a career focused upon the nutritional consequences of parasitic infections.

After her doctoral studies, Lani was appointed as a Research Associate in the Division of Nutritional Sciences at Cornell. She married Michael Latham, Professor of International Nutrition at Cornell, who became her major collaborator in the subsequent studies carried out in Kenya. Her highly productive research programme eventually led to her appointment as visiting Assistant Professor, and eventually to full faculty appointments at Cornell as Assistant and later Associate Professor. Lani passed on the experience she gained from her studies in Africa to students at Cornell, teaching courses on the relationship between parasitism and nutrition and how to conduct field studies in international and community nutrition. She was a superb organizer of field-based research, working with people who lived in challenging environments.

David Crompton and a number of his students at the Molteno Institute worked with Lani on some of her studies in Africa. In considering her legacy he indicated, '*My best memories of Lani are the quality of her work, her extremely high standards in the conduct of her research and*

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her meticulous evaluation of her results. She was always her severest critic of her results. All the work in Africa was based on detailed preparation and great concern for the dignity and well- being of the study subjects. Lani was an ardent intellectual, rather than emotional feminist. She had a particular concern that opportunities and careers in science should be on exactly the same terms and conditions for men and women; I know she thought that women were often "short changed" in this regard. Daphne Roe was a hero of hers'.

Her work was seminal and demonstrated a continuous talent in breaking of new ground, for example moving from her early work on a single infection to later emphasis on polyparasitism and all three soil-transmitted helminths combined. She then expanded her interest to include schistosomiasis, particularly to the link between nutrition and *Schistosoma haematobium* and further still to include malaria. This demonstrated her forward thinking reflected in the current focus on co-infection. Further innovation was revealed when she developed an understanding of the impact of parasitism on physical fitness and activity, and subsequently on children's appetite. This finding was of particular importance as it suggested that frequently, poor appetite may be as important, or even more important, as a cause of poor growth in children, rather than the availability of food. All of this work was characterized by meticulous attention to detail in field, laboratory and data analytical methodology.

In 1987, she published a book '*The Impact of Helminth Infections on Human Nutrition: Schistosomes and Soil-Transmitted Helminths*' with the collaboration of Celia Holland, who authored several chapters. The journal *Parasitology* has published a number of contributions by Lani including a review article on '*The impact of schistosomiasis on human nutrition*' in 1993 and co-editorship of a special issue in 2000 entitled '*Controlling intestinal helminths while eliminating lymphatic filariasis*'. Lani's article, within this special issue, is one of the mostly highly cited articles in the journal.

Lani spent two very productive years in the late 1990s on sabbatical leave as a visiting Professor at the Danish Centre for Experimental Parasitology. There she returned to her interest in experimental infections of parasites in pigs. Celia recalls receiving letters from Lani in her characteristic handwriting with every part of the page written upon and sprinkled with advice on '*how to be a better scientist*' and highlighting her love of animals and her political stance (how she would have welcomed President Biden). Unfortunately, she suffered health problems in the late 1990s and she retired from Cornell University in 2000, ending her productive academic career.

Lani's contribution to the field of nutrition and parasitism is immense and undoubtedly paved the way to a much greater understanding of the impact of parasites, particularly helminths, and the consequent World Health Organization's emphasis on the need for large-scale deworming programmes with associated benefits on childhood development. Indeed, without Lani Stephenson's guidance, these important insights might not have been gained. She was a pioneer in field-based studies on nutrition–parasite interactions.

Lani was predeceased by her husband and life partner, Michael Latham and her beloved dog Lucy. She is survived by her 2 stepsons, Mark Latham of Somerville MA, and Miles Latham of Las Vegas NV.

Selected publications

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