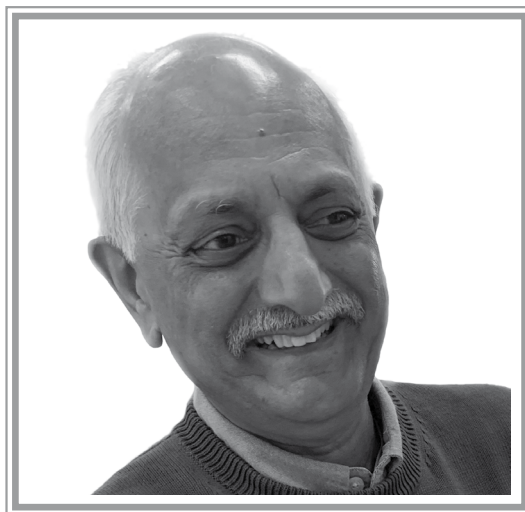


## OBITUARY



### The life and works of Professor Naresh Magan

We are deeply saddened to share the news of Professor Naresh Magan's passing, yet this is counterbalanced for many in the scientific community with the scientific stimulation, joviality, and human warmth of having known him.

Naresh was a renowned expert in fields related to applied mycology, a highly-published high-achieving academic, and a person whose friendship reached out to generations of students and scientists throughout his career, both in his workplace and across the world. Naresh passed away on 20 April 2023 (at age 69) after a short illness.

Naresh was widely recognised for his contributions across the interconnected fields of applied mycology, food microbiology, agricultural biotechnology, and climate change. He conducted ground-breaking research on the control of fungal diseases of agricultural crops and fungal contamination of stored (post-harvest) products. He was also a pioneer in the research of the effect of acid rain and other facets of climate change on the development of fungal pathogens and mycotoxin production. His research has had a significant, sometimes profound, impact on diverse aspects of the agricultural sector and food industries.

Naresh was born in 1953 in South Africa (during the Apartheid era of racial segregation). At the age of 18, he moved to the UK to attend university and graduated in 1976 with BSc (Hons) in Botany and in 1977 with a MSc in Plant Pathology (both at Exeter University, England). Having grown up seeing the injustices of racial segregation in South Africa was perhaps what gave Naresh a life-long passion for social justice, gentlemanly behaviour, compassion, and egalitarianism. Whilst being an academic giant in his field, he always remained humble, fun, and unassuming. Naresh was of Indian Gujarati heritage, and it is perhaps fitting to note that civil rights campaigner Mahātmā Ghandi – who lived for 21 years in South Africa where he developed his campaign for passive resistance to racial segregation and human-rights abuses under Apartheid – was also Gujarati.

Naresh completed his PhD in Agricultural Botany in 1984 at Reading University (England), and was a Postdoctoral Research Fellow from 1982 to 1984 at Rothamsted Experimental Station (now Rothamsted Research), Harpenden in England. Following this, with a developing passion for applied mycology, he worked as a Higher Scientific Officer between 1984 and 1986 at Horticulture Research International, Littlehampton (England). He then joined Cranfield Institute of Technology (Bedfordshire, England) in 1986 as an academic (a university that later changed its name to Cranfield University), where he developed a unique and outstanding academic career becoming a Professor (Personal Chair) in 1999.

He served as Academic Director of Cranfield's Institute of BioScience and Technology (1996-2002), Dean of the Faculty of Medicine and BioSciences (2003-2007), School Research Director of Cranfield Health School (2008-2013), and Academic Lead for Doctoral Training Centre at Cranfield Environment and Agrifood (2014-2016). During Naresh's years in academia, he was always very involved in work to improve the rights of colleagues and developed different roles within the University and College Union (UCU) Cranfield University Local Association where he was chair/president for many years. He was always ready to defend colleagues who seemed to have been wronged and, when defending any cause, he expressed his views

robustly (despite his amiable character) and stuck to what he considered to be right.

As an academic, Naresh established his laboratory – the Applied Mycology Group – at Cranfield. A major body of his research has dealt with the ecophysiology of fungi (of diverse types), especially fungal development and production of secondary metabolites in relation to the effective concentration of water molecules (a key thermodynamic parameter that is a determinant of biophysics, known as water activity), including mycotoxins in animal feeds and human foods. He also studied the metabolism and efficacy of fungi that can be used as biocontrol agents. He pioneered the study of the gene expression that changes biosynthetic metabolic pathways in response to different environmental parameters. Naresh also worked on the prediction of secondary metabolite production based on this link between environmental conditions and gene expression, and improved the accuracy of these predictions; he developed novel methods for fungal disease diagnostics (e.g. electronic nose) and for the control of fungal infections in crops and stored products, which has led to the development of new fungicides and improved storage practices and he has made important contributions to the field of biotechnology. The latter include research on the use of fungi in the production of biofuels and he developed new methods to produce fungal enzymes that can be used in industrial processes or as bioremediation tools to improve the breakdown of xenobiotic chemicals in polluted environments.

In addition to his research, Naresh was actively involved in, and passionate about, teaching postgraduate students and supervising research projects at MSc, MPhil, and PhD levels. Indeed, he mentored more than 75 PhD students and even a greater number of MSc students. He always gave his time very freely and was both enthusiastic and personable when discussing science. It is not surprising, given his demeanour as well as his achievements, that Naresh was frequently an invited speaker and/or a keynote speaker at national and international conferences and symposia.

Naresh's first PhD student was Euphemia (Effie) S. Mutasa (now Effie S. Mutasa-Gottgens), who graduated in 1988. His research group was cosmopolitan from the very beginning, and another of his early students (1991 to 1994) was Allen Y. Mswaka from Zimbabwe. Reflecting on his time spent at Cranfield, Allen recently commented that 'Naresh was very pragmatic but also someone who used his time to form a relationship that was personal. He made you feel like part of the process of the research, so never made you feel like just a cog in the proverbial machine. He was warm, personable, and took time out to meet your family or other people you knew. There was nothing at all negative about Naresh.'

Naresh launched the careers of those research students who passed through his group and many have now become

leaders around the world. Several examples are in industry and governmental organisations such as Silvia Fragoeiro (MSD Animal Health), Iain A. Kirkwood (Potato New Zealand), Gonçalo Leite (CEVA Sante Animale), David Mitchell (Oval Medical Technologies), Stella Mokiou (Pfizer Inc.), Effie S. Mutasa-Gottgens (European Molecular Biology Laboratory-European Bioinformatics Institute; EMBL-EBI) and Kalli Mylona (Intertek). Others became academics including, Ahmed Abdel-Hadi (Egypt), David Aldred (UK), Alaa Baazeem (Saudi Arabia), John E. Hallsworth (UK), Hyang Burm Lee (South Korea), Sonia Marín (Spain), Angel Medina (UK), Allen Y. Mswaka (in Zimbabwe then the UK), Roberto Parra (Mexico) and Alicia Rodríguez (Spain). The fact that virtually all those who knew Naresh remained friends for life is a testament to the convivial and supportive nature of his personality.

Naresh's research achievements are evidenced in his (more than 400) peer-reviewed research papers in internationally recognised scientific journals. He has published with about 500 authors from more than 40 countries and his works have been cited in more than 26,000 articles (Google Scholar, May 2023). He has also edited a number of books and published many book chapters. This wealth of work has earned him numerous awards and honours throughout his career. The most recent one was in 2013 when he was awarded the Doctor of Science (DSc) at Cranfield University for his scientific contributions in the area of 'Ecophysiology of spoilage and mycotoxigenic fungi'.

He was involved in the establishment of the International Commission for Food Mycology (ICFM) and had a career-long devotion to the British Mycological Society (BMS) where he was the heart and soul of many meetings and activities, not least by acting as President from 2011 to 2012, and most recently holding the role of General Secretary. He was a Fellow of the Royal Society of Biology, Fellow of the British Society of Plant Pathology, Member of the Society of General Microbiology, Member of the Association of Applied Biologists, Fellow of the Society for Applied Microbiology, and Member of the International Society for Mycotoxicology.

He served on the editorial boards of several leading scientific journals in his field: *Journal of Applied Microbiology* and *Letters in Applied Microbiology* (2000-2005), *Mycological Research* (2000-2003, a journal that was formerly called *Transactions of the British Mycological Society* and subsequently called *Fungal Biology*), and *World Mycotoxin Journal* (2014-2017). Up to the present, he was the Editor of the Food Mycology Section for the *International Journal of Food Microbiology*.

During his time at Rothamsted Experimental Station, Naresh met Valerie and the two became a romantic couple (married in 1983), with a close and lifelong partnership.

Naresh and Val had two lovely children, Rohan and Tara, and – a joy to all the family – a granddaughter (from Rohan and daughter-in-law Sonia), Sienna, born in 2021. Naresh doted on his children and granddaughter.

His other passions of tennis, squash, badminton, and table tennis as well as travelling the world, saw him attend the most important open competitions of the Association of Tennis Professionals. He had recently achieved his dream of attending the four Grand Slam tennis tournaments: US Open (USA), Roland Garros (France), Wimbledon (UK), and the Melbourne Open (Australia).

The passing of Naresh, husband, father and grandfather, supervisor to so many students and colleague, collaborator, and friend to so many scientists is a great loss to his family and to the scientific community, and to the field of applied mycology and beyond.

In addition to the depth of his humanity and the way in which he helped others, Naresh's scientific achievements will continue to flow through future generations of scientists and their research. Furthermore, the canon of his works

have a life of their own and will continue to impact human health and the well-being of livestock, crop plants, and the quality and longevity of post-harvest feeds and foods.

Naresh, in his own way, left behind a world that is more compassionate and a safer place (for example in relation to food quality and security). There will not be another Naresh Magan: he was a true family man and a man of the people. He is irreplaceable and special. So many people benefited so much from knowing Naresh, and he will also be deeply missed.

**John E. Hallsworth**

*Queen's University Belfast, United Kingdom*

**Allen Y. Mswaka**

*Eastwood, Nottingham, United Kingdom*

**Andrea Patriarca, Carol Verheecke-Vaessen and Angel Medina**

*Applied Mycology Group, Cranfield University, United Kingdom*

