Science Societies

In memoriam: Pieter Raats

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In Memoriam



Pieter Raats
1935–2025

Our former colleague, Piet(er) Raats, passed away on June 25, 2025. He was a respected scientist in soil physics, doctoral supervisor and adviser, and author, who continued to contribute to science well into old age. He was a Fellow of SSSA and a 59-year member.

After his study in Wageningen (then called: Landbouwhogeschool Wageningen), Pieter left for the USA for the first part of his scientific career. In 1965, he obtained his Ph.D. at the University of Illinois with his dissertation on “Development of Equations Describing Transport of Mass and Momentum in Porous Media with Special Reference to Soils.” Next, he focused primarily on the analytical approach to water flow in soil under the influence of drainage and/or irrigation with particular attention to root water uptake. He was especially interested in the underlying mathematics and the application of physics (transport of mass, momentum, energy). After the University of Illinois, he worked for a USDA lab in Madison, WI as well as at the University of Wisconsin and then at the USDA-ARS Salinity Lab in Riverside, CA.

He returned to the Netherlands in 1980 where he was appointed by the Institute for Soil Fertility (IB) in Haren. In 1987, he became Head of the Soil Physics Department. There, he soon became involved in the doctoral research of Peter de Willigen and Meine van Noordwijk; he was their doctoral adviser together with C.T. de Wit. In total, Pieter was involved as doctoral supervisor and adviser in eight Ph.D. dissertations, including those of the authors. In addition, he was involved in several M.Sc. theses.

He always enjoyed collaborating with younger colleagues and actively supported such cooperation—for example, by acting as a doctoral adviser alongside Bert Janssen at Ph.D. meetings of the C.T. De Wit Production Ecology Graduate School. He also organized a summer school, titled “Transport Phenomena in Porous Media: The Method

of Volume Averaging." He concluded his professional career as professor in the Mathematics Chair Group of Wageningen University.

His work was highly valued both nationally and internationally. For example, in 2011, a symposium titled "Porous Media Physics and Mathematics" was organized in Wageningen in honor of his 75th birthday. In 2016, a European Geosciences Union session was dedicated to him on the occasion of his 80th birthday: "The Role of Flow and Transport Theories in the Soil and Plant Sciences: Honorary Session Peter Raats."

Pieter authored 174 publications. If one were to be singled out as having made a significant contribution to the field of soil physics, it would be his 1970 paper in which he introduced the term "matric flux potential." While this potential was already known in general physics as the Kirchhoff potential, its application to soil physics and the interpretation of its significance for the field was introduced by Pieter. This potential is used, among other things, in process-based water uptake models.

Even at an advanced age, he continued to contribute to science as evidenced by his co-authorship of two 2024 publications in *Advances in Water Resources*. In addition to innovative research, he was also interested in the history of soil physics, on which he wrote several publications. He also contributed to memorial publications about renowned soil physicists.

Some of us saw Pieter as a scientific father figure. He always had our best interests at heart, was enthusiastic, yet also offered correction when our work fell short. It was remarkable that such a theoretical soil physicist strongly encouraged the experimental side of our research. He was a kind and gracious man, and it was a pleasure to communicate and engage in discussions with him.

Rien van Genuchten summed up his thoughts on Pieter this way: “Peter was a genius, and bigger than all of us combined. Formally and informally. In many, many different ways.”

Our thoughts are with his wife Corrie, his children Monique, David, and Bart, and grandchildren during this difficult time. We wish them comfort and strength as they come to terms with their loss.

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