

In Memoriam: Pieter Hofstra (1975-2022)

Obituaries

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Richard Blute (University of Ottawa)

Philip Scott (University of Ottawa)



Pieter Hofstra (1975-2022), who passed away suddenly in May, was a mathematician in the Dept. of Mathematics and Statistics at the University of Ottawa. He was a dedicated teacher and a creative and brilliant scientist. Pieter grew up in the Netherlands, where his parents were music teachers and his father a concert pianist. He studied piano from age 3, and continued music throughout his life, mostly jazz piano and guitar. Indeed, while in graduate school, he earned extra money playing jazz in night clubs. He did his graduate work at the University of Utrecht, getting a Master's Degree in Philosophy and then a Phd in mathematics under Jaap van Oosten.

In 2003, shortly after getting his Phd, Pieter came to the University of Ottawa Mathematics Department for a postdoctoral fellowship with the categorical logic group. From 2005-2007 he was a postdoctoral fellow in the Calgary Computer Science Department with Robin Cockett, and then returned to Ottawa in 2007 to take up a full-time position in the Mathematics Department.

Pieter was remarkably gifted in many areas. In his youth, he spent his summers in Switzerland climbing mountains, and maintained his love for serious mountaineering throughout his life. Even as a young student he had a photographic memory, and in graduate school—according to his supervisor—he never took notes of their long discussions, but could remember them in detail. The mathematical logic group at Utrecht had expertise in multiple areas of logic, all of which Pieter rapidly assimilated.

Let us mention just a few of his major scientific works. His Phd thesis was in category theory (specifically topos theory) and abstract recursion theory. He went on to publish a series of increasingly influential papers from his thesis on the foundations of so-called Realizability Toposes. In Calgary, he began a collaboration with Robin Cockett on a category-theoretic approach to computability and complexity theory called Turing Categories, which resulted in a series of important papers laying a new foundation for the subject.

Starting over 10 years ago, Pieter, with Jonathan Funk (CCNY), introduced a new concept: isotropy groups of toposes. This work led to an extensive and influential literature, with contributions by many colleagues and graduate students. Another series of papers in the Funk-Hofstra collaboration examines the foundations of inverse semigroups, groupoids and pseudo-groups via Grothendieck topos theory. Pieter was also interested in higher dimensional categories as well as the developments surrounding Voevodsky's Homotopy Type Theory; in the latter area, he wrote papers with two of the fundamental developers of the subject, Michael Warren and Steve Awodey.

Pieter was a superb, award-winning teacher. A skilled poker player, for many years he taught an extremely popular first-year course called Poker 101, a course which attracted a large audience from all areas of the university. He illustrated the mathematical foundations of such games using vivid real-time presentations; this course led many students from other departments to major in mathematics. He was a lively and appealing lecturer, whom the students adored. His exceptional teaching skills were rewarded when Pieter received the University Of Ottawa Excellence in Education prize.

But more than all of these fine attributes, Pieter was a dear friend who will be missed terribly.

