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FOREWORD

RICHARD BLUTE, EUGENIA CHENG, ROBIN COCKETT, AND PHIL SCOTT

Dear friend and colleague to the category theory community, Pieter Hofstra (1975–2022) was a dedicated teacher and a creative and brilliant scientist.

Pieter grew up in the Netherlands, where he did his graduate work at the University of Utrecht, getting a master's degree in Philosophy and then a PhD in Mathematics. In 2003, Pieter came to the University of Ottawa for a postdoctoral fellowship with the categorical logic group. From 2005–2007 he was a postdoctoral fellow in the Calgary Computer Science Department, and then returned to Ottawa in 2007 to take up a full-time position in the Department of Mathematics and Statistics.

Pieter was one of the world's leading researchers in category theory and abstract recursion theory. He went on to publish a series of increasingly influential papers from his thesis on the foundations of what he 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 remarkably gifted in many areas. Among his diverse interests, he maintained a love for serious mountaineering throughout his life. He had a photographic memory and could remember details of long discussions without taking notes. He studied piano from age 3 and he continued music throughout his life, mostly jazz piano and guitar, earning extra money playing jazz in night clubs during his graduate studies.

The authors whose papers appear in this special volume were happy to dedicate their work to Pieter with gratitude for inspirational research and his friendship.

The Guest Editors: Richard Blute, Eugenia Cheng, Robin Cockett, and Phil Scott

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