Preface

In this volume of *Pure And Applied Mathematics Quarterly* we joyfully commemorate the mathematical work of Herbert Blaine Lawson, Jr., on the occasion of his 80$^{\text{th}}$ birthday.

Blaine Lawson stands as a preeminent mathematician, renowned for his profound contributions spanning various branches of geometry and topology. His impact extends across the theories of minimal surfaces and foliations; the study of scalar curvature and gauge theories; the development of calibrated geometries; the study of algebraic cycles, with applications to homotopy theory, along with seminal developments in geometric partial differential equations. The depth and breadth of his contributions are detailed in the article "The Mathematical Work of H. Blaine Lawson, Jr.," within this volume.

Born on January 4, 1942, in Norristown, Pennsylvania, USA, Blaine earned his PhD from Stanford University in 1968 under the supervision of Robert Osserman. Starting his mathematical career at the University of California, Berkeley, where he served as a professor until 1980, thereafter joining Stony Brook University, where he currently holds the title of Distinguished Professor. Throughout his career, Blaine held extended visiting positions at various prestigious institutions, including the *Instituto de Matemática Pura e Aplicada* (IMPA, Brazil), *Institute for Advanced Study* (IAS, Princeton), *Institut des Hautes Études Scientifiques* (IHES, Bures-sur-Yvette, France), *Research Institute for Mathematical Sciences* (RIMS, Kyoto, Japan), *Mathematical Sciences Research Institute* (MSRI, Berkeley), *Institut Henri Poincaré* (IHP, Paris, France).

Lawson's outstanding contributions to mathematics have garnered widespread recognition, evidenced by numerous awards and honors. A Sloan Research Fellow (1970–1973) and Guggenheim Fellow (1983–1984), he received the Leroy P. Steele Prize from the American Mathematical Society in 1975 and delivered two addresses at the International Congress of Mathematicians (1974 and 1994). Blaine was elected to the National Academy of Sciences in 1995 and to the American Academy of Arts and Sciences in 2013. He is a member of the Brazilian Academy of Sciences since 1999, and was a Fellow of the Japan Society for Promotion of Sciences (Kyoto, 1986) and a Hardy Lecturer of the London Mathematical Society in 1991.

Beyond his exceptional research, Blaine Lawson is a captivating expositor, effortlessly conveying intricate ideas with infectious enthusiasm, depth, and clarity. His expository works, including the award-winning paper on *Foliations*, the highly cited book *Spin Geometry* (co-authored with Marie-Louise Michaelsohn), and the CBMS book on *The Theory of Gauge Fields in Four Dimensions*, have left an enduring mark.

As of this writing, Blaine has mentored 42 doctoral students and boasts 656 descendants, according to the Math Genealogy Project. Known for generously sharing his ideas, he has also guided generations of post-doctoral fellows.

It is a great pleasure to dedicate this volume to H. Blaine Lawson, Jr. Alongside countless others, we express eternal gratitude for the warmth of his friendship, unwavering support, and boundless inspiration.

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Shiu-Yuen Cheng
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