Preface

In one's life, the age of seventy is a major milestone. There is a Chinese saying: 人生七十古来稀 ("From time immemorial it has been rare for a man to live to seventy.") Although that is not so today, it remains rare indeed to find a man of seventy still so full of energy and ideas, who remains active as ever, finishing many existing projects and beginning new ones, and who inspires and impresses those who work with him. Professor Shing-Tung Yau, who has turned seventy this year, is such a person.

He is one of the most distinguished mathematicians of the past fifty years. His work has spanned many subjects. He is both a problem solver and a theory builder, and his contributions have profoundly changed the broad field of geometric analysis and related topics in physics. This is exemplified by his development of the Calabi–Yau theory. If there is still such a thing as a universalist in mathematics, Yau is a top candidate for the distinction.

But he is more than a great research mathematician. To see this, one need only consider the many mathematics centers and other programs that he has initiated. His many outreach programs comprise a concrete example of the vertical integration of mathematics and science. And in a sense, Yau's mathematical world is even broader than that, for he is also a celebrity and a spokesman for mathematics and science, and his opinions and voices are heard and appreciated by people of all sorts.

To understand properly the work and life of Yau, we can look from both inside and outside. For the inside look—from Yau's own perspective—there are his books *The Shape of Inner Space* (with Steve Nadis, Basic Books, 2010) and *The Shape of a Life* (with Steve Nadis, Yale University Press, 2019). The former is more mathematically oriented, the latter more autobiographical.

For the outside view—the perspectives of others—we have edited a new book entitled *Impressions of Shing-Tung Yau and His Mathematical World* (International Press, 2019).

This special issue of the *ICCM Notices* is a more mathematical counterpart to *Impressions*. It presents reflections of friends and colleagues about Yau's impact on their own mathematics.

It should be mentioned that Yau has edited special issues and books honoring many other distinguished mathematicians. Although there have been several books dedicated to Yau, this special issue of the *ICCM Notices* may be the first journal issue dedicated to him. It is our great honor to edit it, and we wish him a very happy 70th birthday, with many healthy and productive years to come.

Guest editors
Shiu-Yuen Cheng
Lizhen Ji
Hao Xu
Xiaokui Yang