

## Preface

In 2019, mathematicians around the world celebrated the 70th birthday of Professor Shing-Tung Yau and expressed their appreciation and admiration. A number of conferences were held throughout the year for this special occasion: at Harvard University (May), at the University of Rome (May/June), at the Chinese University of Hong Kong (June), at the 8th ICCM Congress at Tsinghua University (June), at Lehigh University (November), and elsewhere.

This is the second of two *Surveys in Differential Geometry* volumes in honor of Professor Yau, consisting of articles by some of the speakers at those special conferences and several additional contributions. The articles in this volume include:

Tristan C. Collins and Yun Shi, “Stability and the deformed Hermitian Yang–Mills equation”; Simon Donaldson and Christopher Scaduto, “Associative submanifolds and gradient cycles”; Davide Gaiotto and Edward Witten, “Probing quantization via brane”; L. Gottsche and M. Kool, “Sheaves on surfaces and virtual invariants”; Goo Ishikawa and Stanislaw Janeczko, “Symplectic singularities of differentiable mappings”; Jun Li and Chiu-Chu Melissa Liu, “Counting curves in quintic Calabi–Yau threefolds and Landau–Ginzberg models”; Nikolai Nadirashvili *et al.*, “Conformally maximal metrics for Laplace eigenvalues on surfaces”; Kieran G. O’Grady, “Moduli of sheaves on  $K3$ ’s and higher dimensional HK varieties”; Richard Schoen and Shing-Tung Yau “Positive scalar curvature and minimal hypersurface singularities”; Penny Smith and Karen Uhlenbeck, “Removeability of a codimension four singular set for solutions of a Yang–Mills Higgs equation with small energy”; and Mu-Tao Wang, “Limits of quasi-local angular momentum on an isolated gravitating system”.

We would like to thank all the authors who contributed to this special volume of *Surveys in Differential Geometry*. We are also very grateful to all the organizers and the scientific committee members of the conferences for their great efforts: Wilfried Schmid, Clifford Taubes, Cumrun Vafa, and Horng-Tzer Yau for the Harvard conference; Simone Diverio, Gabriele Mondello, Emanuele Spadaro, Jun Li, and Valentino Tosatti for the Rome conference; Conan Nai Chung Leung, Kwok Wai Chan, Po Lam Yung, and Jun Zou for the CUHK conference; Shiu-Yuen Cheng and Si Li for the Tsinghua

conference; Andrew Harder, David Johnson, Terry Napier, Rob Neel, and Xiaofeng Sun for the Lehigh conference.

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