

Preface

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This special volume of *Advances in Pure and Applied Mathematics* “APAM” is dedicated to the third International Conference on Mathematics and Statistics (AUS-ICMS2020) held at the American University of Sharjah in the United Arab Emirates, 6th -9th February 2020. The volume consists of eight invited peer reviewed articles covering different areas of mathematics by accomplished mathematicians.

These articles cover topics in Combinatorics, Statistics, Math Biology, Dynamical Systems, Partial Differential Equations and Numerical Analysis. Some of these research problems were presented at the conference which is held every 5 years at the American University of Sharjah or “AUS”. This conference aims primarily at promoting scientific engagement of local universities and at enhancing mathematical research activity at the national level.

The AUS-ICMS 2020 was sponsored by AUS, in cooperation with SIAM (Society of Applied and Industrial Mathematics). It attracted over 200 participants worldwide. It featured two invited addresses by Richard Brualdi from the University of Wisconsin entitled “Permutation Matrices and Beyond” and by Philip Maini from Oxford University entitled “Modelling Collective Cell Migration”.

The conference program also comprised special sessions on special topics ranging from Rings, Monoids and Module theory, to Designs, Codes and Graphs as well as Discrete Dynamic Modeling of Biological Systems and Statistical Learning and Data Mining. There were also various sessions on Number Theory, Topology and Geometry, Analysis, PDEs, Probability and Financial Mathematics.

The American University of Sharjah was established in 1997 by his Highness Sheikh Sultan Al Qasimi. The university has established itself as one of the leading universities in the country and the Gulf region due to its commitment to academic excellence and cultural diversity.

The editors would like to thank all those who contributed to the success of the conference. We, as editors, recognize the hardship the COVID-19 pandemic may have had on many of us in the mathematical community, and we are grateful to all those who contributed to the preparation of this volume by either contributing an article or by providing referee reports. Finally, we are grateful to APAM for offering the possibility of publishing this special volume in their collection.