# Preface

This volume presents peer-reviewed contributions covering different areas of mathematics and its applications. Many of these articles were presented at the second International Conference on Mathematics and Statistics, which was held on April 2–5, 2015 at the American University of Sharjah in the United Arab Emirates (UAE). This conference was jointly organized by AUS and the American Mathematical Society. It was attended by over 220 participants from around the world.

The main objective of the conference, which is held every 5 years, is to offer a forum where researchers and scientists working in all fields of mathematics and statistics, and from both academia and industry, can come together, exchange ideas, and learn about recent developments in mathematical research. The conference also aims at promoting the image of mathematics and mathematical research in the UAE and the Gulf region.

In addition to keynote lectures delivered by renowned mathematicians and parallel sessions in all areas of mathematics and statistics, the scientific program of the conference included special sessions in the areas of "commutative algebra and co-algebras", "designs, codes, and graphs", "mathematical applications in biology and medicine", "mathematical finance and probability", "number theory", and "topology and geometry". These special sessions attracted a host of specialists from all five continents. Keynote lectures were delivered by Gunnar Carlsson (Stanford University), Samad Hedayat (University of Illinois at Chicago), and Edriss Titi (Texas A&M). A short address was also given by Richard A. Brualdi (University of Wisconsin, Madison) as the representative of the American Mathematical Society.

The authors of the fine contributions in this volume are mathematicians who are working in or have collaborative ties with mathematicians in the Gulf region. This testifies to the rapid advances in mathematical research that the region is experiencing and to the enormous importance bestowed on academia during the last two decades.

The American University of Sharjah (AUS) is a leading institution of higher education in the UAE. It was founded in 1997 by His Highness Sheikh Dr. Sultan

bin Muhammad Al Qasimi, a member of the Supreme Council of the UAE and ruler of Sharjah. Despite being young in age, AUS is acclaimed throughout the region for its academic excellence and multicultural campus life. Its faculty members come from more than 50 countries while its students hail from more than 90 countries.

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We warmly thank all contributors to this volume and all participants who made this conference a real success.

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