

Algebraic geometry is one of the most diverse fields of research in mathematics. It has had an incredible evolution over the past century, with new subfields constantly branching off and spectacular progress in certain directions and, at the same time, with many fundamental unsolved problems still to be tackled.

In the spring of 2009 the first main workshop of the MSRI algebraic geometry program served as an introductory panorama of current progress in the field, addressed to both beginners and experts. This volume reflects that spirit, offering expository overviews of the state of the art in many areas of algebraic geometry. Prerequisites are kept to a minimum, making the book accessible to a broad range of mathematicians. Many chapters present approaches to long-standing open problems by means of modern techniques currently under development and contain questions and conjectures to help spur future research.

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