PREFACE

This is the first of three issues of the Methods and Applications of Analysis (MAA) dedicated to Professor Joel A. Smoller, who turns seventy this year, by his colleagues, friends, collaborators and former students. It is a great honor for all of us at the Editorial Board of the MAA to dedicate these special issues to Joel on such a happy occasion.

Professor Smoller has been a long time outstanding leader in the Theory of Partial Differential Equations. He has made fundamental and profound contributions in a broad spectrum of analysis as its applications. In particular, Professor Smoller's work has been seminal in the shock wave theory of nonlinear hyperbolic conservation laws, theory of Conley index, theory of reaction-diffusion systems, general relativity, and theory of symmetry-breaking for semi-linear elliptic equations, which have inspired and influenced many students and colleagues throughout the world.

Professor Smoller is not only a great researcher, but also a great teacher. Throughout his distinguished career, he has nurtured nearly thirty PhD students. Many of them have been leading researchers in the field of Partial Differential Equations. As his friends, colleagues, and students who have had many occasions interacting with him, we all have benefited greatly from Joel's insight and enthusiasm about mathematics. The articles in these three special issues of the MAA are intended to reflect some of the impact of Joel's influence.

We are grateful to all the authors who have contributed their excellent articles to these special issues in recognition of invaluable contributions made by Professor Smoller to mathematics. At this special occasion, we would like to express our deepest admiration and friendship to Professor Smoller and to wish him a happy birthday and many more healthy and productive years ahead.

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