

Banach Spaces and their Applications in Analysis

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at Miami University
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In Honor of Nigel Kalton's 60th Birthday

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Preface

Stefan Banach once said:

“A mathematician is a person who can find analogies between theorems; a better mathematician is one who can see analogies between proofs; and the best mathematician can notice analogies between theories. One can imagine that the ultimate mathematician is one who can see analogies between analogies.”

According to this definition, Nigel Kalton is one of the ultimate mathematicians. In his work, Kalton finds underlying connections between seemingly unrelated areas of mathematics. He has been immensely successful in applying Banach space methods to numerous problems in analysis. Thus, we honor him on the occasion of his 60th birthday in 2007.

As evidenced by the participation of over 160 mathematicians from around the world, it is clear that our community sees the power and potential of Banach space methods in solving a broad array of analysis problems. Indeed, in recent years there has been a surge of profound new developments in analysis – developments whose connecting thread is the use of Banach space methods. Many problems seemingly far from classical geometry of Banach spaces have been solved using Banach space techniques.

In this conference, specialists who have been instrumental in these new developments were brought together. The emphasis of the conference was on applications of Banach space methods in the following areas:

1. Nonlinear theory (Lipschitz classifications of Banach/metric spaces, linear programming methods and related topics);
2. Isomorphic theory of Banach spaces including connections with combinatorics and set theory;
3. Algebraic and homological methods in Banach spaces;
4. Approximation theory and algorithms in Banach spaces (greedy algorithms, interpolation etc.);
5. Functional calculus and applications to partial differential equations.

At the conference there were 15 plenary talks giving a broad overview of various areas where Banach space methods found applications. In addition, 105 talks were delivered in specialized sessions. These *Proceedings* reflect the conference. They include 11 papers by plenary speakers and 16 specialized papers by participants of the conference. We especially thank Gilles Godefroy for writing an excellent article surveying the vast work of Nigel Kalton. Godefroy describes many of the important breakthroughs in different areas of analysis and presents open problems for further research.

We thank Miami University for hosting the conference and providing substantial support for a successful meeting. We especially thank Mark A. Smith, chair of the Department of Mathematics and Statistics at Miami University for both financial and logistical support. We thank the following units of Miami University for financial grants in support of the conference: the Office of the Dean of Arts and Science, the Office of the Dean of Engineering and Applied Science, the Office of the Provost and the International Visiting Scholar Exchange Fund.

We thank Mark Ashbaugh, chair of the Department of Mathematics at the University of Missouri-Columbia, and Curator's Professor Fund from University of Missouri-Columbia for their financial support.

We thank the American Mathematical Society and a private donor for their financial contributions.

We thank the following publishers who generously provided books for display at the conference: Cambridge University Press, Princeton University Press and Springer-Verlag. We also thank Brill Science Library of Miami University for lending additional books for display.

We thank the National Science Foundation, whose grant provided travel support for many conference participants.

We thank the support staff, especially Linda Ferriell, for helping to run the conference smoothly.

Last, but most important of all, we thank all the speakers and participants of the conference who made it a success.

Oxford, Ohio, June 2007

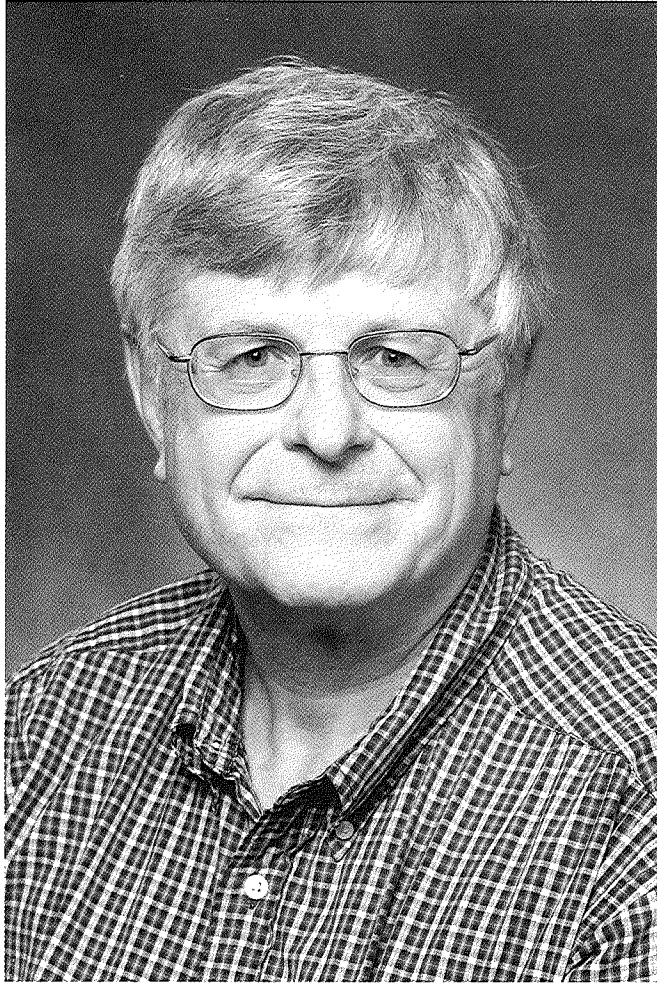
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Nigel J. Kalton