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Combinatorial Methods in Topology and Algebraic Geometry

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**Combinatorial Methods
in Topology and
Algebraic Geometry**

CONTEMPORARY MATHEMATICS

Volume 44

Combinatorial Methods in Topology and Algebraic Geometry

**John R. Harper and
Richard Mandelbaum, Editors**

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**To Dorothy Maharam Stone and Arthur Harold Stone
in appreciation for their contribution and
service to Mathematics.**

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INTRODUCTION

In recent years, combinatorial methods have re-appeared in deep and diverse ways, both in topology and algebraic geometry. In honor of Prof. Arthur H. Stone, the Department of Mathematics of the University of Rochester held a conference June 20–July 2, 1982. The purpose was to present a series of lectures surveying recent accomplishments and indicating further directions for research. These proceedings contain reports from most of the lectures that were given.

On behalf of the organizers, it is a pleasure to acknowledge the support of many people and institutions. Financial support was provided by the National Science Foundation and the Mathematics Department of the University of Rochester. We are grateful to help received from Dr. Alvin Thaler in preparing our proposal. During the conference we were assisted by Prof. A. Libgober and M. Scharlemann who organized seminars. Sally Allison, of the University of Rochester, provided us with logistical support. The departmental staff, Roberta Colon and Joan Robinson looked after myriads of details. We would especially like to thank Joan Robinson for an outstanding job of typing all the manuscripts in $\text{T}_{\text{E}}\text{X}$ and Prof. A. Pizer for making sure that everything connected with $\text{T}_{\text{E}}\text{X}$ worked out as expected.

PLENARY LECTURES

- M. COHEN/W. METZLER: Combinatorial group theory and simple homotopy theory
- W. TUTTE: Map coloring and differential equations
- F. COHEN: Braids and homotopy theory
- R. MANDELBAUM: Combinatorial group theory and Lefschetz fibrations
- F. RAYMOND: Mapping class groups of Seifert manifolds
- M. BARRATT: Taming Hopf invariants
- B. MOISHEZON: The braid group and algebraic surfaces
- M. E. RUDIN: Paracompactness
- S. CAPPELL: The topology of group representations
- R. KIRBY: An overview of new results in 4-dimensional topology
- R. EDWARDS: Freedman's work and its consequences
- J. STALLINGS: Finite graphs and free groups
- J. MONTESINOS: Representing 3-manifolds as branched covers

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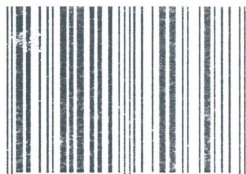
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