CONFERENCE ON ALGEBRAIC TOPOLOGY,
THE UNIVERSITY OF ILLINOIS AT
CHICAGO CIRCLE, JUNE 17 - JUNE 28, 1968

The following papers, all of which were received by January 1, 1969, contain, often in revised or expanded form, talks that were held at the Conference. Not all the talks at the conference are published here.

On behalf of the participants, I wish to express thanks to the University or Illinois at Chicago Circle for providing the facilities for the Conference, and to the National Science Foundation for providing the money.

Victor Gugenheim

CONTENTS

James C. Becker, Orientability and Extensions of Cohomology Theories 1

Edgar H. Brown, Jr., The Arf Invariant of a Manifold 9

Joel M. Cohen, The non-existence of spaces with finitely generated stable homotopy 19

Byron Drachman, On some applications of the Cobar construction 24

S. Gitler and R. James Milgram, Evaluating secondary operations on low dimensional classes 47

Brayton Gray, Operations and two cell complexes 61

V.K.A.M. Gugenheim and R. James Milgram Perturbation theory in homological algebra 69

Richard O. Hill, Jr., On a family of tertiary operations 79

John R. Harper, Secondary operations associated with B(n) 96

David Kraines, Loop operations 102

Leif Kristensen, On secondary cohomology operations II 117

Leif Kristensen and Ib Madsen,
On the structure of the operation algebra for certain cohomology theories 134

Mark Mahowald, The obstruction theory based on a particular quotient group of $\pi_*(V_n)$ 161

W.S. Massey, Higher order linking numbers 174

Jean-Pierre Meyer,
Relative stable homotopy 206

R. James Milgram,
The cohomology of B_G 213

N. Mimura, The homotopy groups of the exceptional lie groups 221

R.M.F. Moss, Secondary compositions and the Adams spectral sequence 229

Hans Jørgen Munkholm,
Mod 2 cohomology of $D2^n$ and its extensions by Z_2 234

G. Nishida, Extended power operations in homotopy theory 253

Franklin P. Peterson,
On the cohomology BSF and BSPL 260

Gerald J. Porter,
Higher product operations 265

James D. Stasheff,
The image of J as a space Mod P 276

James D. Stasheff,
Problems proposed at the Conference 288