

# Contents

Preface	ix
Schedule of talks	xi
Results of Cohen–Lenstra type for quadratic function fields JEFFREY D. ACHTER	1
The hardness of computing an eigenform ERIC BACH and DENIS CHARLES	9
Constructing elliptic curves of prime order REINIER BRÖKER and PETER STEVENHAGEN	17
Space-time codes and non-associative division algebras arising from elliptic curves ABDULAZIZ DEAJIM and DAVID GRANT	29
Points of low height on $\mathbb{P}^1$ over number fields and bounds for torsion in class groups JORDAN S. ELLENBERG	45
Supersingular genus-2 curves over fields of characteristic 3 EVERETT W. HOWE	49
Search techniques for root-unitary polynomials KIRAN S. KEDLAYA	71
Yet more elements in the Shafarevich–Tate group of the jacobian of a Fermat Curve BENJAMIN LEVITT and WILLIAM MCCALLUM	83
Stable reduction of $X_0(81)$ KEN MCMURDY	91
Isomorphism types of commutative algebras of finite rank over an algebraically closed field BJORN POONEN	111
A short guide to $p$ -torsion of abelian varieties in characteristic $p$ RACHEL PRIES	121