

CENTRE FOR ALGEBRA, LOGIC AND COMPUTATION (CALC)

STATUS REPORT

<http://math.usask.ca/fvk/algg.htm>

Mission: The Algebra and Logic Group in the Department of Mathematics and Statistics was founded in 1997 by Profs. F.V. Kuhlmann, S. Kuhlmann and M. Marshall. It was approved as a Research Unit in the College of Arts and Science in August of 2002, and as a Research Centre of the University of Saskatchewan in 2005 with one additional member (Prof. M. Bremner). It is devoted to the study of algebraic structures in a broad sense (commutative, associative, and nonassociative), their model theory and representation theory, and their applications in various branches of mathematics. The members of the Centre, together with their visitors, postdoctoral fellows, and graduate students, are especially active in the following research areas: real algebra and real algebraic geometry (including quadratic forms, spaces of orderings, and optimization), field theory (including ordered fields, valued fields, and function fields), model-theoretic algebra (including power series fields in positive characteristic), local uniformization and resolution of singularities, representation theory (including Lie and other nonassociative algebras), free algebras and universal enveloping algebras, varieties of algebras defined by polynomial identities, and symbolic computation (including matrix canonical forms and lattice basis reduction).

Goals and objectives of the centre: The primary goal is published original research, both individual and collaborative, in pure, applied and computational aspects of modern algebra. An essential component of this goal is the training of highly qualified personnel: postdoctoral fellows, graduate students (at both the M.Sc. and Ph.D. levels), and NSERC undergraduate summer students. Additional goals include invitation of research visitors; collaboration with research groups at other institutions; organization of seminars and conferences; and networking with other researchers in the Prairie provinces, Canada, and other countries. All of these goals combine to assist CALC in bringing together researchers from all over the world and in stimulating and facilitating cutting-edge research in pure and applied algebra, thereby promoting the University provincially, nationally and internationally.

Types of activities undertaken to achieve mandate: Research in pure and applied algebra; training of highly qualified personnel; organization of seminars and conferences.

Governance: Director: Murray Marshall, professor emeritus. Other faculty members: Murray Bremner, professor; Franz-Viktor Kuhlmann, professor; Salma Kuhlmann, adjunct professor (all of the Department of Mathematics and Statistics).