1060-20-200 **Stephen A. Linton*** (sal@cs.st-andrews.ac.uk), School of Computer Sciebnce, University of St Andrews, North Haugh, St Andrews, Fife KY10 3SA, Scotland. *Frameworks for Parallel and Distributed Computational Algebra.* Preliminary report.

The huge success of computational methods in algebra, combinatorics and representation theory over the last thirty years has been driven by both the development of increasingly sophisticated algorithms (backed by some very lovely mathematics) and the steady increase in the speed of the computers available to mathematicians. In recent years, this increase has almost stopped, being replaced by an increase in the *number* of computers, or at least cores, available. Our current software base (primarily GAP and Magma, and associated packages and applications) is not well placed to take advantage of this. In this talk, I will explain a variety of developments in GAP, some already available, some in train, which aim to tackle this problem, and make it as easy and natural as possible to use multiple processors and multiple computers to solve bigger mathematical problems faster. I will also be seeking input from the audience into the types of large computation they might wish to do and the parallel programming constructs that might be of value. (Received March 30, 2010)