Biographical Information

Dr. John Little

College of the Holy Cross

Professor of Mathematics at the College of the Holy Cross, Dr. Little will serve as the first PURE Math RA in the Summer of 2012. He has chosen Computational Commutative Algebra as his summer research topic. Systems of polynomial equations and algebraic geometry are fundamental in many parts of mathematics. Recently, with the explosive growth in computer resources, the development of powerful computer algebra systems, and the discovery (or rediscovery) of algorithmic approaches, algebraic geometry has also found significant applications; for example, in geometric design, combinatorics, invariant theory, integer programming, coding theory, robotics, and signal processing. One of the most important computational tools in this area is Buchberger’s theory of Gröbner bases. Gröbner bases and resultants also offer many opportunities to involve undergraduates in projects that are excellent educational experiences, which often result in significant research.