

UNIVERSITY OF DELAWARE
DEPARTMENT OF MATHEMATICAL SCIENCES
DISCRETE MATHEMATICS SEMINAR

Friday, November 12th, 2004, 3pm, Room 210 Ewing Hall

Value sets of polynomials over finite fields

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Let F_q denote the finite field of order q . For a polynomial f over F_q , let $V_f = \{f(a) \mid a \in F_q\}$ denote the *value set* of f . We will discuss a variety of problems and results concerning the cardinality of the value set of a polynomial and present some joint work with Pinaki Das which improves the best lower bound for the value set of a polynomial f over F_q . Polynomials whose value set has maximal cardinality q are called *permutation polynomials*. We will also discuss some results related to permutation polynomials over finite fields along with some of their applications.