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Julianna S Tymoczko* (jtymoczko@smith.edu), Department of Mathematics, 44 College Lane, Northampton, MA 01063. *Generalized splines and Schubert calculus.*

Splines are piecewise polynomials on polytopes that arise in many parts of applied mathematics, including computer graphics, numerical analysis, and PDEs. Billera pioneered the study of algebraic splines, which uses tools from commutative and homological algebra to attack combinatorial and algebraic questions about splines. Independently, algebraic geometers and topologists discovered that splines describe the equivariant cohomology rings of many important varieties.

In this talk, we describe a further generalization of splines, in which we loosen both the combinatorial condition inherent in "polytopes" and the algebraic condition from "piecewise polynomials". We then describe recent results due to many different people that construct bases for various modules of splines and show how these can be applied to problems in Schubert calculus. (Received September 17, 2013)