1046-65-906 **John E. Osborn*** (`jeo@math.umd.edu`), Department of Mathematics, University of Maryland, College Park, MD 20742. *Generalized Finite Element Methods, Meshless Methods, and Quadrature.*

Generalized Finite Element Methods (GFEM) and Meshless Methods (MM) are the focus of considerable interest, especially in the engineering community. In this talk I will survey MM and GFEM, concentrating on basic ideas. It is widely recognized that creating effective quadrature schemes for GFEM and MM is an important problem (see, *e.g.,* A stabilized conforming nodal integration for Galerkin mesh free methods, J.-S. Chen, C.-T. Wu, S. Yoon, and Y. You, *Int. J. Numer. Meth. Engng.* 2001; **50**:435–466). I will discuss recent joint results with Ivo Babuška, Uday Banerjee, and Helen Li on quadrature schemes for MM. (Received September 12, 2008)