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**Joshua R. Davis\*** ([jdavis@math.duke.edu](mailto:jdavis@math.duke.edu)), Mathematics Department, Duke University, Box 90320, Durham, NC 27708. *Singular Relative Gromov-Witten Invariants*.

Relative Gromov-Witten invariants are counts of pseudoholomorphic maps in symplectic manifolds with specified tangency conditions along a smooth "divisor"; they find applications in enumerative geometry and in string theory. In this talk we construct the moduli space of such maps relative to a divisor with normal crossings (satisfying additional technical assumptions). We also investigate the behavior of the invariants relative to a smooth divisor as it degenerates to one with normal crossings. This degeneration arises naturally in symplectic surgeries. In examples, multiplicity effects emerge from the degeneration that reveal some of the combinatorics of the relative Gromov-Witten invariants. (Received September 25, 2006)