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**Alissa S. Crans\*** ([acrans@lmu.edu](mailto:acrans@lmu.edu)), Loyola Marymount University, Department of Mathematics, One LMU Drive, Suite 2700, Los Angeles, CA 90045. *2-Quandles: Categorified Quandles*. Preliminary report.

A quandle is a set equipped with two binary operations satisfying axioms that capture the essential properties of group conjugation and algebraically encode the three Reidemeister moves. Quandles have been studied extensively in connection with applications to knots and knotted surfaces. A 2-quandle is a categorified version of a quandle, in which the underlying set has been replaced by a category and the two binary operations have been replaced by functors. We will discuss relationships between 2-quandles and various categorified structures, including 2-groups, and Lie 2-algebras, and we will explore the possibility of knot and 2-knot invariants arising from 2-quandles. This is work in progress with J. Scott Carter, Mohamed Elhamdadi, and Masahico Saito. (Received September 15, 2009)