

*COLLOQUIUM*

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“Colorings, Quandles, and Categorifications”

Wednesday, April 2, 2008

4:10—5:00pm

Surge 284

Tea Time is at 3:40 pm in the Faculty Lounge

ABSTRACT: Can you color the arcs of a knot diagram red, green, and blue so that at each crossing either all of the colors show up, or none of them do? How many ways can you do it? Does the diagram matter, or just the knot type? Most importantly, can we generalize these questions? Coloring numbers are one of the simplest combinatorial invariants of knots and links to describe. And with Joyce’s introduction of quandles, we can understand them more algebraically. But can we extend these invariants to tangles—knots and links with free ends? Indeed we can, once we “categorify”! Starting from the definition of coloring numbers, we will categorify them and establish this extension to tangles. Then, decategorifying will leave us with matrix representations of the monoidal category of tangles.