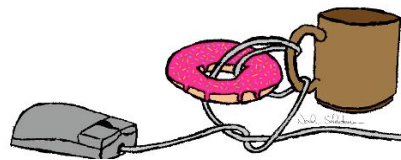
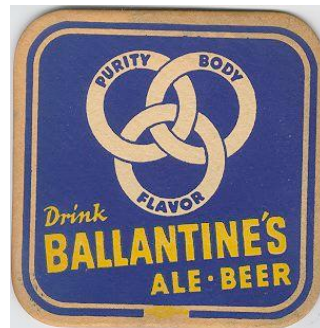


# The SUMO Speaker Series for Undergraduates

*(food from Pizza Chicago)*  
Wednesday, February 3  
4:40-5:30, room 380C

## Borromean rings and Brunnian links

Sam Lichtenstein



Abstract: The pictures above show a curious mathematical object: the Borromean rings, named for the family of Italian nobles who used the rings as their crest. They are a non-trivial 3-ring link, in the sense that the three rings cannot be separated, but each 2-ring sublink is trivial. How might one give a rigorous proof of this fact?

We'll discuss the Borromean rings and their generalizations, Brunnian and  $n$ -Borromean links, and how to go about producing examples of them. Along the way we will consider some knot and link "invariants" which let us distinguish non-equivalent links, and at the same time give a convenient group-theoretic language for making and analyzing examples.

Challenge question: Can you actually build the Borromean rings above out of 3 physical, rigid circular rings of the same size?

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