MANY CHEERFUL FACTS

presents

Many Cheerful Categories

a talk by Noah Snyder

1:10 pm - 2:00 on Wednesday, November 2nd, in room 1015.

Many of the examples of categories that you may have run across are enormous, difficult to describe, and full of complicated objects, like the category of groups, of rings, or of manifolds. Although groups are cheerful, the category of all groups is decidedly uncheerful.

In this talk I'll discuss much smaller happier categories, starting with the category of matrices (a.k.a. the category of vector spaces) and moving on to some topological examples like the category of tangles, the category of 2-dimensional manifolds with boundary. The objects aren't very complicated, and it is the morphisms that are of interest.

Finally I'll give a few examples of functors of categories and show how they give topological invariants.

I am the very model of a modern Major General,
I've information vegetable, animal, and mineral,
I know the kings of England, and I quote the fights historical
From Marathon to Waterloo, in order categorical;
I'm very well acquainted, too, with matters mathematical,
I understand equations, both the simple and quadratical,
About binomial theorem I'm teeming with a lot o' news,
With many cheerful facts about the square of the hypotenuse!

- Gilbert & Sullivan $P \circ P$