GEOFF VOOYS, University of Calgary *Pseudolimits of Tangent Categories (with Applications!)*

Tangent categories are an area of category theory which provide abstract structural semantics for performing differential geometric reasoning. Pseudolimits, on another hand, are a higher-categorical weakening of the concept of a limit: they provide, in a 2-category (among other more complicated settings), the notion of a limit of a diagram which only has a universal property "up to coherent isomorphism." There is a 2-category \mathfrak{Tan} of tangent categories, and studying the pseudolimits which appear there provide categories which have a natural notion of objects with differential structure sitting universally over some given data up to differentially coherent isomorphisms.

In this talk, based on joint work with Dorette Pronk, we will review the definitions of all characters in play and then discuss the pseudolimits in \mathfrak{Tan} of diagrams $F : \mathcal{C}^{\mathrm{op}} \to \mathfrak{Tan}$ for a 1-category \mathfrak{Tan} . Additionally, depending on time, we will also mutter some words regarding applications of these concepts to equivariant algebraic geometry and equivariant differential geometry.