GEOFF VOOYS, Dalhousie University
A Pseudofunctorial Perspective on Equivariant Categories

In this talk we will present a unified perspective on categories of equivariant sheaves, equivariant derived categories, equivairant perverse sheaves, and other equivariant categories that goes through the language of pseudofunctors. More explicitly, for any field K and for any smooth algebraic group G acting on a quasi-projective K-variety X, we define a category $\mathbf{SfResl}_G(X)$ of certain G-resolutions of X for which if $F : \mathbf{SfResl}_G(X)^{\mathsf{op}} \to \mathfrak{Cat}$ is a pseudofunctor with some mild techinical conditions there is an equivariant category $F_G(X)$ induced by F. We will give many examples of the categories that arise in this language and some of the structure theorems that this language and construction makes immediate and useful for defining equivariant functors and equivariant adjoints. Time-permitting, we will also discuss some comparison theorems and current work in progress using these equivariant categories.