1077-55-2376 **David T Oury***, doury@slu.edu, St. Louis, MO 63103. *The Anodyne Theorem in Model Category Theory.*

The goal of this talk is to define a class of theorems which we call Anodyne Theorems (AT) and to explain their use with respect to model categories. These theorems are used in the literature by Mark Hovey and by Dominic Verity but not under this name. We describe their use in developing model structures on presheaf categories, in general and then for a specific presheaf catgory. In the first part of the talk, we describe the role of Anodyne Theorems and their relationship to the concept of homotopy in demonstrating model structures. Examples of its use can be found in the work of Hovey and Verity with respect to monoidal model categories. In the second part of the talk, we describe the specific methods used to demonstrate an Anodyne Theorem on the category of Θ_2-sets. First though we describe the AT for the model structure on simplicial sets whose fibrant objects are quasi-categories. We then describe the Θ_2-sets and lift the AT for simplicial sets to the context of Θ_2-sets. This requires the use of Day Convolution to define a pushout product of n variables (akin to the pushout product of 2 variables.) The corner tensor is an essential piece of the AT in this context and we provide a sketch of its construction. (Received September 22, 2011)