1132-55-176 **Ross Geoghegan*** (ross@math.binghamton.edu). *Parametrized Fixed Point Theory and Traces.*

I was lucky to work with Andy Nicas between 1986 and 2000 on 1-parameter fixed point theory; I'll discuss that work. In classical Nielsen theory a self-map $f : X \to X$ of a finite complex defines the Reidemeister trace - a souped-up Lefschetz number. It gives complete information about minimal number of fixed points of maps homotopic to f. For the certain kinds of maps this invariant can be interpreted as, roughly, the Hattori-Stallings trace (from K_0 to 0-dimensional Hochschild homology). In dimension 1, the map f is replaced by a homotopy $F : X \times I \to X$. We found a neat analog of the Reidemeister trace which gives significant information about the minimal possible number of "circles of fixed points" in homotopies homotopic to F. For certain kinds of homotopies our invariant can be interpreted as, roughly, the Dennis trace (from K_1 to 1-dimensional Hochschild homology). Among many results, this gave an elegant variation on the s-cobordism Theorem, saying that if the "trace of the Whitehead torsion" is non-zero then it is impossible to deform the top of the cobordism to the bottom without creating a circle of fixed points along the way. I'll describe this and some of our other theorems (quite widespread) having this general flavor. (Received July 21, 2017)