1147-53-132 **Jeffrey S Case*** (`jscase@psu.edu`), Department of Mathematics, 109 McAllister Building, Penn State University, University Park, PA 16802. *Sharp Sobolev trace inequalities via conformal geometry.*

Escobar proved a sharp Sobolev inequality for the embedding of $W^{1,2}(X^{n+1})$ into $L^{2n/(n-1)}(\partial X)$ by exploiting the conformal properties of the Laplacian in X and the normal derivative along the boundary. More recently, an alternative proof was given by using a Dirichlet-to-Neumann operator along the boundary and its close relationship to the 1/2-power of the Laplacian. In this talk, I describe a new relationship between the conformally covariant fractional powers of the Laplacian due to Graham–Zworski and higher-order Dirichlet-to-Neumann operators in the interior, and use it to prove sharp Sobolev inequalities for embeddings of $W^{k,2}$. Other consequences of this relationship, such as a surprising maximum principal for the conformal 3/2-power of the Laplacian, will be discussed. (Received December 31, 2018)

1