

Dear Members of the Selection Committee for the J.J. Sylvester Assistant Professorship,

I am currently a PhD student in Mathematics at the University of Wisconsin-Madison, and expect to graduate in the coming spring. My Research Interests lie primarily in harmonic analysis, spectral geometry, geometric measure theory, and the study of nonlinear wave equations. My thesis problem focuses on studying spectral multipliers on compact manifolds using methods of Fourier integral operators, which I am working on under the supervision of Professor Andreas Seeger.

If awarded the J.J. Sylvester Assistant Professorship, I hope to work with Professor Christopher D. Sogge. Professor Sogge has a strong connection to my research interests. My work on spectral multipliers was greatly elevated by a 2022 Summer School at the University of Wisconsin, Madison, co-organized by Professor Sogge, where I presented a paper by Professor Sogge and Professor Matthew Blair related to L^p bounds for eigenfunctions on manifolds of non-positive curvature. Professor Sogge has also done foundational work on nonlinear wave equations, including the vector-field methods I hope to work with in future research, as detailed in my research statement. Collaborating with Professor Sogge at Johns Hopkins would thus greatly enhance my future research prospects.

Thank you for your consideration,

Jacob Denson