

Dear Members of the Selection Committee for the Postdoctoral Research Associate Position at the University of North Carolina at Chapel Hill,

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.

The Postdoctoral Research Associate position, as the interests of the analysis department at North Carolina harmonize very closely with my own research interests. My PhD work on spectral multipliers closely relates to eigenfunction estimates studied by Professors Yaiza Canzani, Michael Taylor, Hans Christianson, and Jeremy Louis Marzuola. In addition to the problems about multiplier operators and of nodal sets suggested in my research statement, I would also be open to working on other problems in the study of concentration properties of eigenfunctions and in scattering theory with these researchers. I am also beginning to study problems about nonlinear wave equations using vector field methods, especially those related to relativity theory, and so working in the same department as Professor Jason Metcalfe would be a boon to this research. In conclusion, a position at the University of North Carolina would help further my research interests, and hopefully contribute to the research direction of the greater analysis group at Chapel Hill.

Thank you for your consideration,

Jacob Denson