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Graduate program committee

Dear colleagues,

I am pleased to write a letter in support of a summer graduate fellowship for Cody Petrie.

After completing his first two semesters of core courses and research rotations, Cody chose to work with me on his Ph.D. research. Cody's current project is to improve the trial wave function that guide auxiliary field diffusion Monte Carlo calculations. He has already improved over our previous single pair correlations, adding a correlation for a second pair both independent pair correlations and symmetrized pair correlations. He has mastered the programming methods, and has implemented the correlations along with the corresponding operator expectation values. His results show that the alpha particle wave function currently used is adequate, but results improve for ^{16}O and nuclear matter with these new correlations. Along with collaborators at Los Alamos National Laboratory, we have submitted an article to Physical Review C which contains Cody's methods and results.

Cody is continuing to work to improve the auxiliary field diffusion Monte Carlo method to describe nuclei, and is exploring several original ideas.

Cody is a talented scientist. He is making good progress on this research, and his progress would be further enhanced by a summer graduate fellowship.

Please feel free to contact me if you require any additional information.

Best regards,

Prof. Kevin E. Schmidt