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Department of Mathematics

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Attention: Faculty Search Committee
Subject: Letter of recommendation for Andrew Hausrath

Dear Madam/Sir,

I am an associate Professor in the Department of Mathematics and a member of the Applied Mathematics Program at the University of Arizona. I have known Andrew Hausrath for almost two years. He first came to me with some questions on the differential geometry of curves. He told me of his research projects on the protein designs and I rapidly became interested in his exciting program. Shortly thereafter, we started a collaboration, which has led to new results and a pending grant proposal. The central idea of Andrew's research project is to develop continuous representations of protein structures to analyze existing structures and design new ones with specific properties. He has developed many different computational methods based on this idea for rapid search through parameter space. We have since then formalize some of these methods to give them a rigorous mathematical foundation and develop further some of his computational tools. We have already shown thjat we can recover existing structures through these fast computations and are now in the process of identifying new protein candidates with given geometric properties (essentially the coil-coil configurations for the purpose of feasibility demonstration). I believe that his ideas are extremely original and far-reaching. Andrew has as a keen eye for interesting problems, a deep understanding of the computational concepts he uses and how they relate to the real world. He is already a mature researcher who has vision and can organize a long-term theoretical, computational and experimental research program. The multi-disciplinarity environment of your university is perfectly suited for his research and he will undoubtedly become an integral part of the main computational sciences projects developed there.

Finally, Andrew is clearly a gifted teacher. I have asked him to give a class in my graduate course on Methods in Applied Mathematics on the mathematics of X-ray crystallography and the discovery of DNA. Students told me afterwards that it was one of the most interesting applications of the concepts they had learned during the semester.

In conclusions, I believe that Andrew would be an important addition to your Faculty and that his enthusiasm, creativity, and ability to communicate will make him a leader in the field of computational and theoretical biochemistry.

Sincerely yours,



Prof. Alain Goriely