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August 3, 2015

Professor Morris Zapp
Faculty Search Committee Chair
Department of Nuclear Engineering
Euphoric State University
101 Ebury Street
Plotinus, Euphoria 94704

Dear Professor Zapp,

I am responding to the advertised tenure track position (010101) in the Department of Nuclear Engineering at Euphoric State University. I am a postdoctoral fellow with the Berkeley Institute for Data Science and the Nuclear Science and Security Consortium at the University of California Berkeley. There, my current postdoctoral work is in the area of computational multiscale multiphysics transient simulation in the Pebble Bed Fluoride-Salt Cooled High-Temperature Reactor.

I received my Ph.D. in Nuclear Engineering from the University of Wisconsin - Madison in August of 2013 in the area of nuclear fuel cycle modeling and systems analysis. My dissertation work, conducted in a two year fellowship at Argonne National Laboratory, resulted in a thermal and hydrologic model of spent nuclear fuel disposal system performance in generic geologic media. At Wisconsin, I was also the lead developer of the Cyclus nuclear fuel cycle simulator. This agent-based nuclear fuel cycle simulator has now grown from an individual project to a multi-institution, international collaboration. Accordingly, my involvement in the field of fuel cycle analysis and my contributions to the Cyclus project were recognized with the John Randall and Roy G. Post graduate awards as well as election to the American Nuclear Society Fuel Cycle and Waste Management Division executive committee, of which I am now the Vice Chair.

In the near term, my research program will improve the safety and sustainability of nuclear energy through modeling and simulation of both nuclear reactors and fuel cycles. In the long term, I will tackle the many scales and multiple physics of this challenge through efficient algorithms, novel computer architectures, and sophisticated software design. My strong research record in computational energy systems analysis and my recent work in high-fidelity coupled multiphysics uniquely position me to develop computational methods for investigating reactor designs, fuel cycle strategies, and the connections between them.

I look forward to bringing active, inclusive, example-driven instructional design to both new and existing courses. My accomplishments using these pedagogical practices have

been recognized internationally through my election as Chair of the Steering Committee of the Software Carpentry Foundation. Through this international nonprofit devoted to scientific computing education, I have developed curriculum and instructed diverse groups of scientists for over six years. Based on that experience, I have also recently co-authored a book which was designed to be a suitible textbook for an upper level undergraduate course on "Effective Research Computing" in the physical sciences and engineering.

I would particularly look forward to participating in the Energy Feasibility Group in the department and can envision collaborating with Smith on projects related to multiphysics and with Wesson on tying those insights to fuel cycles. I am also interested in the activities of the Center for Data Science on campus and would look forward to bringing my data science perspective into those cross-disciplinary discussions.

Irrespective of the status of my application, I welcome the opportunity of a visit to share my research and would be delighted to learn more about the department at ESU. I will be attending the 2015 American Nuclear Society meeting in November and would be glad to meet with you there, if you will attend. Thank you for your consideration.

Sincere regards,

Kathryn Huff