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Prof. James A. Glazier
Director, Biocomplexity Institute
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<http://www.biocomplexity.indiana.edu>

Dear Professor Glazier:

I write to you in support of Dr. Ilya Nemenman, who has applied for your advertised faculty position in biocomplexity. I have been acquainted with Dr. Nemenman for many years, having overlapped with him during his graduate studies in physics at Princeton. Dr. Nemenman's technical training as a physicist is outstanding, of course, but he also combines this with an unusual background in biological applications of information theory and statistical inference, a field which has been revolutionized in the last decade and is making contributions in diverse fields of quantitative biology, including systems biology, biophysics, genomics and computational neuroscience (fields of Dr. Nemenman's expertise).

Dr. Nemenman brings to the communities interested in biocomplexity the patience, deep insight, and diligence to make the calculational and computational connections among these philosophically disjoint approaches. As a byproduct, he continues to build better tools for answering questions of interest to a broad quantitative community including: how can one best estimate probability distributions from data? how can one best estimate Shannon's entropy (and thereby the mutual information) from undersampled data, without making reference to (or by integrating over) the probability distribution itself? His principal tools are field theory and computation, in the spirit of work by physicists such as David MacKay

(student of Hopfield) Curt Callan, Vijay Balasubramanian (student of Callan), and Bill Bialek (Dr. Nemenman's advisor).

Since these problems are being researched by a truly international community, including scientists in Germany, Israel, and within the United States, Dr. Nemenman has great potential impact internationally. He is extremely at home with difficult calculation and computation, at the blackboard and at the keyboard. He works with the zeal of a grad student but the perspective of a professor. While wholly unimpressed by the most technical of barriers, he retains the "big picture" in his research.

He is energetic and multilingual, able to interact with an extremely broad section of scientists. Indiana University, which had the foresight to create the Biocomplexity Institute, would be an excellent place for him. He will have no trouble finding areas of potential collaboration with Professors de Ruyter van Steveninck and Setayeshgar, among others.

Because his field does involve simulation, and because Dr. Nemenman is at home both with computation at the keyboard as well as calculation at the blackboard (he is expert in simulation, UNIX, and general computation), he will also be able to provide research opportunities to students, including undergraduates, who often take naturally to computation.

Because his research is useful in such a diversity of fields, I am also confident he will have no trouble finding funding to support his research. In fact, he has already co-authored one successful proposal, an NSF-sponsored grant for "Developing Learning Theory for Genetic Network Inference."

I close with the most direct praise I can: I wish my department were hiring this year so that I could have him as a colleague.

Most sincerely,

A handwritten signature in black ink, appearing to read 'CWiggins', written in a cursive style.

Chris Wiggins
Assistant Professor