



VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

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Dear Members of the Search Committee:

I am pleased to write in support of **Dr. Dorjsuren Battogtokh**, who has applied for a tenure-track position in the Biocomplexity Institute at Indiana University in Bloomington.

Dr. Battogtokh joined my research group in November 2002. Since I spent the Spring Semester, 2003, on sabbatical in Budapest, Dr. Battogtokh was left on his own to begin mastering the research we do on eukaryotic cell cycle control. Without much help from me, he carried out a nice bifurcation analysis of a model of cell cycle regulation in budding yeast, and he studied chaotic spatial patterns in reaction-diffusion equations with birhythmicity. Both pieces of research were published in 2004. This year he worked in collaboration with Attila Csikasz-Nagy and me using bifurcation theory to characterize a general model of eukaryotic cell cycle control. We are now writing up this work, and it will be an influential paper, I believe. In 2005, Bat's plan is to study the effects of periodically driving the budding yeast cell cycle, with the aim of making specific interesting predictions to be tested in the laboratory of Professor Fred Cross, Rockefeller University.

Before coming to work for me, Dr. Battogtokh worked on a Monte Carlo search method for parameter identification that he developed in collaboration with Professors Arnold and Schutler at the University of Georgia. Before that, Dr. Battogtokh was trained deeply in the field of coupled nonlinear oscillators by two giants in that field, A. Mikhailov and Y. Kuramoto. The significance of this field of study is very nicely explained in Steve Strogatz's popular book *Sync* (Hyperion, 2003).

Dr. Battogtokh is an intelligent, creative and independent mathematical physicist. His background and experience are suitable for pursuing the study of Biocomplexity within a Physics Department. Working for me, he has learned a lot more about modern molecular/cell biology, but he clearly prefers a more physical approach to these problems than my own emphasis on molecular reaction mechanisms and cell physiology.

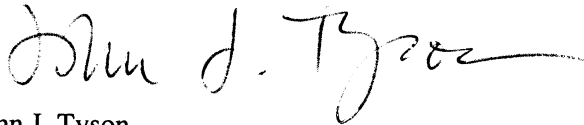
Dr. Battogtokh's spoken English is fine: he has a good vocabulary and a logical mind, but his accent sometimes gets in the way of easy communication. His written English is also quite good, considering that the English language is so far removed from his mother tongue. In fact, of all my grad students and postdocs who are non-native English speakers, he is one of the better writers of scientific prose.

I do not have enough evidence to comment on Dr. Battogtokh's teaching abilities or his ability to win external funding. Those necessary components of a successful academic career he would have to establish during the tenure-track probationary period. He would need some help from his colleagues in the Biocomplexity Institute to get off to a good start in both areas.

Recommendation Letter for D. Battogtokh
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There is a great demand at present for faculty expertise in "biocomplexity," and Dr. Battogtokh is one of only a few theoretical physicists with extensive experience in the field. He is ready for an independent position, and I think he would fit in well with the biocomplexity group already established at Indiana University. I hope you will give his application serious consideration.

Very truly yours,

A handwritten signature in black ink, appearing to read "John J. Tyson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

John J. Tyson
University Distinguished Professor of Biology
Co-chief Editor, *Journal of Theoretical Biology*
Past President, *Society for Mathematical Biology*