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Biocomplexity Faculty Search
c/o C. Howard
Department of Physics
Indiana University
Swain West 117
727 East 3rd Street
Bloomington, IN 47405-7105

Dear Search Committee:

It is a pleasure to recommend Dr. Hyunbum Jang to you for a faculty position in your department. Hyunbum worked as a postdoctoral research associate with me from April 2000 until August 2002. I am a chemical physicist working in a chemical engineering department on a variety of problems involving statistical mechanics and computer simulations. Over the past decade I have migrated more into the biopolymers area and now have an active program aimed at simulating the aggregation of proteins using simplified and intermediate-resolution protein models.

Hyunbum did research with me and my former postdoc, Professor Yaoqi Zhou (now at the University of Buffalo) on a series of models of β -strand proteins interacting via a Go-type potential. By applying the technique of discontinuous molecular dynamics (a very fast version of traditional molecular dynamics appropriate to models with discontinuous potentials) we were able to map out the phase behavior and explore the kinetics of isolated β -strand proteins. We then simulated and analyzed the assembly of four of these proteins into a fibril. As you may know, fibrils (also called amyloid) are ordered aggregates of proteins and are the hallmark of the so-called "amyloid diseases", such as Alzheimer's and Parkinson's. Towards the end of his stay here, Hyunbum used CHARMM to analyze the aggregation of snippets of the β -amyloid peptide, the peptide associated with Alzheimer's disease.

I consider myself very fortunate to have had Hyunbum as a postdoc. When I hired him I thought I was taking a risk because I'd never met him or his advisor and because he had no training in biophysics. This risk turned out to be well worth taking. Hyunbum was eager to move into the bio area and so immersed himself in the protein folding literature even before he got here. He quickly developed a discontinuous molecular dynamic code (even though he'd only done Monte Carlo before) and started producing results at an astounding rate. Although the project was conceived by Yaoqi Zhou and

me, Hyunbum took the ball and ran with it. He figured out what scientific questions to ask and how to go about answering them. He was and still is a wiz at the computer and knows how to make things happen. He required very little supervision, was very careful, did not jump to conclusions easily, and came up with first-rate ideas on his own. He was well organized and unusually systematic in his approach to research. I learned a lot about doing science from him!

On a personal level Hyunbum is easy to interact with. He is on the quiet side but has a nice sense of humor and a pleasing manner. I always looked forward to my meetings with him. Being a native speaker of Korean, his communication skills when he arrived were not strong but he worked very hard to improve. He is now quite fluent in English, both spoken and written, so this is no longer an issue.

I think that Hyunbum has what it takes to succeed as a faculty member. He is a strong scientist who is very smart, driven, hard working and ambitious. He has terrific computer skills and brings unusual creativity to the discipline of computational biology. He has good research ideas and understands what it takes to sell them to people. He has the makings of a fine teacher. He is very good at explaining new material and is patient, kind and straightforward. Finally, I have no doubt that he will be a good departmental citizen. He is reliable, responsible and the type of person that you can count on.

In summary I strongly recommend Hyunbum Jang to you.

Sincerely yours,



Carol K. Hall
Alcoa Professor