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Chung-I Wu, Professor and Chairman

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Biocomplexity Faculty Search Committee c/o Prof. Rob de Ruyter van Steveninck Department of Physics Indiana University Swain Hall West 117 Bloomington, IN 47405-7105

Dear Dr. de Ruyter van Steveninck:

It is a great pleasure for me to recommend Zhenglong Gu for a faculty position in your department. Zhenglong probably represents the newest generation of molecular evolutionists. His Ph.D. work on the correlation between the complexity of a gene network and the rate of molecular evolution is an indication of the excitement and potential of the field. This department has produced many outstanding graduates. They all show a set of traits, one of which is the capacity to grow. There are students who can do well in the right place and at the right time but only those who have the capacity to grow intellectually will flourish in the long run. Zhenglong is one of them.

I believe Zhenglong chose the right place for his postdoctoral training. He could have gone to a place where the thinking and practice are closer to his Ph.D. program. It would feel more like home. However, it is necessary to expand and he was quite aware of that. Since he left Chicago, we have kept contact, often on questions of population genetics. Many of the newest generation of molecular evolutionists can publish high-profile papers with little background in the more traditional theories. Zhenglong is determined to bridge the new and the old. His latest work on the rapid evolution of the laboratory strains of yeast is a very good example. Since I do not know how much I should say about his unpublished work, I will discuss something that is very close to what he has been doing.

Artificial selection under domestication is expected to interfere with natural selection, resulting in the accumulation of deleterious mutations. While fitness

reduction associated with domestication is common knowledge, there has been no systematic documentation of the cost at the molecular level. The whole genome sequences from the indica and japonica subspecies of the domesticated rice, as well as the extensive sequencing on wild rice species, have made it possible for such estimation. There is indeed a large excess of amino acid substitutions during rice domestication. Zhenglong has done essentially the same thing, using a wild and a "domesticated" strain of yeast. I was quite amazed with the parallel and the ease with which one can arrive at the same conclusion with much less effort.

Overall, this is a very enthusiastic young scientist who has great potential. He works quite independently and is constantly thinking about new concepts, some very good, some so so and some a bit strange. Nevertheless, it is those very good ideas that count. I strongly recommend him to be your newest addition. He will continue to grow intellectually, and he is already very competitive.

Sincerely,

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Chung-I Wu