Howard Hughes Medical Institute
Research Laboratories

Stanley Fields, Ph.D.
Investigator

November 17, 2004

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

Re: Dr. Peter Uetz

Dear Search Committee:

I am pleased to write in support of Dr. Peter Uetz's application for a position in Indiana University. Peter is a very bright, imaginative and dedicated biologist with the ability to get an ambitious research plan up and running.

Peter was a postdoctoral fellow in my laboratory for not quite four years, leaving in February of 2001 to take a faculty position back in Germany. He was the individual most responsible for our success in constructing and screening, by the two-hybrid assay and other methodologies, an array of ~6000 yeast transformants. Each transformant in the array expresses one of the predicted open reading frames of *Saccharomyces cerevisiae* fused to the Gal4 activation domain. Generation of this array required a substantial development of new procedures, which are now being applied in other genomic approaches to protein function. Peter was instrumental in working out the fairly complex procedures required to build and manipulate the array, and in debugging the many steps necessary to screen it. This work required not simply technical skills, but insights from biology, engineering, and robotics. Due substantially to Peter's efforts, we carried out genomewide two-hybrid searches for more than 400 proteins (which has now been extended to approximately 1000 proteins), and detected several hundred putative yeast protein interactions.

Additionally, Peter's computer talents are formidable, and were an essential skill needed in our increasingly genomic efforts. He worked out procedures to record and store various forms of data, to place our results in a user-friendly database, and to interface our database with those of others. His skills were particularly invaluable when we combined our effort with that of a biotechnology company, CuraGen Corporation, to interdigitate and jointly submit two large sets of results. Although the article in *Nature* that appeared in 2000 describing this work has quite a number of co-authors, Peter's role in our share of the work was clearly the predominant one. Following this effort, Peter collaborated with another postdoctoral fellow based in computer sciences to analyze the substantial data set of yeast protein interactions then available by developing new visualization tools and new algorithms for predicting function based on the interaction

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data. This work, about which I was initially skeptical of its significance, ended up being featured as a cover article in *Nature Biotechnology* in 2000. Peter also worked with other yeast biologists in the community on two-hybrid projects that ultimately resulted in interesting biological findings and other publications.

By combining his diverse training in developmental biology, molecular biology, genomics and information management, Peter is poised to become a significant figure among those studying organisms at the whole genome and proteome level. Although I have not kept up that much with him since he returned to Germany, I know that he has given a lot of thought to the question of how he can best contribute to this exciting new area. When he was back in Seattle recently for a conference, he discussed with me his ideas that spanned across infectious disease organisms, protein domains, and new peptide technologies. I strongly urge you to give him serious consideration for this position.

Sincerely,

Stanley Fields
Professor,
Departments of Genome Sciences
and Medicine
Investigator,
Howard Hughes Medical Institute