

Dr. Ivan R. Baxter
Bindley Bioscience Center
Purdue University
West Lafayette, IN 47905
ibaxter@purdue.edu
765-543-7288

December 4, 2008

Systems Biology Search Committee
Biology Department
Boston University

Dear Search Committee:

I am writing to apply for the position of Assistant Professor within the Biology Department. The university has a superb reputation in the biology community and I believe that it is an ideal environment to conduct great plant biology research. I have spent most of my scientific life working to utilize emerging technological resources such as full genome sequences and transcriptional and elemental profiling to answer biological questions. My experience in biochemistry, genetics, high-throughput phenotyping, and bioinformatics makes me an excellent candidate for the position described in your notice.

I earned my Ph.D. working with Jeffrey Harper at The Scripps Research Institute. For the last four years, I have been working with Dr. David Salt and the Arabidopsis Ionomics Facility at Purdue University. I have used the large amount of data generated at the facility to identify genes important for elemental accumulation. These efforts have been tremendously successful and have allowed us to identify over one hundred loci, six of which we have identified the gene for, which control the accumulation of elements in *Arabidopsis*. The natural variation present in *Arabidopsis* has been a rich source of phenotypic diversity for our project, which has led to the receipt of an NIH R-01 grant on which I am a co-PI with Dr. Salt and Dr. Mary Lou Guerinot.

The advances in genotyping and high-throughput phenotyping technology have made it possible to combine these techniques to quickly identify causal loci for important plant traits, which can then be leveraged to understand the biochemical processes responsible for these traits. My research will take an elemental analysis-based systems approach to studying plant nutrition in biofuel-relevant species: the important crop maize, the model grass *Brachypodium distachyon*, and the model dicot *Arabidopsis thaliana*. I believe that this research will lead to a better understanding of how plants interact with their soil environment to take up nutrients that will improve biomass production in crops grown with lower inputs.

Thank you for considering my application.

Sincerely,

Ivan Baxter