

Marina Vannucci  
Department of Statistics  
-and-  
Luay Nakhleh  
Department of Computer Science  
Rice University

Dear Marina and Luay:

It is my pleasure to write this letter in support of your NSF RTG proposal “RTG: Cross Training in Statistics and Computer Science at Rice University.” I am excited for the opportunity to be an affiliated member of your proposed program.

My own research is a perfect fit with your proposed plan, as it lies at the intersection of systems-oriented database research and applied probability and statistics. I build large-scale, fully functional, prototype data management systems from the ground up. The systems I construct make use of probabilistic and statistical techniques to greatly expand the applicability of database software by making it run faster (for example, by using statistical inference to quickly “guess” the answer to a query) or by making it more flexible (for example, by providing a generic framework to handle missing, incomplete, or extrapolated data using tools such as Markov-Chain Monte Carlo methods). I also work on applying modern statistical methods to large-scale data analysis problems.

I have a long history of training graduate students at the intersection of computer systems research and applied probability and statistics. I’ve supervised about 10 students who have completed their PhD degrees, and each one utilized applied probability and statistics as a tool to solve problems in computer science. Each one of my current research grants (including a joint grant with Luay studying how to provide systems support for large-scale Bayesian phylogenetics) lies at this intersection.

I commit to mentoring one or two students per year--graduate or undergraduate--who would work on my projects in this area. For example, I am currently mentoring two undergraduate students who are working on my “SimSQL” project. SimSQL is a database system that has been modified to include native support for large scale statistical inference algorithms. There are many more opportunities for students to work on related problems within my research group.

In addition, I’d be thrilled to give a few lectures per year to RTG participants, detailing my most recent experiences applying statistical methods to computational problems. I think that participants would be especially interested in hearing how we’ve used such methods to solve problems in biomedical informatics.

Thanks so much for the opportunity to participate in this program.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Jermaine', written in a cursive style.

Christopher Jermaine  
Associate Professor  
Computer Science  
Rice University