



**Northeastern University**  
College of Computer and Information Science

November 21, 2018

**RE: Letter of recommendation for Rafael Guerrero**

Dear Colleagues:

It is with high enthusiasm that I support Rafael Guerrero's application for the position of Assistant Professor or Principal Investigator at any tenure-granting institution. I have known Rafael professionally for a bit more than one year since he joined the School of Informatics, Computing, and Engineering (SICE) at Indiana University as a data scientist. Over that period of time, Rafael reported to me -- we interacted regularly and I believe I got to know him well. We have maintained an enjoyable working relationship that will result in publications in the near future.

As a matter of introduction, I received my Ph.D. degree in Computer and Information Sciences from Temple University in 2003. I am an author on over 100 peer-reviewed scientific publications, an Editorial Board member for the journal *Bioinformatics*, an Associate Editor for journal *PLoS Computational Biology*, an honorary member of the Institute for Advanced Study and August-Wilhelm Scheer visiting professor at the Technical University of Munich in Germany, and have been elected three times to the Board of Directors of the International Society for Computational Biology (ISCB; <http://www.iscb.org/>). I am currently an active ISCB Board member. Until recently, I was an Associate Chair of the Department of Computer Science at Indiana University Bloomington and a co-director (2016-2018) of the Data Sciences and Informatics of the multi-campus Precision Health Initiative (PHI) of Indiana University. I recently accepted a position at Northeastern University and moved to the College of Computer and Information Science this past September. My curriculum vitae is available on my web site -- listed below my signature -- so that you may review my own qualifications to evaluate Rafael's credentials.

Rafael's position in the PHI was originally envisioned as a data scientist/programmer and we hired him with both of these types of responsibilities in mind. The dynamics of the initiative required much more of his involvement on the data science side with many aspects of a project manager. In this role he led and was involved in all analyses, descriptive and predictive, related to the gestational diabetes study that was a part of PHI. This ambitious project considers 10,038 nulliparous women from the national nuMoM2b study which collected blood specimens and a lot of clinical and psycho-social data with the goal of understanding adverse pregnancy

outcomes (APOs). Our initiative provided funding to genotype all involved nuMoM2b subjects with the goal of finding genetic markers related to gestational diabetes as well as understanding the predictive value of genetic data combined with clinical and other data. It is important to note that gestational diabetes was not originally envisioned as one of the four APOs by the nuMoM2b consortium, but is now part of this national initiative owing in part to Rafael's efforts. Rafael has been the main person on our team involved this project and is currently driving much of it. His responsibilities have included all analyses related to study preparation, chip selection, interactions with vendors, interactions with NIH in order to secure blood specimens, and numerous other duties. Once genotyping is completed (early next year in my estimation), we expect Rafael to be the primary author on one major and likely several accompanying publications. This work is novel and exciting and gives Rafael exposure to human genetics, biomedical informatics, and interaction with highly diverse group of scientists and medical professionals. I believe he is perfectly prepared for such responsibilities and expect that he will successfully lead this project to completion.

Over the past year, Rafael also participated in various activities related to my research group. For example, he led our team in one of the CAGI challenges (<https://genomeinterpretation.org>) related to the phenotype prediction from exome data and additional clinical/demographic data. Amazingly, Rafael had the best performance in this challenge and was invited to give a talk at the CAGI meeting this past July. I expect to soon write a paper related to our methods for the CAGI special issue. His method involved a clever way of combining data related to the functional effects of mutations, the predicted gene risk to be associated with the given phenotype and relevant non-genomic markers. Rafael has also supervised one student in a project related to the evolution of protein function and the roles of different types of homologs in function transfer using sequence similarity. This work will be submitted within weeks.

Overall, Rafael has been a great addition to the PHI and also to my group. I was very pleased with his leadership, depth, quick grasp of human genetics and bioinformatics, as well as interpersonal skills and value system. He is generally a quiet person but over time we had many fun conversations. I have no doubt that he will continue to be successful in his current position and would like to add that he has the intellect, leadership and work ethic for the faculty level position. I urge you to consider him without any reservations.

If you need any additional information, please do not hesitate to contact me.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Predrag Radivojac'. The signature is fluid and cursive, with the first name 'Predrag' and last name 'Radivojac' clearly distinguishable.

Predrag Radivojac  
Professor of Computer Science  
Northeastern University

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