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Dr. Rafael Palacios Coordinator Undergraduate Program on Genomic Sciences National Autonomous University of Mexico

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To Whom It May Concern:

It is my pleasure to give my opinion as to the outstanding quality of the National Autonomous University of Mexico's (UNAM) Undergraduate Program in Genome Sciences. I am an Associate Professor in the School of Biology (SoB) at the Georgia Institute of Technology. In addition to my teaching and research activities, I currently serve as the School of Biology (SoB) coordinator for the Georgia Tech interdepartmental PhD program in Bioinformatics, and I am a member of the executive committee that oversees our Professional Masters Program in Bioinformatics. I am also a member of the Center for Bioinformatics and Computational Genomics, the Center for the Study of Systems Biology and affiliated with the National Center for Biotechnology Information. My lab at Georgia Tech conducts research in the areas of Bioinformatics, Computational Genomics and Systems Biology. A description of my research interests, lab activities and a list of my publications can be found on my lab website at http://esbg.gatech.edu. Based on my own teaching and research experience, as well as my efforts in curriculum development and student recruitment, I consider myself capable of judging the quality of the students and the curriculum of the UNAM Undergraduate Program in Genome Sciences.

I became familiar with Genome Sciences program when I visited the Cuernavaca UNAM campus as part of the Frontiers in Genomics seminar series in the fall of 2005. For this series, I gave a regular one hour public seminar on my research as well as an in-depth two hour lecture to undergraduates on the kinds of approaches and techniques that we use in our work. I think that this is a great and truly innovative way to teach undergraduates about the latest advances in genomic science. Actually, before my visit I was skeptical as to how this approach would work with undergraduates. Here in the USA, it is quite unusual to have undergraduates exposed to science in this way; rather, we typically give lectures and laboratories on the basic or foundational approaches of our field. However, the quality of the students combined with the structure of the program, really makes this approach work. Apparently, the program is extremely selective in the students it admits and it really shows. The students I interacted with were bright, motivated and extremely engaging. They also showed a surprising breadth of knowledge and an ability to incorporate new concepts into their existing framework of understanding. After a few questions from the students in my own lecture, I quickly realized that I would be able to raise the level of instruction that I was giving. In fact, the

students really challenged me on a couple of points, and this impressed me. I would be delighted to have graduate students of that quality in my own laboratory.

Obviously the students are being well prepared by their coursework, and my perusal of the curriculum suggests that it is entirely appropriate for a program on genome sciences. One of the aspects of the curriculum that impresses me is the integration of quantitative disciplines with basic biology courses. This is not only critically important in genomics, as well as for biology in general, but it is also quite forward thinking since biology will continue to become more and more of a quantitative and integrative science. One challenge that I perceive in the curriculum is leaving the research project to the last year of study alone. But I wasn't entirely clear on the extent to which students are exposed to research projects of their own earlier in the program, such as in semesters five and six. Given how advanced the students and the program are, it should serve the interests of both to integrate the students into the research of the Center as early as is feasible. The only other suggestion that I could make in terms of curriculum development would be for the program coordinators to reach out to the organizers of the new undergraduate program in Quantitative and Computational Biology at the Lewis-Sigler Institute of Princeton University http://www.genomics.princeton.edu/topics/certificate.html. This program also employs an innovative approach to undergraduate education that relies on a deep integration between quantitative and biological sciences. Some sort of faculty exchange or less formal interaction between the UNAM program and the Princeton program could be quite beneficial.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

King Jordan