

College of Liberal Arts and Sciences
Department of Mathematics and Statistics
Arizona State University
Box 871804 Tempe, AZ 85287-1804 480/965-2115
Fax: 480/965-8119



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Letter of Support for Daniel Robbins who is applying for Participation in the DIMACS program

Danielle Robbins is an African American student who had an *outstanding* first year as a graduate student. She naturally has done very well in her coursework but in addition, she has passed two Ph.D. qualifiers, one in differential equations and the second in mathematical biology. She is one of our most promising students in mathematical biology (our program has about 40 students).

Her posted short bio—tells part of the story of this outstanding young woman:

“My name is Danielle Robbins, and I was born in Frederick, Maryland. Growing up I was always interested in the STEM fields and spent my senior year of high school interning at the National Cancer Institute. From there I began my studies at University of Maryland Baltimore County where I was a Meyerhoff Scholar, a National Society of Black Engineers executive member, a Upward Bound- Classic tutor, Teaching Assistant and track & field athlete. While in undergrad I participated in several REUs through NASA, CFAO-UC Santa Cruz, and MTBI - Los Alamos. It was at my last research experience, MTBI, which helped me discover that I would like to focus more on mathematical biology in graduate school. In the field of mathematical biology, I have worked on projects focusing on mathematical models of atherosclerosis, and the effects of population mixing on infectious diseases. I began my graduate studies at Arizona State University, January 2006.”

To sum it up, Danielle has done it all.

I am currently her mentor and I will be working out with her on whatever project captures her passion and/or imagination during her visit to South Africa or will find her a supportive mentor at ASU. Who will finally become her Ph.D. advisor? She will *probably* have two! Steve Baer and Sharon Crooke both experts in neurobiology are the most likely candidates at the moment. However, Danielle may still be undecided. For example, she also likes epidemiology. In fact, she carried out some outstanding research on this topic with Sara del Valle (Los Alamos and a former student of Herbert Hethcote). Her work (highly computational) focused in the study of the impact of mixing patterns in the dynamics and evolution of communicable diseases. She has a manuscript on this work.

At ASU, we have a strong group of mathematical biologists (6). We are also extremely likely to hire *two additional strong* individuals who find themselves in the middle of their successful academic and research careers.

Our mathematical biology group is composed of six faculty members and two research professors (Karl Haderl and Priscilla Greenwood) and it is without question one of the strongest mathematical biology groups in the nation/world. The research of the mathematical biology faculty is directly tied in or motivated by the study of disease dynamics and ecology. We have an extraordinary biology program and have epidemiologist of the caliber of Roy Curtiss III (Member of the National Academies and in two Ph.D. committees within my group) and Sander van der Leeuw whose work in archeology and Complex Systems is closely tied in to the study of the factors that impact the dynamics of cities. Sander is leading an effort in the computational social sciences in which students like Danielle may also find fascinating research questions of interest to poverty and disease stricken nations. Our program in the ecology of infectious diseases led by Jim Collins (NSF Assistant Director in the Biological Sciences) also provides plenty of opportunities for our students to carry out significant research. In fact, at the moment, I have a graduate student and a postdoctoral student working on malaria at the moment.

Danielle Robbins will complete her degree in mathematical biology and have as a Ph.D. advisor one of our distinguished researchers in the field of mathematical biology and work in a problem of interest to humankind.

I give Danielle a strong recommendation.

Sincerely



Carlos Castillo-Chavez, Regents University Professor and Joaquin Bustoz Jr.
Professor of Mathematical Biology
Executive Director Institute for Strengthening Understanding of Mathematics and
Science (SUMS) and Mathematical and Theoretical Biology Institute (MTBI)
Department of Mathematics and Statistics, Arizona State University
External Faculty, Santa Fe Institute
Adjunct Professor, Cornell University

Email: chavez@math.asu.edu
<http://math.asu.edu/~chavez/>; <http://math.asu.edu/~mtbi/>
Fax: 480-727-7346 Phone: 480-965-2115