

David A Morales

Doctoral Candidate

Program in Applied Mathematics
The University of Arizona

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Profile

Biomathematician with strong background in probability, statistics, and computer programming. Research focuses on development and application of theory and computational methods to biology, and in particular to genomics.

US citizen by birth. Considered an underrepresented minority for funding purposes.

Education

Doctorate of Philosophy (in progress) Expected: 2009
University of Arizona, Tucson, AZ

Advisors: Joseph Watkins & Michael Hammer

Courses taken: Probability (continuous and discrete), stochastic differential equations, functional analysis, numerical analysis, statistics, linear algebra, and general applied mathematics graduate curriculum. Biomathematics, genomics, population genetics, bioinformatics, stochastic computing, and coalescent theory.

Awards:

- BioME Fellowship 2008-2009
- College of Science Outstanding Mentor/Teaching Assistant 2007-2008
- VIGRE Fellowship 2007
- SACNAS Genome Scholar (only 3 awarded nationwide) 2006-2007
- **Masters degree** 2005
- IGERT in Genomics Fellowship 2005-2006
- Biology, Mathematics, and Physics Initiative IGERT Fellowship 2003-2004

Bachelor of Science 2001
University of Arizona, Tucson, AZ

Double-major: Mathematics & Computer Science

Awards:

- Minority Access to Research Careers (MARC) 2000-2001
- Undergraduate Biology Research Program (UBRP) 1999-2000
- NASA Space Grant 1998-1999

References available upon request

Publications

Autosomal Resequencing Data Reveal Late Stone Age Signals of Population Expansion in Sub-Saharan African Foraging and Farming Populations

Cox MP, **Morales DA**, Woerner AE, Sozanski J, Wall JD, et al. PLoS ONE (2009) 4:7

The mechanisms responsible for 2-dimensional pattern formation in bacterial macrofiber populations grown on solid surfaces: fiber joining and the creation of exclusion zones

Neil H Mendelson, **David A Morales**, John J Thwaites, BMC Microbiology (2002) 2:1

Multiplexed Screening Assay for mRNA Combining Nuclease Protection with Luminescent Array Detection

Ralph R. Martel, Ihab W. Botros, Matthew P. Rounseville, James P. Hinton, Robin R. Staples, **David A. Morales**, John B. Farmer, Bruce E. Seligmann. ASSAY and Drug Development Technologies (2002) 1:1

Work Experience

Science Writer

Tucson Science Examiner, Examiner.com

2009

Reports and commentary on science development in Tucson. <http://tinyurl.com/tucsonscience>

Mathematics & Science Instructor

University of Arizona, Tucson, AZ

2004-2009

Courses taught: Probability and Statistics (theory, applications, and use of statistical software), Evolution and Genetics, College Algebra.

Calculus Scholars Program Director

University of Arizona, Tucson, AZ

2007-2008

Mission: To increase retention rates for underrepresented minorities in STEM fields by strengthening calculus skills.

Graduate Research Assistant

University of Arizona, Tucson, AZ

2007-2009

Constructed a searchable global DNA database (MySQL / PHP / Zend / Google API), creation and implementation of mathematical models for DNA sequence evolution.

Science Fellow

High Throughput Genomics, Tucson, AZ

2002-2003

Created proprietary software for the image analysis of luminescent array data and for the statistical analysis of the data.

Film Producer

VientoFuego Productions, Tucson, AZ

2005-2009

Associate Producer, Science Consultant, and Screenwriter for independent film production.

Computer Support Assistant

University of Arizona, Tucson, AZ

1997-2000

Maintenance and knowledge of software such as various operating systems, office applications, mathematical/statistical software, graphics, and web design.