

Jorge A. Alfaro-Murillo

Department of Mathematics
Purdue University
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EDUCATION

- PHD Candidate in Mathematics, Purdue University since 2011
- BSc Mathematics, Universidad de Costa Rica February 2008
- BSc Economics, Universidad de Costa Rica February 2006
- Hochschulreifeprüfung (German Abitur), Humboldt Schule, Costa Rica December 2001

PUBLICATIONS

- (a) J. A. Alfaro-Murillo, An Agent-Based Model with Drift and Cross-Immunity for Influenza, published in MTBI Tech Reports Archive, July 2010.
- (b) J. A. Alfaro-Murillo, et al., A Deterministic Model for Influenza Infection with Multiple Strains and Antigenic Drift, submitted to Journal of Biological Dynamics.
- (c) Z. Feng, J. A. Alfaro-Murillo, et al., Plant Toxins and Trophic Cascades Alter Fire Regime and Succession on a Boreal Forest Landscape, submitted to Landscape Ecology.
- (d) J. A. Alfaro-Murillo, An Epidemiological Model with Age of Infection Dependent Transmission Rate and Waning Immunity, on draft.

RESEARCH EXPERIENCE

- **Arizona State University** July 2010
Research Assistant for the Mathematical and Theoretical Biology Institute, worked in a computer simulation of an influenza epidemic, under supervision of Professor Castillo-Chavez. Lead to publication [a](#).
- **Purdue University** since August 2010
Research Assistant, worked three semesters for several projects, funded by the NSF, in epidemiology and ecology, under supervision of Professor Zhilan Feng. Lead to publications [b](#), [c](#), and [d](#).

PRESENTATIONS

- Mathematical Modeling in Population Biology and Epidemiology-10th Annual Red Raider Mini-Symposium, Texas Tech University, poster presentation. October 2010
- Mathematics in Emerging Infectious Disease Management, CIC-UNAM, Mexico, 45 min presentation and Session Chair. January 2011
- Computational Science And Engineering Student Conference-SIAM, Purdue University, 15 min presentation. April 2011
- MCSMC Summer 2011 Mini-Workshop I: Heterogeneity and Ecologies, Arizona State University, 2 hour presentation. May 2011
- MCSMC Summer 2011 Mini-Workshop III: Bifurcations and Optimal Control in Epidemiology, Arizona State University, 45 min presentation. June 2011

- 2011 Workshop for Young Researchers in Mathematical Biology - MBI-Ohio State University, poster presentation. August 2011
- The Third International Conference On Math Modeling And Analysis - Trinity University, 45 min presentation. October 2011

TEACHING EXPERIENCE

- **Universidad de Costa Rica** Spring 05-Spring 06
Course Coordinator for Mathematics for Economics I. Own Course Instructor for Mathematics for Economics I, Mathematical Principles for Pure Mathematics, Multivariate Calculus. Teaching Assistant for Mathematics for Economics IV, Linear Algebra.
- **Purdue University** Fall 08-Spring 10
Recitation Instructor for Plane Analytic Geometry And Calculus I, Multivariate Calculus, Linear Algebra And Differential Equations. Teaching Assistant for Ordinary Differential Equations.
- **Arizona State University** June 2010
Teaching Assistant for the MTBI/SUMS Summer Program. Held office hours and graded homeworks in different topics of mathematical biology.

OTHER ACTIVITIES

- Seminar Organiser Spring 11 & Spring 12
Organiser of Dynamical Systems Seminar (Spring 11) and Math Modeling for Epidemiology Seminar (Spring 2012), at the Mathematics Department of Purdue University. Contacted Professors from other Universities to attend the Seminar and organized the student presentations.
- Computer Network Assistant Spring 2006
Department of Mathematics, Universidad de Costa Rica. Co-developed an on-line platform for the courses of the Department.

PROFESSIONAL & SCHOLARLY MEMBERSHIPS

- American Mathematical Society since 2008
- Society for the Advancement of Chicanos and Native Americans in Science since 2010
- Society for Industrial and Applied Mathematics since 2011
- Institute of Mathematical Statistics since 2011
- Society for Mathematical Biology since 2012
- Member of the College of Science Council, Purdue University. since 2011

LANGUAGES

- Spanish, native language.
- English.
- German, Sprachdiplom I & II, German Abitur.

REFERENCES

- Dr. Zhilan Feng zfeng@math.purdue.edu
- Dr. Carlos Castillo-Chavez ccchavez@asu.edu
- Dr. John Glasser jwg3@cdc.gov