

Drew Levin

CONTACT INFORMATION	Department of Computer Science University of New Mexico MSC01 1130 1 University of New Mexico Albuquerque, NM 87131-0001	<i>Voice:</i> (505) 366-9305 <i>Fax:</i> (505) 277-6927 <i>E-mail:</i> drew@cs.unm.edu <i>Web:</i> cs.unm.edu/~drew
CITIZENSHIP	USA	
RESEARCH INTERESTS	Complex systems, randomized intelligent search, agent-based models, distributed autonomous systems, biological modeling, competitive co-evolution	
EDUCATION	University of New Mexico, Albuquerque, NM USA Ph.D. Candidate, Computer Science (expected graduation date: Fall 2015) <ul style="list-style-type: none">• Research Topic: Biological Mechanisms of Autonomous Distributed Search• Advisor: Professor Stephanie Forrest• Area of Study: Complex Systems Harvey Mudd College, Claremont, CA USA B.S., Computer Science, May 2002 <ul style="list-style-type: none">• Focus in artificial intelligence and computer algorithms	
HONORS	Harvey Mudd College <ul style="list-style-type: none">• Dean's List: Spring 1999, Fall 2000, Spring 2000, Fall 2001, Spring 2001	
ACADEMIC EXPERIENCE	University of New Mexico, Albuquerque, NM USA <i>Research Assistant</i> <ul style="list-style-type: none">• Current Project: Spatially explicit model of the lymphocyte diaspora in influenza-infected lung quantifies constraints of chemokine directed migration In Draft <i>Graduate Student</i> <ul style="list-style-type: none">• Passed Comprehensive Examination (Jan 2008)• Graduate GPA: 4.02 Harvey Mudd College, Claremont, CA USA <i>Undergraduate Researcher</i> <ul style="list-style-type: none">• Summer Research Fellow with Professor Jim Marshall• Improved and modified code of Metacat for distribution	August 2006 to present August 2006 to present May 2001 to August 2001

PUBLICATIONS	<p>Levin D, Forrest S, Banerjee S, Clay C, Cannon J, Moses M, Koster F <i>A spatial model of the efficiency of T cell search in the influenza-infected lung</i> In submission</p> <p>Flanagan T, Fricke M, Hecker J, Letendre K, Levin D, Forrest S, Gordon D, Moses M. <i>Using information to improve collective search</i> Accepted: European Conference on Complex Systems (ECCS), 2015</p> <p>Levin D, Hecker J, Moses M, Forrest S <i>Volatility and spatial distribution of resources determine ant foraging strategies</i> Proceedings of the European Conference on Artificial Life (ECAL) 2015, pp. 256-263</p> <p>Banerjee S, Levin D, Moses M, Koster F, Forrest S <i>The Value of Inflammatory Signals in Adaptive Immune Responses</i> International Conference on Artificial Immune Systems (ICARIS), 2011, p. 1-14</p> <p>Mitchell H*, Levin D*, Forrest S, Beauchemin C, Tipper J, Knight J, Donart N. Layton C, Pyles J, Gao P, Harrod K, Perelson A, Koster F <i>Higher replication efficiency of 2009 (H1N1) pandemic influenza than seasonal and avian strains: kinetics from epithelial cell culture and computational modeling</i> Journal of Virology, Jan 2011, p. 1125-1135. * Authors contributed equally to this work.</p>
	<p>POSTERS</p> <p>Drew Levin, et. al. <i>Replication efficiency of influenza: kinetics from cell culture and modeling</i> UNM CS Student Conference, March 1, 2010 University of New Mexico, USA</p>
	<p>PRESENTATIONS</p> <p><i>Volatility and spatial distribution of resources determine ant foraging strategies</i> ECAL 2015, July 22, 2015 University of York, UK</p> <p><i>Ant Foraging as a Distributed Algorithm</i> UNM CS Student Conference, March 28, 2013 University of New Mexico, USA</p> <p><i>The Value of Inflammatory Signals in Adaptive Immune Responses</i> ICARIS, July 18, 2011 Cambridge University, UK</p> <p><i>Quantifying the Value of Inflammation</i> UNM CS Student Conference, April 5, 2011 University of New Mexico, USA</p> <p><i>Designing and fitting an adjusted SIR model to experimental data</i> UNM CS Student Conference, April 2, 2009 University of New Mexico, USA</p>

FELLOWSHIPS	<p><i>PIBBS: Program in Interdisciplinary Biological & Biomedical Sciences</i> Research Fellowship \$22,537 per year for 2 years UNM Department of Biology University of New Mexico, USA</p>	2009-2011
AWARDS	<p><i>European Conference on Artificial Life 2015</i> Student Travel Bursary £150 ECAL 2015 University of York, UK</p> <p><i>Doctoral Conference Presentation Award</i> \$1,000 For travel to ECAL 2015 University of New Mexico, USA</p>	June 2015 June 2015
ENRICHMENT	<p><i>Santa Fe Institute: Complex Systems Summer School</i> Student St. Johns College and the Santa Fe Institute Santa Fe, NM USA</p>	June 2010
COURSES TAUGHT	<p><i>UNM Bio 409 / Bio 509 / Stat 479: Probability for Scientists</i> Hands-on introduction to probability and statistics for non-math majors Co-teachers: Christian Gunning, Ara Kooser Fall 2013</p>	
GUEST LECTURES	<p><i>Complex Numbers and the Unit Circle</i> UNM CS 530: Geometric and Probabilistic Methods in Computer Science Professor Lance Williams, Fall 2007</p> <p><i>Introduction to Modeling</i> UNM CS 365: Introduction to Scientific Modeling Professor Stephanie Forrest, Fall 2012</p> <p><i>Fitting an ODE Model to Data</i> UNM CS 365: Introduction to Scientific Modeling Professor Stephanie Forrest, Fall 2012</p> <p><i>Modeling T cell search in the human lung</i> UNM CE 691: Civil Engineering Graduate Seminar Professor Andrew Schuler, Fall 2013</p>	

PROFESSIONAL
EXPERIENCE

MatlabGeeks.com, Albuquerque, NM USA

Managing Partner: Control One LLC

May 2011 to present

- Manager: Design contracts, interact with potential clients, file taxes
- Consultant: Develop custom software using Matlab and C++ for clients

Contributing Author

May 2011 to present

- Author of a five-part Matlab tutorial regarding the use of ODEs and DDEs in data fitting and analysis

Infotech Systems Management, San Diego, CA USA

Software Engineer

January 2004 to October 2004

- Created web applications to manage health records for local hospitals and insurance companies
- Applications included use of HTML, JavaScript, ASP, COM, Visual Basic, and SQL programming

Avail Medical Products, San Diego, CA USA

Software Developer

December 2002 to December 2003

- Created new software applications to aid the management and accounting staff
- Applications included use of Visual Basic, VBA, FoxPro, and MS Access programming

Marine Biological Laboratory, Woods Hole, MA USA

Harvey Mudd College: Senior Clinic Participant **September 2001 to May 2002**

- Created a parallelized implementation of the Smith-Waterman algorithm for sequencing DNA
- Algorithm was specifically designed and optimized for the Itanium 64 processor
- Code was written in C and assembly

Pipeworks Software, Eugene, Or USA

Programming Intern

June 2000 to August 2000

- Created software tools to aid senior programmers and artists in the development of games for the Microsoft XBox
- Code was written in C++

SERVICE

Tutor: Intro to Computer Programming

Fall 2010 - Spring 2011

- Tutored two eighth graders. We focused on object-oriented programming in Java.

President: CS Graduate Student Association

May 2008 to May 2009

- Initiated and organized activities for the graduate students of the Department of Computer Science, University of New Mexico
- Organized and hosted the 2009 Computer Science UNM Student Conference

TECHNICAL
SKILLS

Programming: C, C++, Java, Scala, Python, SML, Scheme, Prolog, Visual Basic, HTML, JavaScript, VBA, SQL, SVN, GIT, and others

MATLAB experience: linear algebra, neural networks, non-linear differential equations, genetic algorithms, statistics, gradient descent search, visualization

Applications: T_EX, L^AT_EX, B_IB_TE_X, Open Office, Inkscape, Microsoft Office, and other common productivity packages for Windows, OS X, and Linux platforms

Operating Systems: Microsoft Windows, Linux

MATHEMATICAL
EXPERTISE

Function minimization including gradient descent and genetic algorithm methods

System modeling using systems of ODEs and agent based models

Algorithmic optimization, probability and statistics, complex systems, game theory