

Jeffrey West

H. Lee Moffitt Cancer Center & Research Institute
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EDUCATION

University of Southern California, Los Angeles, California, USA

- Ph.D. in Mechanical Engineering 2014 – 2017
 - Adviser: Dr. Paul K. Newton
- M.S. in Mechanical Engineering 2012 – 2014

Ohio Northern University, Ada, Ohio, USA

- B.S. in Mechanical Engineering 2008 – 2012

RESEARCH INTERESTS

Computational modeling of cancer tumor progression using evolutionary game theory dynamics to design optimal chemotherapy scheduling.

PUBLICATIONS

PREPRINTS

- [9] J. West, Y. Ma, P.K. Newton, 2017, “An evolutionary model of competitive release in metastatic castration-resistant prostate cancer,” *submitted, Cancer Research*.
- [8] J. West, P.K. Newton, 2017, “Optimizing chemo-scheduling based on tumor growth rates,” *to appear: Mathematical Oncology Handbook*.
- [7] Y. Ma, J. West, P.K. Newton, 2017, “Competitive release in tumors,” *to appear: Mathematical Oncology Handbook*.

JOURNALS

- [6] J. West, P.K. Newton, 2017, “Chemotherapeutic dose scheduling based on tumor growth rates provides a case for low-dose metronomic high-entropy therapies,” *to appear, Cancer Research*.
- [5] J. West, Z. Hasnain, P.K. Newton, 2016, “The prisoner’s dilemma as a cancer model,” *Convergent Science: Physical Oncology*.
- [4] J. West, Z. Hasnain, P.K. Newton, 2016, “An evolutionary model of tumor cell kinetics and the emergence of molecular heterogeneity driving Gompertzian growth,” *SIAM Review*.
- [3] John-David Yoder, J. West, E. Baumgartner, M. Perrollaz, M. Seelinger, M. Robinson, 2013, “Experiments comparing precision of stereo-vision approaches for control of an industrial manipulator,” *Spring Tracts in Advanced Robotics Vol. 88 pp 245-256*.

TECHNICAL REPORTS

- [2] Jeffrey West, M. Hromatka, M. Holt, S. Biaz., 2012, “A Fuzzy Logic approach to collision avoidance in smart UAVs,” *Technical Report #CSSE12-05, Auburn University*.
- [1] Jeffrey West, P. Ling, P. Grewal, 2010, “Urban Food Production season extension techniques,” *Internship Program (ORIP) Technical Report*.

AWARDS

Body Engineering Los Angeles GK-12 Fellowship 2016

Fellows improve their communication, teaching, teamwork, and public outreach skills through active collaboration with master teachers in local middle schools, advancing the education efforts relating to science, technology, engineering and math (STEM) education.

Tau Beta Pi Graduate Fellowship 2012

Awarded on the basis of “high scholarship, strong faculty recommendations, definite extracurricular contributions, unusual promise of substantial achievement through a definite plan or purpose, and a program through which accomplishment will advance the interest of the engineering profession.”

CONFERENCE TALKS	Biology and Medicine through Mathematics Conference	May 2017
	▪ Virginia Commonwealth University, Richmond, VA	
	Integrated Mathematical Oncology Department Talk	May 2017
	▪ Moffitt Cancer Center, Tampa, FL	
	Center for Applied Molecular Medicine Departmental Seminar	Apr 2017
	▪ University of Southern California, Los Angeles, CA	
	European Society for Mathematical and Theoretical Biology Conference (ECMTB)	Jul 2016
	▪ University of Nottingham, Nottingham, U.K.	
	Southern California Applied Mathematics Symposium (SOCAMS)	Jun 2016
	▪ Claremont Graduate University, Claremont, CA	
PREVIOUS RESEARCH EXPERIENCE	Convergent Science Initiative in Cancer (CSI)	Apr 2016
	▪ Scripps Research Institute, La Jolla, CA	
	The Kuhn Laboratory (Research Circle Seminar)	May 2015
	▪ The Bridge@USC, Los Angeles, CA	
	Auburn University, Auburn, Alabama, USA	Jun 2012 – Aug 2012
	▪ Research Intern, Computer Science Department	
	• Supervisor: Dr. Saad Biaz	
	• UAV Collision avoidance algorithms; ROS; fuzzy logic control;	
	Ohio Northern University:, Ada, Ohio, USA	Apr 2012 – Jun 2012
	▪ Independent Research, Mechanical Engineering Department	
• Supervisor: Dr. John-David Yoder		
• Robotic arm manipulation; computer vision; error analysis;		
University of Southern California, Los Angeles, California, USA	Jun 2011 – Aug 2011	
▪ Research Intern, Computer Science Department		
• Supervisor: Dr. Maja Mataric		
• Human-robot-interaction; ROS; python; state machine controller;		
Ohio State University:, Wooster, Ohio, USA	Jun 2010 – Aug 2010	
▪ Research Intern, Ohio Agricultural Research and Development Center		
• Supervisor: Dr. Peter Ling		
• Local food production; growing season extension; energy storage; community gardens;		
▪ Research Intern, Ohio Agricultural Research and Development Center	Jun 2009 – Aug 2009	
• Supervisor: Dr. Peter Ling		
• Machine vision; error analysis; crop yield prediction;		
• Best Undergraduate Intern Summer Research Award		
TEACHING EXPERIENCE	Courses	
	▪ USA 101: The United States: An American Cultures Series	Fall 2012, 2013, 2014
	Lectures	
	▪ AME 526, Engineering Analytical Methods	February 9, 2015
	▪ AME 341b, Compressible Flow Dynamics	April 7, 2014
	▪ AME 341b, Compressible Flow Dynamics	April 1, 2013
	Teaching Assistantships	
	▪ AME 525: Engineering Analytical Methods I	Fall 2015
	▪ AME 526: Engineering Analytical Methods II	Spring 2015
	▪ AME 341b: Mechoptronics, Laboratory Part B	Spring 2013, 2014
▪ AME 341a: Mechoptronics, Laboratory Part A	Fall 2012, 2014	
Engineering Mentoring		
▪ Viterbi Graduate Mentorship Program	Spring 2016	
▪ Viterbi Undergraduate Merit Researcher Program, 3 mentees	2013 – 2015	

**SKILLS,
PROJECTS**

High Performance Computing: C/C++

- Developed hybrid MPI + OpenMP Fork & Join process to scale stochastic coevolutionary dynamics model of primary tumor growth to large cell numbers (see <http://jeffreywest.com/cv/highPerformanceComputing.pdf>)

iOS Application: Objective C

- Developed iOS application based on a two-player extension of Conway's Game of Life. (see <https://itunes.apple.com/us/app/celluwar-the-game-of-life/id1144234863?mt=8>)

Web Development: Javascript, d3.js

- Developed web application to track time distribution of a typical day in life, in a visually pleasing and interactive d3.js framework. (see <https://jeffreywest.github.io/creative-clock/>)

Mobile Bot Development: Javascript, Node JS

- Developed Facebook messenger bot to serve a random article from my blog's RSS feed to all who message the blog's public Facebook page. (see the process I used outlined here: <https://gapp.usc.edu/viterbipulseblog/westjb/how-i-built-facebook-messenger-bot-30-minutes-part-1>)