Yan Hao

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Education:

Ph.D in Applied Mathematics, The College of William & Mary	Jan. 2012
M.S in Applied Sciences, The College of William & Mary	Jan. 2009
B.S in Applied Mathematics, Tsinghua University	Jun. 2006

Academic Positions:

Assistant Professor, Hobart and William Smith Colleges	Jul. 2012 - present
Adjunct Professor, Arizona State University	Oct. 2015 - present
Research Fellow, Weil Medical school of Cornell University	Aug. 2015 - present
Post-doctoral fellow, Arizona State University	Sep. 2011 – Jun.2012
Instructor on record, The College of William & Mary	Aug. 2010 – Jan. 2011
Research assistant at the computational cell biology laboratory	Aug. 2006 – May. 2011

Research and Scholar Activities:

Publication:

Hao Y. **Reduction of calcium release site models via optimized state aggregation.** *EPJ Nonlinear Biomedical Physics, 4(1), 1-21 (2016)*

Wang X., Hao Y., Weinberg S.H., Smith G.D. **Ca^{2+}-activation kinetics modulate successive puff/spark amplitude, duration and inter-event-interval correlations in a Langevin model of stochastic Ca^{2+} release.** *Mathematical biosciences 264, 101-107 (2015)*

Hao Y., Armbruster H.D., Hütt M. **Node survival in networks under correlated attacks.** *PLoS ONE 10(5): e0125467 (2015)*

Hao Y., Armbruster H.D., Cronk L., Aktipis A. **Need-based transfers on a network: A model of risk-pooling in ecologically volatile environments.** *Evolution and Human Behavior 36(4), 265-273 (2015)*

Wang X., Weinberg S.H., Hao Y., Sobie E.A., Smith G.D. **Calcium homeostasis in a local/ global whole cell model of permeabilized ventricular myocytes with a Langevin description of stochastic calcium release.** *American Journal of Physiology: Heart and Circulatory Physiology 308(5), H510-H523 (2015)*

Wang X, Hao Y, Weinberg S.H., Sobie E.A., Smith G.D. **Analysis of Spark Versus Non-Spark Mediated SR Calcium Leak using a Langevin Description of Stochastic Calcium Release.** *Biophysical Journal 104(2), 438a (2013)*

Aktipis A., Cronk L., Hao Y., Armbruster H.D., and de Aguiar R **Generosity without reciprocity part 1: Computation models of need-based transfers and risk-pooling.** *Human Behavior and Evolution Society conference (2012)*

Hao Y. **Automated reductions of stochastic calcium release site models.** *PhD dissertation (2011)*

<u>Hao Y.</u>, Kemper P. and Smith G.D. **Reduction of calcium release site models via fast/slow analysis and iterative aggregation/disaggregation.** *Chaos 19, 037107 (2009)*

<u>Work in progress:</u>

<u>Hao Y.</u>, Hütt M., Armbruster H.D. **Synchronization of coupled oscillator networks under correlated attacks**

<u>Hao Y.</u>, Mikhailov A., Armbruster H.D. **Word Mill Machine Network**

Green M., Wilson C., <u>Hao Y.</u>, **How Popular do You Want to Be?—A Mathematical Model of College Friendships**

<u>Presentations:</u>

Quantitative Laws: From interaction structures to collective behavior *Computational models of need-based transfers*   Como, Italy, 6/2016

Math & CS Seminar Series *How Popular do You Want to Be?—A Mathematical Model of College Friendships* (invited)   Mansfield, PA, 4/2016

The Physics Behind Systems Biology A Langevin description of calcium release sites composed of multiple intracellular channels (poster)   Bremen, Germany, 7/2015

Algebraic and Combinatorial Approaches in Systems Biology Automated reduction of combinatoric calcium release site models   Farmington, CT, 5/2015

MAA MathFest *How Popular do You Want to Be?—A Mathematical Model of College Friendships*   Portland, OR, 8/2014

MAA MathFest *Generosity Without Reciprocity: Computation Models of Need-Based Transfers and Risk-Pooling*   Hartford, CT, 8/2013

Mathematics Seminar Series *Generosity without reciprocity: Computational models of need-based transfers and risk-pooling* (invited)   Williamsburg, VA, 4/2012

17th IUPAB International Biophysics Congress *Langevin description of the stochastic dynamics of calcium release sites* (poster)   Beijing, China, 10/2011

AMS Fall Southeast Sectional Meeting *A Langevin description of the stochastic dynamics of calcium release sites composed of multiple intracellular channels* (invited)
                                                                                 Richmond, VA, 11/2010

Biophysical Society Annual Meeting *Reduction of Calcium Release Site Models via Genetic Algorithm* (poster)   San Francisco, CA, 2/2010

Mathematical modeling in medical science *Fast-slow Reduction of Calcium Release Site Models* (invited)   Nashville, TN, 5/2009

<u>Student research advising:</u>

<u>Student advised:</u>

Gail Foster '18	2016
Richie Ramrati '18	2016
Alyssa Newman '16	2014

Chris Wilson'16	2014
Michael Green '14	2013
Gen Li'15	2013

Student presentation:

Michael Green '14: ***How Popular Do You Want To Be? A Mathematical Model of College Friendship***

    speaker, 2013 MAA Seaway Section Meeting

    speaker, 2013 Math & CS colloquium

    poster, 2013 Homecoming & Family Weekend

Alyssa Newman '16: "**All Work, no play**" **is it worth it? a Mathematical model of college relationships and time allocation**

    speaker, 2014 NY Six Summer Research Conference

    speaker, 2013 Math & CS colloquium

    poster, 2013 Homecoming & Family Weekend

Chris Wilson '16: **Is being popular really that sweet?**

    poster, 2014 NY Six Summer Research Conference

    speaker, 2013 Math & CS colloquium

    poster, 2013 Homecoming & Family Weekend

Teaching:

Calculus I	2010F (at William&Mary), 2012F, 2013F, 2014S, 2016S
Calculus II	2013S, 2014F, 2015S
Differential Equations	2012F, 2013F, 2014F
Probability (Independent Study)	2015S
Statistics	2013S, 2015S
Mathematical Models	2014S, 2016S
Stochastic Processes	2013F
Honors Thesis (Michael Green)	2013F, 2014S

Service:

Colloquia coordinator of the Math & Computer Science Dept.	Fall 2013 - present
Search Committee for permanent position at Math & Computer science Dept	Fall 2014, 2015
Search Committee for visiting position at Math & Computer science Dept.	Spring 2014
Faculty Examiner for Honors Thesis in Economics (Powell, H'14)	Spring 2014
Panelist "culture, climate, and contribution", career satisfaction of female faculty	Fall 2013
Panelist Female graduate students in science	Fall 2013
Panelist Job hunting for international students	Fall 2012
President of the Chinese Student & Scholar Association	2009 - 2010

Awards and Honors:

NSF Conference Travel Award	2015
Travel award for graduate student	The College of William and Mary 2009, 2010
Scholarship for Excellence in Academic Courses	Tsinghua University 2006

Computer Skills:

Mac OSX, Linux/Unix and Windows systems, high performances computing
Scientific Packages: MATLAB, SAS, Maple, Mathematica, R
Coding Languages: C/C++, Python

Letter of Reference:

Letters of reference can be obtained from the following individuals:

Gregory D. Smith
Professor of Applied Science Dept., The College of William & Mary
McGlothlin-Street Hall 305
The College of William & Mary
Williamsburg, VA 23187-8795
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H. Dieter Armbruster
Professor of Mathematics, Arizona State University
School of Mathematical and Statistical Sciences
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Tempe, AZ 85287-1804
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Peter Kemper
Professor of Computer Science Dept., The College of William & Mary
Computer Science Dept.
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Lawrence M. Leemis
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