

# Leah Renee Johnson

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CONTACT INFORMATION	Department of Statistics Hutcheson Hall, Virginia Tech 250 Drillfield Drive Blacksburg, VA 24061	lrjohn@vt.edu leah.johnson-gramacy.com/QED
EDUCATION	Ph.D. (Applied Mathematics and Statistics; Physics) University of California Santa Cruz	June 2006
	M.S. (Physics) University of California Santa Cruz	September 2003
	B.S. with Honors (Physics) The College of William and Mary, Williamsburg, VA	June 2001
ACADEMIC APPOINTMENTS	<b>Assistant Professor</b> Statistics Virginia Tech	Aug. 2016 to Present Blacksburg, VA
	<b>Assistant Professor</b> Integrative Biology University of South Florida	Aug. 2013 to July 2016 Tampa, FL
	<b>Research Professional</b> Ecology and Evolution University of Chicago	2012 to 2013 Chicago, IL
	<b>Temporary Lecturer</b> Environmental Sciences Loyola University Chicago	Fall 2011 Chicago, IL
	<b>Post-Doctoral Researcher</b> Ecology and Evolution University of Chicago	2011 to 2012 Chicago, IL
	<b>Post-Doctoral Researcher</b> Ecology, Evolution, and Marine Biology, University of California Santa Barbara	2009 to 2011 Santa Barbara, CA
	<b>Post-Doctoral Researcher</b> National Centre for Statistical Ecology, Statistical Lab, University of Cambridge	2006 to 2009 Cambridge, UK
ACTIVE GRANTS	<b>As Principal Investigator:</b>  <i>CAREER: Quantifying heterogeneity and uncertainty in the transmission of vector borne diseases with a Bayesian trait-based framework. NSF DMS/DEB. Recommended for Funding, Award Amount: \$700000. PI: Johnson. Project Period: 06/01/18-05/31/23</i>	

*US-UK Collab: RCN: Vector Behavior in Transmission Ecology (VectorBiTE)*. NIH-NSF-USDA Ecology of Infectious Diseases. Grant #1R01AI122284-01. **Award Amount: \$493,899**  
PI: Johnson, L.R. Project Period: 07/2015–06/2020

*Quantifying how Bioenergetics and Foraging Determine Population Dynamics in Threatened Antarctic Albatrosses*. Award number 1341649, NSF Division of Polar Programs, Antarctic Organisms and Ecosystems. **Award Amount: \$552,327**. PI: Johnson, L.R., Co-PI: Ryan, S.J. 05/2014 – 04/2017 (no cost extension to 05/2018)

**As Co-Principal Investigator:**

*Effects of temperature on vector-borne disease transmission: integrating theory with empirical data*. NSF-NIH-USDA Ecology of Infectious Diseases. Award Number 1518681; PI: Mordecai, E. (Stanford). **Award Amount: \$425,343** (total award: \$1,706,292). Project Period: 07/2015–06/2020

REFEREED  
PUBLICATIONS

D.J. Civitello, H. Fatima, **L.R. Johnson**, R.M. Nisbet, and J.R. Rohr. “Bioenergetic theory predicts infection dynamics of human schistosomes in intermediate host snails across ecological gradients”. **In Press**. Ecology Letters

**L.R. Johnson**, R.B. Gramacy, J. Cohen, E. Mordecai, C. Murdock, J. Rohr, S.J. Ryan, A.M. Stewart-Ibarra, and D. Weikel. “Phenomenological forecasting of disease incidence using heteroskedastic Gaussian processes: a dengue case study.” **In Press**, Annals of Applied Statistics (arXiv preprint – arXiv:1702.00261).

P.H. Boersch-Supan, S.J. Ryan, R.A. Phillips, **L.R. Johnson**, Surface temperatures of albatross eggs and nests. *Emu - Austral Ornithology*, 2017, p 1–6, doi:10.1080/01584197.2017.1406311.

**L.R. Johnson**, P.H. Boersch-Supan, R.A. Phillips, S.J. Ryan *Changing measurements or changing movements? Sampling scale and movement model identifiability across multiple generations of biologging technology*. *Ecology and Evolution*, 2017, 7 (22), 9257 – 9266. doi:10.1002/ece3.3461

E. Mordecai, J. Cohen, M. Evans, P. Gudapati, **L.R. Johnson**, K. Miazgowicz, C.C. Murdock, J.R. Rohr, S.J. Ryan, V. Savage, M. Shocket, A. Stewart Ibarra, M.B. Thomas, D.P. Weikel. *Detecting the impact of temperature on transmission of Zika, dengue, and chikungunya using mechanistic models*. *PLoS Negl Trop Dis*. 2017 Apr 27;11(4):e0005568. doi: 10.1371/journal.pntd.0005568.

J. Voyles, **L.R. Johnson**, R. Kelly, C. Barron, D. Miller, J. Minster, J. Rohr, E.B. Rosenblum *Diversity in growth patterns among isolates of the lethal fungal pathogen Batrachochytrium dendrobatidis across extended thermal optima*. *Oecologia*, 2017, 184 (2), 363-373. doi:10.1007/s00442-017-3866-8

R.A. Taylor, E. Mordecai, C.A. Gilligan, J.R. Rohr, **L.R. Johnson**. *Mathematical models are a powerful method to understand and control the spread of Huanglongbing*. *PeerJ* 4 (2016): e2642.

P.H. Boersch-Supan, **L.R. Johnson**, and S.J. Ryan *deBInfer: Bayesian inference for dynamical models of biological systems in R*. *Methods in Ecology and Evolution*, 2016, 8 (4), 511-518. doi:10.1111/2041-210X.12679 (preprint: arXiv:1605.00021.)

R.A. Taylor, S.J. Ryan, J.S. Brashares and **L.R. Johnson**. *Hunting, Food Subsidies and Mesopredator Release: Understanding the Dynamics of Crop-Raiding Baboons in a Managed Landscape*, Ecology, 2016, 97 (4), 951-960. DOI: 10.1890/15-0885.1

S.J. Ryan, A. McNally, **L.R. Johnson**, E. Mordecai, K. Paaijmans, K. Lafferty. *Mapping Physiological Suitability Limits for Malaria in Africa Under Climate Change*. Vector-Borne and Zoonotic Diseases. December 2015, 15(12): 718-725. DOI:10.1089/vbz.2015.1822.

S.J. Ryan, T. Ben-Horin, **L.R. Johnson** *Malaria control and senescence: the importance of accounting for the pace and shape of ageing in wild mosquitoes*, Ecosphere, 2015, 6:art170–art170. DOI:10.1890/ES15-00094.1.

**L.R. Johnson**, T. Ben-Horin, K. Lafferty, A. McNally, E. Mordecai, K. Paaijmans, S. Pawar, S.J. Ryan. *Understanding uncertainty in temperature effects on vector-borne disease: A Bayesian approach*. Ecology, 2015, 96:203-213, DOI:10.1890/13-1964.1. arXiv:1310.5110

J. Voyles, **L.R. Johnson**, C.J. Briggs, S.D. Cashins, R.A. Alford, L. Berger, L.F. Skerratt, R. Speare, E.B. Rosenblum. *Experimental evolution alters the rate and temporal pattern of population growth in Batrachochytrium dendrobatidis, a lethal fungal pathogen of amphibians*. Ecology and Evolution 2014; 4(18): 3633-3641.

**L.R. Johnson**, L. Pecquerie, and R.M. Nisbet. *Bayesian inference for bioenergetic models*. Ecology, 2013, 94(4):882-894. DOI: 10.1890/12-0650.1

E. Mordecai, K. Paaijmans, **L.R. Johnson**, S. Pawar, C. Balzer, T. Ben-Horin, E. de Moor, A. McNally, S. Ryan, T. Smith, K. Lafferty. *Optimal temperature for malaria transmission is dramatically lower than previously predicted*. Ecology Letters, 2013, 16(1):2230. DOI: 10.1111/ele.12015.

J. Voyles, **L.R. Johnson**, C.J. Briggs, S.D. Cashins, R.A. Alford, L. Berger, L.F. Skerratt, R. Speare, E.B. Rosenblum. *Temperature alters reproductive life history patterns in Batrachochytrium dendrobatidis, a lethal pathogen associated with the global loss of amphibians*. Ecology and Evolution, 2012, 9:2241-2249.

L. Pecquerie, **L.R. Johnson**, S.A.L.M. Kooijman and R.M. Nisbet. *Analyzing variations in life-history traits of five Pacific salmon species in the context of Dynamic Energy Budget (DEB) theory*. Journal of Sea Research, 2011, 60:424-433.

**L.R. Johnson** and C.J. Briggs. *Parameter Inference for an Individual Based Model of Chytridiomycosis in Frogs*. Journal of Theoretical Biology, 2011, 277(1):90-98.

R.M. Nisbet, E. McCauley, and **L.R. Johnson**. *Dynamic Energy Budget Theory and Population Ecology: Lessons from Daphnia*. Phil. Trans. R. Soc. B, 2010, 365:3541-3552.

D. Merl, **L.R. Johnson**, R.B. Gramacy and M. Mangel. *amei: An R package for the Adaptive Management of Epidemiological Interventions*. Journal of Statistical Software, 2010, 36(6):1-32. url: <http://www.statsoft.org/v36/i06>

**L.R. Johnson**. *Implications of Dispersal and Life History Strategies for the Persistence of Linyphiid spider Populations*. Ecological Modelling, 2010, 221:1138-1147.

D. Merl, **L.R. Johnson**, R.B. Gramacy and M. Mangel. *A statistical framework for the adaptive management of epidemiological interventions*. PLoS ONE, 2009 4(6): e5807.

**L.R. Johnson**. *Microcolony and Biofilm Formation as a Survival Strategy for Bacteria*. Journal of Theoretical Biology, 2008, 251:24-34.

**L.R. Johnson** and M.S. Mangel. *Life histories and the evolution of aging in bacteria and other single-celled organisms*. Mechanisms of Aging and Development, 2006, 127(10):786-793.

R. Schulte, V. Bashkirov, K. Shanazi, T. Li, Z. Liang, K. Mueller, J. Heimann, **L. R. Johnson**, B. Keeney, H. F.-W. Sadrozinski, A. Seiden, D. C. Williams, L. Zhang, Z. Li, S. Peggs, T. Satogata, and C. Woody. *Conceptual design of a proton computed tomography system for applications in proton radiation therapy*. IEEE Trans. on Nuclear Sci., 2004, 51(3):866- 872.

H.F.-W. Sadrozinski, V. Bashkirov, B. Keeney, **L.R. Johnson**, S. G. Peggs, G. Ross, T. Satogata, R. W. M. Schulte, A. Seiden, K. Shanazi, and D. C. Williams. *Toward proton computed tomography*. IEEE Trans. on Nuclear Science, 2004, 51(1):3-9.

**L. Johnson**, B. Keeney, G. Ross, H. F.-W. Sadrozinski, A. Seiden, D.C. Williams, L. Zhang, V. Bashkirov, R. W. Schulte, K. Shanazi. *Initial studies on proton computed tomography using a silicon strip detector telescope*. Nucl. Inst. Meth. A, 2003, 514:215-223.

H. F. -W. Sadrozinski, V. Bashkirov, M. Bruzzi, **L.R. Johnson**, B. Keeney, G. Ross, R. W. Schulte, A. Seiden, K. Shanazi, D. C. Williams, and L. I. Zhang. *Issues in Proton Computed Tomography*. Nucl. Inst. Meth. A, 2003, 511:275-281.

BOOK CHAPTERS

**L.R. Johnson**, A. McNally, T. Ben-Horin, E. Mordecai, K. Paaijmans, S. Pawar, S.J. Ryan, K. Lafferty. *Modeling the Spatio-temporal Dynamics of Malaria* in “Analyzing and Modeling Spatial and Temporal Dynamics of Infectious Diseases”, D. Chen, B. Moulin, J. Wu (Eds), 2014, John Wiley & Sons.

IN REVIEW/  
SUBMITTED

S.R Adapa, R. Taylor, C. Wang, R. Thomson-Luque, **L.R. Johnson**, and R. Jiang. “Transmission Expression Signature in Nascent *Plasmodium vivax* Blood Stage Infection”. **In Revision**.

S.C. Burgan, S.S. Gervasi, D.J. Civitello, **L.R. Johnson**, and L.B. Martin. “Tolerance and Competence: How Technique affects Inference across Ecological Scales”. **In Review**

S.J. Ryan, C.J. Carlson, E.A. Mordecai, L.R. Johnson. Climate change drives uncertain global shifts in potential distribution and seasonal risk of Aedes-transmitted viruses. **In Review**

OTHER PAPERS

*Correction to: Aerial activity of Linyphiid spiders: modeling dispersal distances from meteorology and behavior*: Journal of Applied Ecology, 2007, Vol 44, pg 1263.

R. Schulte, V. Bashkirov, T. Li, J.Z. Liang, K. Mueller, J. Heimann, **L. R. Johnson**, B. Keeney, H. Sadrozinski, A. Seiden, D.C. Williams, L. Zhang, Z. Li, S. Peggs, T. Satogata, C. Woody. *Design of a proton computed tomography system for applications in proton radiation therapy*. IEEE Nuclear Science Symposium Conference Record, 2003 Vol 3, pg 1579 - 1583

T. Li, Z. Liang, K. Mueller, J. Heimann, **L. Johnson**, H. Sadrozinski, A. Seiden, D. Williams, L. Zhang, S. Peggs, T. Satogata, V. Bashkirov, and R. Schulte. *Reconstruction for proton computed tomography: a Monte Carlo study*. IEEE Nuclear Science Symposium Conference Record, 2003, Vol 4, pg 2767–2770

K. Mueller, Z. Liang, T. Li, F. Xu, J. Heimann, **L. Johnson**, H. Sadrozinski, A. Seiden, D. Williams, L. Zhang, S. Peggs, T. Satogata, V. Bashkirov, R. Schulte. *Reconstruction for proton computed tomography: A practical approach*. IEEE Nuclear Science Symposium Conference Record, 2003, Volume 5, Article number M14-342, Pages 3223-3225

J. Heimann, **L. Johnson**, T. Satogata, D.C. Williams. *The requirements and limitations of computer simulations applied to proton computed tomography*. IEEE Nuclear Science Symposium Conference Record, 2003 Volume 5, Article number HT1-5, Pages 3663-3666

**L. R. Johnson**, B. Keeney, G. Ross, H. F.-W. Sadrozinski, A. Seiden, D. C. Williams, L. Zhang, V. Bashkirov, R. W. Schulte, K. Shanazi. *Monte Carlo Studies on Proton Computed Tomography using a Silicon Strip Detector Telescope*: IEEE Nuclear Science Symposium Conference Record, 2002, Vol 2, pg 916–920

THESES

Dissertation, Department of Physics, University of California Santa Cruz. *Mathematical Modeling of Cholera: from Bacterial Life Histories to Human Epidemics*. (2006)  
UCSC Science Library call number: 978-0-542-70547-2

Senior Honors Thesis, Department of Physics, College of William and Mary. *How Parallel are Parallel Universes?:* William and Mary Library. LD6051.W5m Physics, 2001, J63.

AWARDS, AND FELLOWSHIPS

- Early Career Fellow, Mathematical Biosciences Institute, The Ohio State University (Fall 2013)
- Finalist, Kings College Junior Research Fellowship, University of Cambridge (2008)
- College Research Associate, Jesus College, University of Cambridge (2006-09)
- President’s Dissertation Year Fellow, UCSC (2005-06)
- GAANN Fellow (Graduate Assistance in Areas of National Need), UCSC (2002-05)
- International Society for Bayesian Analysis (ISBA) Travel Grant (2004) from NSF for World Meeting in Viña del Mar, Chile
- Institute of Electrical and Electronics Engineers (IEEE) Travel Grant (2002), for outstanding student researcher/presenter for the NSS/MIC Conference in Norfolk, VA
- Regents Fellowship, UCSC (2001)

PREVIOUS GRANTS/AWARDS

*Proposal Enhancement Grant for: Strategic, data-driven modeling for the design and assessment of HLB control strategies*. University of South Florida internal award. **Award Amount: \$25,000.**

SOFTWARE AND DATA

vbdcast: Vector-borne disease forecasting. L.R. Johnson and R.B. Gramacy (2017). GitHub Respository. <https://github.com/lrjohnson0/vbdcast>

Data from: Changing measurements or changing movements? Sampling scale and movement model identifiability across generations of biologging technology. **L.R. Johnson**, P.H. Boersch-Supan, R.A. Phillips, S.J. Ryan (2017). Dryad Digital Repository.

<https://doi.org/10.5061/dryad.t1r3v>

deBInfer: Bayesian inference for dynamical models of biological systems in R. P.H. Boersch-Supan, **L.R. Johnson**, and S.J. Ryan.

<https://cran.r-project.org/web/packages/deBInfer/index.html>

amei: An R package for the Adaptive Management of Epidemiological Interventions: D. Merl, **L. R. Johnson**, R. B. Gramacy, M. S. Mangel.

<http://www.cran.r-project.org/web/packages/amei/index.html>

#### PRESENTATIONS

*Strategic vs Tactical Modeling Approaches to Predicting Mosquito-borne Disease in the Americas:*

- Invited Colloquium, Department of Statistics, Colorado State University. Nov. 2017.
- Invited Seminar, Public Health Grand Rounds seminar series, Virginia Tech, April 2017

*A trait-based framework for understanding and predicting the transmission of vector-borne infections: Perspectives from the VectorBiTE RCN.* Invited Talk, MUVE Section Symposium: Innovations in Disease Management: Integrating Entomology and Community Engagement, Meeting of the Entomological Society of America, Denver, CO, Nov. 2017

*Merging Data and Mechanistic Models* with Sathya Gopalakrishnan, Invited Talk, SESYNC Workshop on Cross-Disciplinary Socio-Environmental Statistics in the Anthropocene, Annapolis, MD, Sept. 2017

*Combining tactical and strategic approaches to predict vector-borne disease*, Invited talk in the mini symposium “Confronting Biological Models with Data: Dealing with Complexity and Sparsity” at the Society of Mathematical Biology Annual Meeting, Salt Lake City, UT, July 2017.

deBInfer: *Bayesian inference for dynamical models of biological systems in R:*

- Contributed Talk. International Statistical Ecology Conference (ISEC), Seattle, WA. June 2016
- Contributed Talk. DEB Symposium, Tromsø, Norway, May 2017

*Data needs for middle-term epidemic predictions: splitting the difference between tactical and strategic models.* Invited talk, DIMACS (Center for Discrete Mathematics and Theoretical Computer Science) Workshop on Zika, University of Berkeley. December 5, 2016.

*Mechanistic Models for Vector-Borne Disease: What are they good for?.* Invited talk, Vector-BiTE 2016, March 23-25, 2016.

*Statistical Inference for Mechanistic Models: Case Studies in Ecology:*

- Invited Seminar, Department of Computational Mathematics, Science and Engineering, Michigan State, January 12, 2015
- Invited Seminar, Department of Statistics, Virginia Tech, December 7, 2015
- Invited Seminar, Department of Integrated Mathematical Oncology, Moffitt Cancer Center, December 17, 2015

*How hot is malaria? - open challenges in evaluating the impact of climate on the transmission of vector-borne disease.*

- Mathematical Biology Seminar, Virginia Tech, Blacksburg, VA. September 2016
- Contributed Talk, Epidemics 5 - Fifth International Conference on Infectious Disease Dynamics, St. Petersburg, FL. December 2015.
- Invited seminar, SAMSI Ecology Transition workshop, May 2015

*A Pragmatic Approach to Forecasting Dengue Incidence:* Invited Presentation, Pandemic Prediction and Forecasting Science and Technology (PPFST) Working Group and The White House Office of Science and Technology Policy (OSTP). Washington D.C. September 21, 2015.

*Modelling the bioenergetics and foraging behaviours of albatrosses:* Ecosystems Seminar, British Antarctic Survey. June 2015

*From Individuals to Populations: Inference for Individual Based Models in Ecology:* Invited Talk, Southern Regional Conference on Statistics, Carolina Beach, NC. June 2015

*Inference for Mechanistic Models: Case Studies in Ecology:*

- Seminar, Integrative Biology, University of South Florida, February 2013
- Seminar, Mathematics and Statistics, University of North Carolina Greensboro, March 2013.
- Mathematical Biosciences Institute, Visitor Seminar Series, Ohio State, October 2013.
- Seminar, School of Life Sciences, Arizona State University, October 2014

*Bayesian Inference for Dynamic Energy Budget Models:* Contributed talk, INTECOL 2013, London, UK, August 2013

*Inference for Mechanistic Models in Ecology: From Individuals to Populations:* Mathematical Biology Seminar Series, Duke University, April 2012

*Parameter Inference for an Individual Based Model of Chytridiomycosis in Frogs:*

- Contributed Talk, Amphibian Pathogens Annual Meeting, Tempe, Arizona, Nov 2010
- Contributed Talk, International Statistical Ecology Conference, Canterbury, July 2010
- Statistics Seminar Series, UCSB, May 2010 (jointly with Cherie Briggs)

*Optimal Foraging Strategies in Albatrosses:* Contributed talk, Annual Meeting of the Society for Mathematical Biology, July 2009

*A statistical framework for the adaptive management of epidemiological interventions: Worms and Bugs Seminar Series, DAMTP, University of Cambridge, January 2009*

*Dispersal Strategies and Population Persistence of Linyphiid spiders: Contributed Talk, International Statistical Ecology Conference (ISEC), St. Andrews, July 2008*

*Modeling Microcolony Formation in **Vibrio Cholerae**:*

- Ecology Seminar, Zoology Dept, University of Cambridge, December 2007
- Mechanics and Mathematical Biology Seminar, DAMTP, University of Cambridge, February 2008

*Implications of Aging in Bacteria:*

- Worms and Bugs Seminar Series, DAMTP, University of Cambridge, January 2008
- Invited talk at the 2005 UVA Meeting on Evolutionary Demography, University of Virginia, Charlottesville, VA. Oct. 28-30 2005

POSTERS

*deBInfer: Bayesian inference for dynamical models of biological systems in R. International Society for Bayesian Analysis World Meeting, Sardinia, Italy. June 2016*

*Effects of uncertainty in temperature dependencies of physiological responses on predictions of  $R_0$  for malaria: a Bayesian approach. Workshop on Uncertainty, Sensitivity and Predictability in Ecology: Mathematical Challenges and Ecological Applications, Mathematical Biosciences Institute. October 26-30, 2015*

*Data-Driven Mathematical Models for HLB: Testing Interventions in a Virtual World. International Research Conference on Huonglongbing (IRCHLB). Orlando, FL. 9-13 February 2015*

*Effects of uncertainty in temperature dependencies of physiological responses on predictions of  $R_0$  for malaria: a Bayesian approach. 2014 Opening workshop for the SAMSI Program on Mathematical and Statistical Ecology. August 18-22, 2014*

*Effects of uncertainty in temperature dependencies of physiological responses on predictions of  $R_0$  for malaria: a Bayesian approach. 2013 EEID Conference, The Pennsylvania State University, State College, Pennsylvania, 20-23 May, 2013*

*Parameter Inference for an Individual Based Model of Chytridiomycosis in Frogs. 2011 EEID Conference in Santa Barbara, CA. 19-20 June 2011 *Life Histories and Aging in Bacteria and other Single-celled organisms*: Evolution 2007 conference in Christchurch, New Zealand. 16-19 June 2007.*

*Monte Carlo Studies on Proton Computed Tomography using a Silicon Strip Detector Telescope: Poster Talk at the 2002 IEEE Nuclear Science Symposium and Medical Imaging Conference, Norfolk, VA.*



TEACHING

**Courses at Virginia Tech:**

**Undergraduate:**

- *STAT 3616: Biological Statistics 2* - Fall 2016
- *CMDA/STAT 4664: Comp Stochastic Modeling* - Spring 2017
- *STAT 4214/5214: Methods of Regression/Advanced Methods of Regression* - Fall 2017

**Courses at USF:**

**Graduate:**

- *Data Analysis for Scientists* - Fall 2015
- *Organic Evolution* - Fall 2015
- *Mathematical Biology* - Spring 2015
- *Applied Regression for Scientists* - Fall 2014

**Undergraduate:**

- *Organic Evolution* - Fall 2015

**Courses Elsewhere:**

**Temporary Lecturer (Loyola University Chicago)**

*Evolution and Genetics, Fall 2011* (undergraduate)

**Workshop Instructor**

2011 Ecology and Evolution of Infectious Diseases (EEID) Ecology workshop. (22-25 June 2011)

**Guest Lecturer (UCSB)**

*Theoretical Population Ecology, Spring 2010* (undergraduate)

I designed and taught a 2 week (5 lecture) module on stochastic modelling.

**Supervisor (University of Cambridge)**

This consisted of small group teaching (1-3 students) to cover coursework in depth.

(Part IA/B = first and second year undergraduate; Part II = advanced undergraduate)

- *Part II Mathematical Biology*
- *Part IB Statistics*
- *Part IA Differential Equations*
- *Part IA Newtonian Dynamics*

**Teaching Assistant, Tutor/Grader (UCSC)**

- *Introductory Physics I (Lab)*
- *Introductory Physics II (Lab)*
- *Calculus*
- *Managerial Statistics*
- *Intro to Probability Theory*
- *Design and Analysis of Computer Simulation Experiments*

MENTORING  
EXPERIENCE

**Current:**

*Graduate Students*

- Fadoua El Moustaid (2015 - )
- Zachary Gajewski (2015 - )

*Postdocs*

- Philipp Boersch-Supan (2014 - 2018)
- Rachel Taylor (2014 - 2016)

*Committees*

- Sarah Burgen (MS, 2016)
- Jeremy Cohen (PhD, 2016)
- Karena Nguyen
- Nicholas Ogburn

*Undergraduates*

At VT:

- Hani Slamani (CMDA)
- Chaoran Wang (Stats)
- Izak Monteban (CMDA)
- Zorian Thornton (Stats)

At USF:

- Matthew Cuffaro (math)
- Abigail Dobson (biology)
- James Martin (public health)
- Luc Olivier (math)

**Mentor (University of Cambridge)**

I set and supervised a project for students taking Part III (master's level) mathematics, and co-supervised a summer undergraduate researcher with scientists from the British Antarctic Survey.

PROFESSIONAL  
ACTIVITIES

Subject Matter Editor for *Ecosphere* (Sept. 2017 to present)

**Reviewer for:** EcoHealth; Journal of the Royal Society Interface; American Naturalist; Journal of Theoretical Biology; Theoretical Population Biology; Oikos; Theory in Biosciences; Aging Cell; PLoS One; Journal of Sea Research; Population Ecology; Stochastic Environmental Research and Risk Assessment (SERR); Trends in Parasitology; Animal Conservation; Journal of Applied Ecology; Proceedings of the Royal Society B; Tropical Medicine & International Health

**Grant Reviews:**

**Ad Hoc:** year (number of proposals)

NSF Office of Polar Programs - 2014 (2)

NSF Biological Sciences Division - 2018 (1)

**Panels:** year (number of proposals)

NSF Biological Sciences Division - 2016 (10), 2017 (13)

**Workshop/Working group participation**

Organized the VectorBiTE RCN 2018 Meeting and Workshop, held in Asilomar, CA

Organized the VectorBiTE RCN 2016 Meeting, held in Clearwater, FL

VectorBiTE working group on Environmental influences across stages. From March 2016 and continuing.

SAMSI Working group on Multivariate Models, Climate, and Biodiversity. from August 2014-2015, and continuing.

NCEAS/Luce Fellow working group on Malaria and Climate Change (2011-2013)

**Committees:**

*VT Stats:* Policy Committee; Mathematics/CMDA hiring committee (Fall 2016); CMDA Scholarship committee (2017)

*USF Integrative Biology:* Graduate Admissions and Policy Committee; Seminar Committee.