

Rebecca K. Borchering

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EDUCATION	Ph.D. in Mathematics	expected, May 2017
	University of Florida, Gainesville, FL	
	Advisors: Dr. Scott McKinley (Mathematics), Dr. Juliet Pulliam (Biology)	
	M.S. in Mathematics	May 2014
	University of Florida, Gainesville, FL	
	B.S. in Mathematics	May 2011
	Concurrent Degree: B.A. in Philosophy	
	Arizona State University, Tempe, AZ	
EXPERIENCE	<i>Program Administrator</i>	August 2015 - August 2016
	International Clinics on Infectious Disease Dynamics and Data (ICI3D) Program, University of Florida, Emerging Pathogens Institute, Gainesville, FL	
	<ul style="list-style-type: none">• Provided logistical and administrative support for the annual ICI3D workshops on mathematical and statistical modeling of infectious disease dynamics.• Coordinated travel and financial arrangements for the International Disease Dynamics and Data Research Scholars Exchange Program.• Assisted with progress reports for the National Institutes of Health and the African Institute for Mathematical Sciences (AIMS).	
	<i>Research Intern</i>	July 2013
	Centers for Disease Control and Prevention, Atlanta, GA	
	<ul style="list-style-type: none">• Collaborated with researchers in the Poxvirus and Rabies Branch and investigated the rabies data collection process.	
TEACHING AND MENTORSHIP	<i>Workshop Faculty</i>	December 2015 - Present
	Clinic on Dynamical Approaches to Infectious Disease Data (DAIDD), Jacksonville, FL	
	<ul style="list-style-type: none">• Developed and presented lecture on stochastic simulation methods which included an interactive computer simulation component.• Mentored break-out sessions of small groups of students to develop skills for building compartmental models of infectious diseases.	
	Clinic on Meaningful Modeling of Epidemiological Data (MMED), Muizenberg, South Africa	
	<ul style="list-style-type: none">• Prior to the Clinic, provided mentoring and instruction during a one week course: Mathematical Modeling in Medicine and Public Health for Biomathematics Honours and AIMS Masters students.• Led session on stochastic modeling of infectious disease dynamics with computer lab tutorial.• Developed and mentored group project on identifying mechanisms of seasonality.	
	<i>University Employment</i>	
	<ul style="list-style-type: none">• Course Assistant for Survey of Calculus and Calculus II• Discussion Leader for Calculus I sections• Discussion Leader for Pre-Calculus sections• Informational Assistant for College Mathematics• Informational Assistant for Pre-Calculus section	Spring 2017 Fall 2016 Fall 2011, Spring 2012 Spring, Fall 2009 Fall 2009
HONORS AND AWARDS	American Mathematics Society Travel Award - Joint Mathematics Meeting (\$500)	January 2017
	CLAS Dissertation Fellowship (\$7,000 plus tuition)	Summer 2016
	ICI3D Travel Award - Epidemics ⁵ in Clearwater, FL, USA (\$700)	December 2015
	Eleanor Ewing Ehrlich Award - UF Mathematics Department (\$500)	April 2015
	IGERT Research Assistantship (\$22,500 plus tuition and fees)	Fall 2014 - Summer 2015
	IGERT Fellowship (\$30,000 annually plus tuition and fees)	Fall 2012 - Summer 2014
	IGERT Travel Award - Epidemics ⁴ in Amsterdam, Netherlands (\$3100)	Fall 2013

IGERT Travel Award - Centers for Disease Control and Prevention (\$1870)
IGERT Research Assistantship (\$5400)

Summer 2013
Summer 2012

PUBLICATIONS **R.K. Borchering**, S.E. Bellan, J.M. Flynn, J.R.C. Pulliam, and S.A. McKinley. Resource-Driven Encounters and the Induction of Disease Among Consumers. <http://dx.doi.org/10.1101/091850> *Submitted*. (2016)

R.K. Borchering, H. Liu, M.C. Steinhaus, C.L. Gardner, and Y. Kuang. A Simplistic Spatiotemporal Rabies Model for Skunk and Bat Interaction in Northeast Texas. *Journal of Theoretical Biology* **314**: 16-22. (2012)

INVITED

PRESENTATIONS

R.K. Borchering. Impact of resource abundance on pathogen invasion risk.

- South African Center for Epidemiological Modeling and Analysis Seminar. Stellenbosch University, Stellenbosch, South Africa June 2016.
- MMED Faculty Research Talk. African Institute for Mathematical Sciences, Muizenberg, South Africa June 2016.
- Disease Group Seminar. Princeton University, Princeton, NJ, USA May 2016.
- Lloyd-Smith Lab Seminar. University of California, Los Angeles, CA, USA April 2016.
- Disease Ecology Seminar. University of Glasgow, Glasgow, Scotland Feb. 2016.
- DAIDD Faculty Research Talk. White Oak Conservation Center, Yulee, FL, USA Dec. 2015.

R.K. Borchering. Impact of resource abundance on consumer encounter rates (with an application to pathogen invasion risk). Probability and Statistics Seminar. Tulane University, New Orleans, LA, USA September 2015.

R.K. Borchering. Modeling potential drivers of rabies dynamics in carnivores. Computational Ecology and Epidemiology Study Group. University of Georgia, Athens, GA, USA July 2013.

OTHER

PRESENTATIONS

R.K. Borchering, J.M. Flynn, S.E. Bellan, J.R.C. Pulliam, and S.A. McKinley. Impact of resource abundance on pathogen invasion risk. Joint Mathematics Meetings. Atlanta, GA, USA Jan. 2017.

R.K. Borchering. Approximating the probability of invasion in discrete stochastic population models. Biomath Seminar. University of Florida, Gainesville, FL, USA April 2016.

R.K. Borchering. Impact of resource abundance on consumer encounter rates. Biomath Seminar. University of Florida, Gainesville, FL, USA September 2015.

R.K. Borchering. Investigating conditions for rabies endemicity in jackals. Biomath Seminar. University of Florida, Gainesville, FL, USA October 2014.

R.K. Borchering. Connecting rabies dynamics in wildlife populations to surveillance data. Biomath Seminar. University of Florida, Gainesville, FL, USA April 2014.

R.K. Borchering and J.R.C. Pulliam. Assessing seasonal drivers of rabies dynamics in three North American carnivore species. UF Graduate Mathematics Association. University of Florida, Gainesville, FL, USA November 2013.

CONTRIBUTED POSTERS

R.K. Borchering, J.M. Flynn, S.E. Bellan, J.R.C. Pulliam, and S.A. McKinley. The impact of resource abundance on pathogen invasion risk.

- American Institute of Mathematical Sciences Conference. Orlando, FL, USA July 2016.
- Emerging Pathogens Institute Research Day. Gainesville, FL, USA February 2016.

R.K. Borchering, S.E. Bellan, J.M. Flynn, J.R.C. Pulliam, and S.A. McKinley. Effects of resource density on encounter rates and disease outcomes.

- Epidemics⁵: Fifth International Conference on Infectious Disease Dynamics. Clearwater, FL, USA December 2015.
- Society for Mathematical Biology Annual Meeting and Conference. Atlanta, GA, USA July 2015.
- Ecology and Evolution of Infectious Diseases Annual Conference. Athens, GA, USA May 2015.

R.K. Borchering, C.A.B. Pearson, A.T. Gilbert, J.D. Blanton, R.M. Wallace, and J.R.C. Pulliam. Assessing rabies seasonality in three North American carnivore species.

- Clinic on the Meaningful Modeling of Epidemiological Data. African Institute for Mathematical Sciences, Muizenberg, South Africa June 2014.
- From Within Host Dynamics to the Epidemiology of Infectious Disease Workshop. Mathematical Biosciences Institute, Columbus, OH, USA April 2014.
- Third UF SIAM Gators Student Conference. University of Florida, Gainesville, FL, USA March 2014.

R.K. Borchering, C.A.B. Pearson, A.T. Gilbert, J.D. Blanton, R.M. Wallace, and J.R.C. Pulliam. Assessing seasonal drivers of rabies dynamics in three North American carnivore species.

- Epidemics⁴: Fourth International Conference on Infectious Disease Dynamics. Amsterdam, Netherlands November 2013.
- Graduate Student Research Day. Gainesville, FL, USA October 2013.
- Society for Mathematical Biology Annual Meeting and Conference, Tempe, AZ, USA June 2013.

R.K. Borchering, H. Liu, M.C. Steinhaus, C.L. Gardner, and Y. Kuang. A simple spatiotemporal rabies model for skunk and bat interaction in northeast Texas. Society for Mathematical Biology Annual Meeting and Conference, Knoxville, TN, USA July 2012.

ACTIVITIES

Cummings Lab Member Fall 2016 - Present

- Department of Biology and Emerging Pathogens Institute at the University of Florida.

Pulliam Lab Member Summer 2012 - Present

- Department of Biology and Emerging Pathogens Institute at the University of Florida.

Elected *Vice President*, UF Graduate Mathematics Association 2014

Elected *Treasurer*, UF Graduate Mathematics Association 2013

Member of UF Graduate Mathematics Association 2011-Present

Member of the American Mathematical Society 2011-Present

Member of the Society for Mathematical Biology 2011-Present

(updated January 2017)