

Bethany Lucas

Phone: 303.458.4092

Email: blucas001@regis.edu

Education

Doctor of Philosophy, Genetics
The University of Wisconsin-Madison

Conferred Aug. 2017

Bachelor of Science, Biology: Genetics
The University of Kansas

Conferred May 2010

Teaching Experience

* graduate-level course

Assistant Professor, Biology

Aug. 2018 – Present

Regis University

Courses: Biomedical Genetics, Biomedical Human Physiology Lab*,
Microbiology Lab, Genetics & Genomics Lab, Principles of Genetics,
Molecular & Cell Biology Lab and Honors Lab, Biomedical Seminars*,
Cancer Genetics (online)*, Writing Analytically: Did my DNA make me do it?,
Seminar in Biology Research, Developmental Biology, Molecular and Cellular
Biology Research Lab*

Term Instructor, Biology

Aug. 2017 – Aug. 2018

Regis University

Courses: Biomedical Genetics, Developmental Biology, Cancer Genetics (hybrid)*,
Principles of Genetics lecture & lab, Biomedical Human Physiology Lab*,
Organismic Biology Lab, Microbiology Lab*

Part-Time Faculty

Aug. 2016 – May 2017

Madison Area Technical College

*Courses: Principles of Animal Biology lecture & lab (A&P for
veterinary technicians), Environmental Issues*

Graduate Teaching Assistant

Aug. 2009 – May 2016

The University of Wisconsin-Madison

Courses: Biocore Cell Biology Lab, Intro to Animal Development, General Genetics

Undergraduate Teaching Assistant

Fall 2009

The University of Kansas

Course: Principles of Genetics

Research Experience

Disciplinary

Assistant Professor

Aug. 2018 – Present

Regis University

Expanding on the functional role of microtubules in cell-cell adhesion and migration during development – embryonic and larval – in *C. elegans*.

Post-Doctoral Fellow

June 2017 – July 2017

The University of Wisconsin-Madison

Biochemically characterized TES-1 and ZYX-1, proteins that are involved in modulating cadherin-based adhesions under tension during late embryonic morphogenesis in *C. elegans*. Principal Investigator: Dr. Jeff Hardin.

Graduate Research Assistant

Aug. 2010 – June 2017

The University of Wisconsin-Madison

Characterized SRGP-1, a protein involved in modulating cadherin-based adhesions through alpha-catenin/HMP-1 and actin during embryonic morphogenesis in *C. elegans*. Principal Investigator: Dr. Jeff Hardin.

Undergraduate Research Assistant

May 2008 – May 2010

The University of Kansas

Honors thesis: Characterized *macroglobulin complement-related*, which genetically interacts with the ecdysone hormone pathway and affects septate junction function and various morphogenetic processes in *D. melanogaster*. Principal Investigator: Dr. Robert Ward IV.

Education

Delta Teaching-as-Research Intern

April 2015 – Jan. 2016

The University of Wisconsin-Madison

Designed, implemented, and evaluated peer-assisted learning interventions to improve underserved student success in *Gender and Women's Studies 103: Women and Their Bodies in Health and Disease*, an introductory A&P course for non-science majors. Internship partner: Dr. Jenny A. Higgins.

Publications

*student co-author

Lucas, B., G. Nichols, and M. Boeck. 2021. Linking Genetics, Microbiology, and Molecular Biology Courses to Provide Research Experiences in Undergraduate Biology. *The American Biology Teacher*. 83 (7): 474-478.

Lucas, B., S. Grayson*, H. Hamidu*, A. Han*, S. No*, A. Varghese*, and J. Campisi. 2020. Sex differences in heart rate responses to occupational stress. *Stress*. 23(1): 13-18.

Shao, X., **B. Lucas**, J. Strauch*, and J. Hardin. 2019. The adhesion modulation domain of *C. elegans* α -catenin regulates actin binding during morphogenesis. *Molecular Biology of the Cell*. 30 (17): 2115-2123.

Lucas, B., and J. Hardin. 2017. Mind the (sr)GAP – roles of Slit-Robo GAPs in neurons, brains and beyond. *Journal of Cell Science*. 130: 3965-3974.

Walck-Shannon, E., **B. Lucas**, I. Chin-Sang, D. Reiner, K. Kumfer, H. Cochran, W. Bothfeld, and J. Hardin. 2016. CDC-42 orients cell migration during epithelial intercalation in the *Caenorhabditis elegans* epidermis. *PLOS Genetics*. 12 (11).

Hall, S., C. Bone, K. Oshima, L. Zhang, M. McGraw, **B. Lucas**, R.G. Fehon, R.E. Ward IV. 2014. *Macroglobulin complement-related* encodes a protein required for septate junction organization and paracellular barrier function in *Drosophila*. *Development*. 141: 889-898.

Grants

Teaching and Learning with Technology Micro-grants, ID&T, Regis University

Introducing basic fluorescence microscopy to biology lab courses: \$2000

March 2019

Bethany Lucas (PI), Gena Nichols, Karin Streifel

Microvolume molecular spectroscopy in biology laboratory classes: \$2000

March 2018

Gena Nichols (PI), **Bethany Lucas**, Max Boeck, Jennifer Grier

Faculty Advisor for Student Research and Scholarship Grants, URSC, Regis University Oct. 2018 & 2020

Does being directly affected by COVID-19 impact compliance with CDC precautions and stress levels? \$267

A controlled experiment to determine whether patterns of social media and mobile phone use influence social behaviors and anxiety in university students: \$500

The impact of a single session of guided mindfulness meditation on self-rated stress levels, blood pressure, and heart rate compared to no meditation: \$50

Ad hoc Scholarly Peer Review

Journal of Cell Science

2021

PLOS One

2019

Educational Materials Review

Introduction to Genetic Analysis (WH Freeman & Company)

2019

Advising and Mentoring Experience

Independent Research Advisor, Regis University

Aug. 2018 – Present

Served as an advisor for 11 students on research projects in the biology department: these characterize the relationship between loss of cell adhesion and vacuole formation in *C. elegans* embryos, the role of *nlg-1* in behavior and aging in *C. elegans*, the effect of various bacteria on *C. elegans* development, and the importance of microtubules to dorsal intercalation in *C. elegans* embryos.

Honors Thesis Reader, Regis University

Aug. 2018 – Present

Served as an honors thesis reader for five students.

Internship Supervisor, Regis University

Aug. 2018 – Dec. 2018

Served as an internship supervisor for one student.

Research Mentor, UW-Madison

Jan. 2016 – Feb. 2017

Served as a research mentor to two students and a technician while completing a PhD that characterized SRGP-1's BAR domain interactions with its C terminus *in vitro*, SRGP-1's interaction with HMP-1/ α -catenin and actin *in vitro*, and the effect of glucose incubation on Bovine Intestinal Alkaline Phosphatase enzymatic activity.

Teaching Assistant Workshop Facilitator and Mentor

June 2016

Genetics Doctoral Program week-long TA training
The University of Wisconsin-Madison

Selected Presentations

Disciplinary

Bethany Lucas. October 2017. What can the study of genetics teach us about human health? Presentation at the Department of Biology Seminar Series, Regis University, Denver, CO.

Bethany Lucas. April 2016. Characterizing the role of SRGP-1 in modulating cell adhesion. Presentation at the Zoology Department Show and Tell Seminar, University of Wisconsin-Madison, Madison, WI.

Bethany Lucas. July 2014. Modulation of actin dynamics during epidermal morphogenesis by SRGP-1. Presentation at the Department of Genetics Summer Colloquium Series, University of Wisconsin-Madison, Madison, WI.

Bethany Lucas. August 2013. Characterizing the role of the F-BAR protein SRGP-1 during epidermal morphogenesis in *Caenorhabditis elegans*. Presentation at the Department of Genetics Summer Colloquium Series, University of Wisconsin-Madison, Madison, WI.

Bethany Lucas, Allison Lynch, Jon Mayers, Anjon Audhya, and Jeff Hardin. June 2013. Characterizing the role of the F-BAR protein SRGP-1 during epidermal morphogenesis in *Caenorhabditis elegans*. Poster session at the Gordon Research Conference: Cell Contact and Adhesion, Barga, Italy.

Bethany Lucas. March 2013. Characterizing the role of the F-BAR protein SRGP-1 during epidermal morphogenesis in *Caenorhabditis elegans*. Presentation at the Zoology Department Show and Tell Seminar, University of Wisconsin-Madison, Madison, WI.

Molly McGraw, **Bethany Lucas**, Liang Zhang, and Robert Ward. April 2010. Cloning and characterization of *sidewinder*, a gene required for tracheal morphogenesis and septate junction function. Poster at the 51st Annual *Drosophila* Research Conference, Washington, D.C.

Education

Gena Nichols, **Bethany Lucas**, Max Boeck, and Jennifer Grier. March 2019. Microvolume molecular spectroscopy in biology laboratory classes. Poster at the 9th Annual Learning Technology Fair, Regis University, Denver, CO.

Bethany Lucas. November 2015. Characterizing Majority and Minority Student Expectations of - and Success in - an Introductory Gender and Women’s Studies Course. Presentation at the CIRTL Teaching-As-Research Event. Online.

Selected Guest Lectures

RCC 430M. How We Live and Die: Gene Editing & Development. Regis University. September 2019, May 2021.

Framing and selling your teaching-as-research experience. Center for the Integration of Research, Teaching, and Learning (CIRTL). Online. September 2018.

Media Coverage

“Students, professors collaborate on first-of-its-kind study about stress response at work.” Regis University News. 23 July 2019. (Picked up by the Association of Jesuit Colleges and Universities weekly newsletter)

University & Departmental Service

MS in Biomedical Science Admissions Committee interviewer March 2019 – Present
Regis University

HIPAA Privacy Board Sep. 2018 – Present
Regis University

Regis College Faculty Senator and Recording Secretary Aug. 2019 – April 2021
Regis University

Science and Technology Summer Camp volunteer, Science Sunday volunteer Regis University	April & July 2019
Global Engagement Colloquium panel judge Regis University	March 2019
Admissions Committee The University of Wisconsin-Madison Genetics Doctoral Training Program	Nov. 2015 – Feb. 2016
Zoology Show and Tell Speaker Coordinator The University of Wisconsin-Madison Department of Zoology	Aug. 2013 – May. 2015
Retreat Committee The University of Wisconsin-Madison Genetics Doctoral Training Program	April 2011 – Sep. 2014
Preliminary Exam A Committee The University of Wisconsin-Madison Genetics Doctoral Training Program	Jan. 2014 – Aug. 2014
Selected Professional Development and Training <hr/>	
<i>Workshops and learning communities</i>	
Integrative Teaching Institute Regis University	May 2021
Faculty Vocational Discernment learning community Regis University	Sep. 2020 – April 2021
Ignatian Summer Institute I & II, Mission Regis University	Aug. 2018 – June 2020
RCC200 learning community and training Regis University	Jan. 2019 – Dec. 2019
Brave Space queer inclusivity training Regis University	Sep. 2018
<i>Selected courses at The University of Wisconsin-Madison</i>	Sep. 2014 – Aug. 2016
Basics of Online Learning and Teaching	
Teaching in the College Classroom: Primarily Undergraduate Institutions	

Diversity in the College Classroom
Community-Based Learning
The Unique Challenges of Engaging and Teaching First Year Students

Community Service

Biology project-based learning area expert Sep. 2018 – Dec. 2018
Arvada High School, Arvada, CO
Served as the biology expert for student-designed projects. Evaluated posters and presentations and offered advice.

Middle School Mentor Oct. 2015 – May 2016
Toki Middle School, Madison, WI
Mentored pairs of middle school students in conducting independent research projects to present at the Madison Middle School Science Symposium at The University of Wisconsin-Madison

Middle School Science Mentor/Camp Counselor April 2015 and 2016
I Want to Know! 4-H STEM Camp, Wisconsin Dells, WI

Science Leader: Adult Role Models in Science June 2015 – Aug. 2015
Goodman Community Center, Madison, WI
Designed and led outdoor, scientific method-based activities for two age groups: 1st/2nd and 3rd/4th grades

Young Science Scholars: Adult Role Models in Science Aug. 2014 – June 2015
Hawthorne Elementary School, Madison, WI
Science teacher in 2nd/3rd grade bilingual class; designed and implemented elementary science curriculum using FOSS/NGSS learning objectives as a foundation

Selected Additional Professional Experience

Freelance English-language editor April 2017 – June 2017
Edited pre-submission publications for non-native English speakers

Graduate Student Reader/Grader: Introduction to Animal Development Spring 2016 and 2017
The University of Wisconsin-Madison, Madison, WI

Acquisitions Editor June 2008 – May 2010
Quintessential Books, Overland Park, KS

Copy Editor Dec. 2006 – June 2008
Quintessential Books, Overland Park, KS