

# **Lisa M. Goering, Ph.D.**

## **Professor**

Department of Biological Sciences

St. Edward's University

3001 S. Congress Avenue

Austin, TX 78704

Ph: (512) 492-3156

[lisago@stedwards.edu](mailto:lisago@stedwards.edu)

## **Education**

- Ph.D University of Utah, Salt Lake City, Utah.  
Human Genetics - May 2003  
Thesis Advisor: Dr. David Grunwald.  
Thesis Title: T-Box Transcription Factor Interactions in the Zebrafish Mesoderm:  
Regulation of Gene Expression and Cell Fate.
- BA Bethel College, North Newton, Kansas  
Biology – May 1995, *summa cum laude*  
Senior Thesis: The role of *c-fos* in rat intestinal development.

## **Academic Appointments**

- 2021- Professor of Biological Sciences
- Spring 2017 University Research Affiliate Visiting Scholar (Sabbatical)  
University of Texas at Austin, Austin TX
- 2015-2021 Associate Professor (Tenured) of Biological Sciences  
St. Edward's University, Austin TX.
- 2012-2015 Associate Professor of Biological Sciences  
St. Edward's University, Austin TX.
- 2007-2012 Assistant Professor of Biological Sciences  
St. Edward's University, Austin TX.

## **Administrative Appointments**

- 2020-2021 Interim Associate Dean, School of Natural Sciences
- 2019-2020 Associate Chair, Department of Biological Sciences  
2015-2016
- 2017-2019 Chair, Department of Biological Sciences  
St. Edward's University, Austin TX
- 2013-2014 Interim Chair, Department of Biological Sciences

2011-2012 St. Edward's University, Austin TX

## Research Positions

- 2003-2007 Post-Doctoral Research Fellow  
Department of Genetics, North Carolina State University.  
Advisor: Dr. Gregory Gibson.  
Research Interest: Natural genetic variation for early development in *Drosophila melanogaster*.
- 1995-1996 Research Technician II  
Baylor College of Medicine, Houston TX.  
Supervisor: Dr. Gregor Eichele,  
Project: Retinoic acid signaling in chick limb morphogenesis.
- 1994 Summer Medical and Research Training (SMART) program participant Baylor College of Medicine, Houston Texas.  
Advisor: Susan J. Henning.  
Project: The role of *c-fos* in rat intestinal development.

## Honors and Awards

- 2020 AAC&U Sherman-Fairchild Grant, Participant, Assignment redesign.
- 2019 PI, "Building Capacity for Research and Teaching in Statistics and Data Science"; Patricia Baynham, Chuck Hauser, Matt Steffenson, CoPIs. Institute for Interdisciplinary Science (i4), Professional Development Grant, St. Edward's University \$5700
- 2018 Senior Personnel, "MRI: Acquisition of a versatile, user-friendly, automated fluorescence microscope to promote research performed by faculty and undergraduates at a Hispanic-serving institution." Andrea Holgado and Dan Gold, co-PIs. National Science Foundation \$207,310.
- 2017 Sabbatical, "Developing capacity for Developmental Biology and Genetics teaching and research at St. Edward's University."
- 2016-17 Global Innovation Fellow, "Effective Global Engagement through Embedded Study Abroad". Patricia Baynham, Co-Fellow.
- 2015-16 CO-PI, "Community for Achievement in Science, Academics, and Research", LLC director, Richard Kopec, PI, National Science Foundation
- 2014 Curriculum Improvement Grant, St. Edward's University \$500
- 2014 Presidential Excellence Grant, St. Edward's University \$5000
- 2013 Teaching Award, St. Edward's School of Natural Sciences
- 2011 Distinguished Teaching Award, St. Edward's University
- 2011 Curriculum Improvement Grant, St. Edward's University, School of Natural Sciences \$1500, Patricia Baynham, William Quinn, Osvaldo Hernandez, Al Hook co-awardees
- 2010 Curriculum Improvement Grant, St. Edward's University, School of Natural Sciences \$1000
- 2009-2014 "Undergraduate Research Experiences in Microbiology and Developmental Entomology". Patricia Baynham and Lisa Goering, co-PD. USDA \$295,000

2009 Presidential Excellence Grant, St. Edward's University \$5000  
2008 Presidential Excellence Grant, St. Edward's University \$5000  
2008-2009 Course Reduction, St. Edward's University, School of Natural Sciences  
2007-2008 Course Reduction, St. Edward's University, School of Natural Sciences  
1998-2001 Genetics Training Grant, National Institutes of Health, University of Utah.  
\$30,000  
1997-1998 Huntsman Cancer Institute Graduate Student Fellowship, University of Utah.  
\$10,000  
1997 National Science Foundation Predoctoral Fellowship, Honorable Mention.

## Teaching Experience

### St. Edward's University, Department of Biological Sciences

*Cell Biology*, senior core course

*Cell Biology lab*, senior core course

*Molecular Genetics*, sophomore core course

*General Biology I* freshmen core course

*General Biology I lab*, freshmen core course

*Research*, independent student research

*Research Methods*, senior level thesis course

*Senior Seminar*, senior level thesis course

*Undergraduate Research*, independent student research

*Developmental Biology*, upper level majors elective

*Contemporary Biology: Animal Development*, non-majors science in depth course

*Contemporary Biology: Evolution Down Under*, non-majors science in depth course with optional embedded study abroad.

*Human Genetics*, upper level majors elective

*Medical Terminology*, majors elective

*Agricultural Microbiology and Developmental Entomology*, research course

*Making Sense of the World in Words: Writing about Science*, non-majors Honors science/writing course. Co-designed and taught with Dr. Catherine Rainwater.

*Honors Thesis*, senior level honors thesis course.

*Culminating Experience in Biology*, senior capstone course

*Science Seminar*, first year course for science Living Learning Community students.

### Selected Undergraduate Research Projects Supervised:

- Veronica Gaffney, "Natural variation for anterior-posterior patterning in *D. melanogaster*: the anterior gap genes." Spring 2008-Fall 2009
- Lauren Stewart, "Natural variation for anterior-posterior patterning in *D. melanogaster*: the posterior gap genes." Spring 2008-Fall 2009
- Andrea Pavia. Characterization of *orthodenticle* expression in *D. simulans*. Spring-Fall 2009
- Elisabeth Sanders. Association of mRNA levels and eggshell phenotypes in *D. melanogaster*. Spring-Fall 2009
- Albert Venegas. Natural variation for anterior-posterior patterning in *D. melanogaster*: the pair-rule genes. Summer 2009
- Korre Fairman. Characterization of the *otd* early head enhancer from *D. simulans*. Summer-Fall 2009
- Austin Lewis. Quantitative analysis of expression differences among *otd* early head

- enhancer haplotypes. Summer 2009-Fall 2010
- Ivan Pulido, Effects of organophosphate pesticides on leg development in *Drosophila melanogaster*.” Spring-Fall 2010
- Noor Mahmoud, Do *even-skipped* regulatory polymorphisms associate with variation for anterior-posterior patterning? Summer-Fall 2010
- Katie Turner, Exploration of the phenotypic effects of *orthodenticle* haplotypes in *Drosophila melanogaster* Fall 2010
- Alyssa Ghant, Effects of regulatory polymorphisms on mRNA abundance and eggshell phenotypes in *D. melanogaster*. Spring-Fall 2010
- Matthew Perez, Effects of ethanol on CNS development and anterior-posterior patterning in *D. melanogaster*. Summer 2011
- Katie Hughes, The role of *kekkon-1* in eggshell patterning and diversity among *Drosophila* species. Summer 2011
- Hossaini, Roya. Effects of fructose nutritional stress on early development and patterning of *Drosophila melanogaster*. Summer 2012
- Laura Youngblood. Genetic background effects on the expressivity of EGFR pathway mutations and eggshell patterning in *D. melanogaster*”. Summer 2012-Summer 2013
- Stephanie Pace. Characterization of *orthodenticle* regulatory variation in *D. simulans*. Summer 2012-Fall 2013.
- Michelle Victoria. The effects of organophosphate exposure on development of the larval central nervous system of *Drosophila melanogaster*. Summer 2013
- Nathalie Eguiza. The effects of a high protein diet on Parkinson’s disease symptoms in *Drosophila melanogaster*. Spring-Fall 2014
- Matthew Duerr. Examining epigenetic inheritance of egg laying phenotypes in response to nutritional variation. Summer 2014.
- Zaira Villa. Exploration of the effects of *bicoid* dosage on larval phenotypes in *Drosophila melanogaster*. Summer 2015- Spring 2017.
- Amber Randolph. Examining genetic and phenotypic variation in *cis* regulatory elements in *D. simulans* and *D. melanogaster*. Summer 2015-Spring 2017.
- Kamryn Gerner-Mauro. Effect of nutritional stress on fecundity and maternal provisioning of oocytes in *Drosophila melanogaster*. Spring 2015-Spring 2017
- Lauren Gately, Rebecca South (Austin Community College research interns), Alma Arellano. Looking for genetic superheroes: Genetic background affects mutant phenotypes in *Drosophila melanogaster*. Summer 2016- Spring 2017.
- Sultan Al-Jarbou and Maryam Mahmoud. Transgenerational inheritance of maternal phenotypes due to the effects of altered diet. Fall 2016- Spring 2018
- Andres Cuartas-Olarte. Effect of nutritional stress on fecundity and maternal provisioning of oocytes in *Drosophila melanogaster*. Fall 2017-Spring 2018
- Kaitlyn Matthey. The effects of a high protein diet on Parkinson’s disease symptoms in *Drosophila melanogaster*. Fall 2017-
- Maria Jose Cardenas Muedano (2018-2020) and Hunter F. Jackson (2019-). Assessing the effects of genetic background on EGFR pathway expression and function in *Drosophila melanogaster*. Summer 2018-Spring 2020
- Christina Prentis. The role of *argos* in eggshell patterning and diversity in *Drosophila* species. Summer 2020-
- RahJewel Barnhill. Analyzing changes in spatial expression of *D. simulans orthodenticle* due to naturally occurring *cis*-regulatory variation. Summer 2021-

North Carolina State University

*Honors Genetics*, Department of Genetics, Lecturer (with Drs. L. Mathies and J. Thorne). Spring 2006

*The Human Genome: Hope or Hype?* NCSU Encore Center for Lifelong Enrichment Lecturer (with Drs. G. Gibson and I. Dworkin). Winter 2005

*Genome Science*, Department of Genetics, Lecturer (with Dr. G. Gibson). Spring 2004, 2005, 2006

University of Utah

*General Biology for Science Majors*, Department of Biology, Teaching Assistant. Fall 1997

## University Service

St. Edward's University

Articulation Committee, 2020-2021

University Program Review Committee, 2020-2021

Exchange Services Evaluation Committee, 2020-2021

Academic Instruction, COVID-19 Workgroup, 2020-2021

Master Schedule Committee, 2020-2021

Success Coach Workgroup, 2020 -2021

Career Coach Search Committee, Summer 2020, Summer 2021

Faculty Taskforce for Academic Advising and Student Success, 2019-2020

Grievance/Ombuds Exploration Committee (elected), 2019-2021

Faculty and Staff Campaign Ambassador, 2013, 2015, 2016, 2020, 2021

Chair, Institutional Animal Care and Use Committee, 2012-2016

Co-Chair, Faculty Performance Evaluation Committee (elected), 2014-2016

Academy of Science, Faculty Advisor, 2012-

Pre-Dental Club, Faculty Advisor 2012-

McNair STEM Advisor, 2013-

School of Natural Sciences Travel Committee, 2014-

Natural Science LLC Director, 2015-2016

Faculty Evaluation Committee (elected), 2012-2014, 2016-2018

Faculty Compensation Committee (elected), 2018-2020

Faculty Senate Committee on School Reorganization, 2012-2013

School Administrative Appointments Committee, 2011-2012

Health Professions Advisory Committee, 2009-2010, 2016 -

Institutional Review Board, 2009-2011

Pre-Health Humanitarians, Faculty Advisor, 2009-2012

Alternate Faculty Senator, School of Natural Sciences (elected), 2008-2010

Darwin Day Planning Committee, 2008

J-SOURCE Editorial Board, 2008-

SOURCE Planning Committee 2007- 2015

- Co-chair, 2009-2011

University of Utah

Retention, Promotion and Tenure Committee, Graduate Student representative, 1999-2000

## Community Service

Section Chair, Annual Biomedical Research Conference for Minority Students, 2012  
Judge, Annual Biomedical Research Conference for Minority Students, 2009-2017  
Abstract Reviewer, Annual Biomedical Research Conference for Minority Students (ABRCMS),  
2007, 2012, 2013, 2014, 2015  
Travel Grant Reviewer, Annual Biomedical Research Conference for Minority Students  
(ABRCMS), 2014-  
Judge, Society for the Advancement of Chicanos and Native Americans in Science, 2018  
Lead Volunteer, Ten Thousand Villages, Austin, TX. 2008-  
Teacher Link Fellow, Center for Inquiry Based Learning and NC Science, Math and Technology  
Education Center, Durham, NC. 2006-2007  
NCSU Genetics Outreach (GO:NCSU). 2005-2007  
Genetic Science Learning Center, University of Utah. 1997-2000

## Professional Organizations

Society for the Study of Evolution  
Society for Developmental Biology  
Texas Academy of Science  
Council on Undergraduate Research  
Tri Beta, Biological Honors Society

## Manuscript referee

Genetics  
Evolution  
Evolution and Development  
Frontiers in Genetics

## Publications

Healy EF, **Goering LM**, Hauser C, King PJ. (2021). An immunomodulatory role for the *Mtb* Acr protein in the formation of the tuberculous granuloma. *FEBS Letters*. 595(2):284-293.  
<https://doi.org/10.1002/1873-3468.13998>

Black JJ, Wang, Z, **Goering L**, and Johnson, AW. (2018). Utp14 interaction with the Small Subunit Processome. *RNA*. 24: 1214-1228

**Goering LM**, Hunt PK\*, Heighington C\*, Van Emden B, Kumar, S, and Gibson G. (2009). Association of orthodenticle with natural variation for early embryonic patterning in *Drosophila melanogaster*. *Journal of Experimental Biology Part B: Molecular Biology and Evolution*. 312B(8):841-854

Le JE, Wu SF, **Goering LM**, Dorsky RI. (2006). Canonical Wnt signaling through Lef1 is required for hypothalamic neurogenesis. *Development* 133: 4451-4461.

**Goering LM** and Gibson G. (2005). Genetic variation for dorsal-ventral patterning of the *Drosophila melanogaster* eggshell. *Evolution and Development*. 7:81-88.

**Goering LM**, Hoshijima K, Hug B, Bisgrove B, Kispert A, and Grunwald DJ. (2003). An interacting network of T-box genes directs gene expression and fate in the zebrafish mesoderm. *PNAS* 100: 9410-9415.

Lu HC, Revelli JP, **Goering L**, Thaller C, Eichele G. (1997). Retinoid signaling is required for the establishment of a ZPA and for the expression of Hoxb-8, a mediator of ZPA formation. *Development* 124: 1643-1651.

Croissant JD, Kim JH, Eichele G, **Goering L**, Lough J, Prywes R, Schwartz RJ. (1996). Avian serum response factor expression restricted primarily to muscle cell lineages is required for alpha-actin gene transcription. *Dev. Biol.* 177: 250-264.

\*Undergraduate co-authors

## **Selected Peer Reviewed Meeting Abstracts and Invited Talks**

Cardenas-Muedano MJ\* and Goering LM. Looking for genetic superheroes: Genetic background affects mutant phenotypes in *Drosophila melanogaster*. Annual Biomedical Research Conference for Minority Students, November, 2019, San Antonio, TX.

Matthey K\* and Goering LM. The Effect of Dietary Protein on Parkinson's Disease Symptoms in *Drosophila melanogaster*. Texas Academy of Science Annual Meeting. March, 2019, Brownwood, TX

Cardenas-Muedano MJ\* and Goering LM. Looking for genetic superheroes: Genetic background affects mutant phenotypes in *Drosophila melanogaster*. Annual Meeting of the Society for the Advancement of Chicanos and Native Americans in Science. October, 2018, San Antonio, TX.

Gately L\*, South R\* and Goering LM. Looking for genetic superheroes: Genetic background affects mutant phenotypes in *Drosophila melanogaster*. Annual Biomedical Research Conference for Minority Students. November 2016, Tampa, FL.

Gerner-Mauro KN\*, Le VA\* and Goering LM. Effect of nutritional stress on fecundity in *Drosophila melanogaster*. Texas Academy of Science Annual Meeting. March 2016, Junction, TX

Le VA\*, Gerner-Mauro KN\* and Goering LM. Effect of Nutritional Stress on Maternal Provisioning of Oocytes in *Drosophila melanogaster*. Texas Academy of Science Annual Meeting. March 2016, Junction, TX

Villa Z\* and Goering LM. Exploration of the Effects of *bicoid* Dosage on Larval Phenotypes in

*Drosophila melanogaster*. Poster. Annual Biomedical Research Conference for Minority Students. November 2015, Seattle, WA.

Randolph AT and Goering LM. Examining Genetic and Phenotypic Variation of *Cis* Regulatory Elements in *Drosophila simulans* and *Drosophila melanogaster*. Annual Biomedical Research Conference for Minority Students. November 2015, Seattle, WA.

Goering LM, PJ Baynham. Building a Community of Microbiology and Developmental Entomology Undergraduate Researchers to Increase Scientific Expertise and Confidence. Texas Academy of Science Annual Meeting. March 2015, San Antonio, TX

Goering LM. Variety is the spice of life! Investigating the genetic basis of phenotypic change. Concordia University seminar series. March 2014, Austin TX

Victoria M\* and Goering LM. The Effects of Organophosphate Pesticides on Larval Central Nervous System Development in *Drosophila melanogaster*. Texas Academy of Science Annual Meeting. March 2014, Galveston TX

Pace S\* and Goering LM. The role of *orthodenticle* in early embryonic patterning in *Drosophila simulans*. Texas Academy of Science Annual Meeting. March 2014, Galveston TX.

Youngblood L\* and Goering LM. The effects of genetic background on the expressivity of EGFR pathway mutations affecting *Drosophila melanogaster* eggshell patterning. Annual Biomedical Research Conference for Minority Students. November 2013, Nashville, TN.

Hossaini R\* and Goering LM. Effects of Nutritional Stress on Early Development and Patterning of *Drosophila melanogaster*. Texas Academy of Science Annual Meeting. March 2013, Kerrville, TX.

Baynham PJ and Goering LM. Undergraduate Research Experiences in Microbiology and Developmental Entomology. USDA Hispanic Serving Institutions Education Grant Project Director's Meeting. June 2012, Edinburg, TX.

Perez, M\* and Goering LM. Effects of ethanol on CNS development and anterior-posterior axis patterning in *Drosophila melanogaster*. Texas Academy of Sciences, annual meeting. March, 2012. Alpine, TX.

Henegar T\* and Goering LM. The effects of glutaraldehyde on the development of the CNS in *Drosophila melanogaster*. Annual Biomedical Research Conference for Minority Students. November 2011, St. Louis MO.

Rozacky J\* and Goering LM. The effects of maternal age on the spacing of dorsal respiratory appendages in *Drosophila melanogaster*. Society for Developmental Biology Southwest Regional Meeting. October 2010, Austin, TX.

Mahmoud N\*, Venegas A\*, and Lisa M. Goering. Investigating Regulatory Polymorphisms for Anterior-Posterior Patterning in *Drosophila melanogaster*. Society for Developmental Biology Southwest Regional Meeting, October 2010, Austin, TX.

Pulido I\* and Goering LM. Effect of Dichlorvos on Leg Development in *Drosophila*



*melanogaster*. Society for Developmental Biology Southwest Regional Meeting. October 2010, Austin, TX.

Fairman K\*, Jalali M\*, Pavia-Jimenez A\*, and Goering LM *cis*-regulatory variation contributes to between species differences in *orthodenticle* gene expression. Society for Developmental Biology Southwest Regional Meeting. October 2010, Austin, TX.

Rozacky J\* and Goering LM. The Effects of Maternal Age on the Spacing of Dorsal Respiratory Appendages in *Drosophila melanogaster*. Annual Biomedical Research Conference for Minority Students (ABRCMS). November 2010, Charlotte, NC.

Baynham PJ and Goering LM. Undergraduate Research Experiences in Microbiology and Developmental Entomology. North American Colleges & Teachers of Agriculture Annual Meeting. June 2010, State College, PA.

Goering LM, Hunt PK, Heighington C, Gibson G. Variety is the spice of life! Investigating the genetic basis of phenotypic change. University of Utah, Genetics Training Grant lecture series, March 2008.

Goering LM, Hunt PK, Heighington C, Gibson G. Are cis-regulatory mutations a major contributor to phenotypic change? Texas Academy of Sciences, annual meeting. March 6-8, 2008. Corpus Christi, TX.

Goering LM and Gibson, G. Cis-regulatory variation and the evolution of eggshell patterning in *Drosophila melanogaster*. Evolution 2005, annual meeting. June 10-14, 2005. Fairbanks, Alaska.

Goering LM and Gibson, G. Investigating the genetic basis of phenotypic variation for *Drosophila* eggshell patterning. XXII International Congress of Entomology. August 15-21, 2004.

Goering LM, Hoshijima, K., Grunwald, DJ. A T-box Code Specifies Regional Identities in the Mesoderm. Zebrafish Development and Genetics Meeting. June 12-16, 2002.

Goering LM, Hoshijima, K, Metherall, J, Grunwald, DJ. T-box Genes Act Combinatorially to Control Downstream Gene Expression and Cell Fate: II. Interactions Between *no tail* and *spadetail*. West Coast Regional Zebrafish Meeting. July 22-23, 2001.

\*Undergraduate co-authors

Presenting author is underlined