

Kelsey Lewis

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Department of Biology
University of Florida

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EDUCATION

University of Florida, Department of Biology, Ph.D. Student — 2013-Present
Ph.D. Candidacy: April 2017
Scheduled Ph.D. Defense: April 1, 2020
Expected Graduation: May 1, 2020
Advisor: Martin J. Cohn, Ph.D.
Gainesville, Florida

Mount Holyoke College, Department of Biology, B.A. with High Honors — 2006-2010
Minor, Conceptual Foundations of Science
Advisor: Stan Rachootin, Ph.D.
South Hadley, Massachusetts

RESEARCH EXPERIENCE

University of Florida

2013-Present. M.J. Cohn Lab, Departments of Biology and Molecular Genetics & Microbiology
(1) Effects of the endocrine disrupting fungicide vinclozolin on external genital development
(2) Effects of the endocrine disrupting fungicide vinclozolin on sexually different digit ratio
(3) Prevalence of congenital penile variation in Gainesville, Florida
(4) Inappropriate applications of gendered terms in sex biology
(5) The role of the androgen-responsive GTPase RhoA in urethral tubulogenesis

University of Utah

2010-2013. Lab technician, G. Kardon Lab, Department of Human Genetics
(1) Building a 3D interactive digital anatomical atlas of the limb musculoskeleton and generating a timecourse of embryonic limb musculoskeletal morphogenesis (mouse)
(2) The role of muscle connective tissue fibroblast marker *Tcf4* (*Tcf7L2*) in limb patterning (mouse)

Mount Holyoke College

2009-2010. Honors thesis with S. Rachootin.
Comparative anatomy of Trichoptera and Lepidoptera and researchers' confirmation bias in the study of early lepidopteran evolution.
2008-2009. G. Gillis' Biomechanics and Comparative Physiology Lab.
Took high speed videos of sugar gliders (*Petaurus breviceps*) and assisted in analyzing data.

University of Massachusetts-Amherst

Summer 2009. Volunteer, bird care. Jeff Podos' Lab.

Metro Public Health Department, Nashville, Tennessee

Summer 2007. Volunteer Intern for Dr. Kimberlee Wyche-Etheridge, Family, Youth and Infant Health
Performed IRB-approved survey study of preconception health and awareness among patients.

TEACHING EXPERIENCE

University of Florida

Spring 2019. Teaching Assistant, BSC 2010 Lab (Introductory Biology)
Fall 2018. Teaching Assistant, Evolutionary, Developmental, and Regenerative Biology
Summer 2018. Teaching Assistant, BSC2005 Online (Introductory Biology for Non-Majors)
Spring 2014. Head Teaching Assistant, Evolutionary, Developmental, and Regenerative Biology
Fall 2013. Teaching Assistant, BSC 2010 Lab (Introductory Biology)

Mount Holyoke College

Spring 2009. Teaching Assistant, Bio 226: Evolution

GRANTS AND FELLOWSHIPS

- 2019 American Dissertation Fellowship, American Association for University Women
- 2019 John Paul Olowo Memorial Fund Research Grant, UF Department of Biology
- 2014 Graduate Research Fellowship, National Science Foundation
- 2010 Morgan-Adams Alumnae Fellowship, *awarded but declined*, Mount Holyoke College
- 2009 Marieb Science Research Award (summer research stipend), Mount Holyoke College

PRIZES AND AWARDS

- 2019 Basic Science Prize, 3rd Hypospadias World Congress, Hypospadias International Society, *awarded but declined*
- 2019 Nominee for UF Department of Biology Graduate Student Service Award (awardee to be announced February 2020)
- 2019 Honorable Mention for Best Poster, North American Society for Comparative Endocrinology (NASCE) Biennial Meeting
- 2019 Madelyn Lockhart Dissertation Award, UF Association for Academic Women
- 2019 Department of Biology Graduate Student Teaching Award (UF)
- 2019 The Aubrey Gorbman Award for Best Student Oral Presentation, Division of Comparative Endocrinology, Society for Integrative and Comparative Biology (SICB)
- 2018 Three Minute Thesis (3MT) Top 10 Finalist and People's Choice Award (UF)
- 2014 Best Overall Talk Award, Southeast Regional Society for Developmental Biology
- 2012 Poster Award, 12th Conference on Limb Development and Regeneration, Mont-Tremblant, Quebec, Canada
- 2012 Nikon Small World Competition, Top 100 Photomicrograph "Image of Distinction"
- 2012 Winner, Federation of American Societies for Experimental Biology (FASEB) Bio-Art Scientific Art Competition
- 2010 Mary Lyon Scholar, Mount Holyoke College

TRAVEL AWARDS

- 2019 SICB Charlotte Mangum Travel Award to attend Society for Integrative and Comparative Biology (SICB) Annual Meeting
- 2019 National Women's Studies Association (NWSA) Travel Grant and Conference Registration Scholarship for 2019 NWSA Annual Conference
- 2019 UF Graduate Student Council Travel Grant to attend NWSA Annual Conference
- 2019 UF Graduate Student Council Travel Grant, *awarded but declined*
- 2018 SICB Charlotte Mangum Travel Award to attend SICB Annual Meeting
- 2018 UF College of Liberal Arts and Sciences Graduate Travel Award to attend Feminist Biology Symposium
- 2017 SICB Charlotte Mangum Travel Award to attend SICB Annual Meeting

PROFESSIONAL AFFILIATIONS

- 2019- National Women's Studies Association (NWSA)
- 2013- Society for Developmental Biology (SDB)
- 2013- Society for Integrative and Comparative Biology (SICB)
- 2013- American Association for the Advancement of Science (AAAS)
- 2011-2012, 2018- Int'l Society for History, Philosophy, & Social Studies of Biology (ISHPSSB)
- 2010- Sigma Xi, The Scientific Research Society (Student Member)

UNIVERSITY & COMMUNITY SERVICE

Community Education

- Forthcoming (January 2020), LGBTIQ+ Panel Participation, Society for Integrative & Comparative Biology (SICB) Annual Conference, Austin, TX
- October 2019, Guest on UF's Chief Diversity Officer Antonio Farias' Podcast "Level Up"
- October 2019, Talk & Panel Participation, LGBTQ+ STEM Day, Florida Museum (UF)
- October 2019, WCJB TV20 News interview about LGBTQ+ STEM Day at Florida Museum (UF)
- June 2019, Sex, Gender, & Sexuality Cultural Competency Panel, Clinical & Health Psychology (UF)
- April 2019, "Sex is ????" Sex & Gender 101 Talk at Nerd Nite, C&G Brewery, Gainesville, FL

UF Women in Science & Engineering (UF WiSE)

2019- President
2019 Founded Feminist Science Reading Group
2018-2019 Vice President
2017- Member

Gainesville Ally Skills Network

October 2019, Co-led Ally Skills Workshop at UF for students and postdocs in the natural sciences
September 2019, "Allies 101: Why Allies?" Plenary Talk, Research Bazaar Gainesville (Invited)
September 2019, "Allies 101: Why Allies?" Talk, UF Biology Department Seminar Series (Invited)
May 2019, Co-founded Gainesville Ally Skills Network
May 2019, Participant in Train-the-Trainers Workshop held by Frameshift Consulting
February 2018, Participant in Ally Skills Workshop held by Frameshift Consulting

UF Biology Department's Diversity, Equity, and Inclusion (DEI) Committee

Graduate Student Representative, 2019-

Political Outreach

Fall 2017, National Science Board Meeting with Congressman Ted Yoho: UF selected 6 NSF Graduate Research Fellows to meet with and present research to Congressman Ted Yoho at the first meeting of NSF-funded researchers with representatives, University of Florida

UF Natural Resources Diversity Initiative (UF NRDI)

Summer 2017-2018, science lessons through after-school program and summer camp at Eastside Community Center, Gainesville, FL

Developmental Biology Lesson for Kids

Wiles Elementary School, Science Symposium, Gainesville, FL, Spring 2018, 2017, 2015, Fall 2014
Foster Elementary School, Full STEAM Ahead Day, Gainesville, FL, Spring 2015
Levy County 4-H Young Explorers Program, Bronson, FL, Spring 2015

Science Fair Judging

Professional Academies Magnet at Lofton High School, Spring 2015, Fall 2014, Spring 2014
Mebane Middle School, Alachua, FL, Fall 2013
Santa Fe High School, Alachua, FL, Fall 2013
Hillside Middle School, Salt Lake City, UT, Spring 2013

PUBLICATIONS

Wan, Y., Otsuna, H., Holman, H. A., Bagley, B., Ito, M., **Lewis, A. K.**, Colasanto, M., Kardon, G., Ito, K., Hansen, C.. (2017). FluoRender: joint freehand segmentation and visualization for many-channel fluorescence data analysis. *BMC Bioinformatics*, 18(1).

Gredler, M. L.*, Larkins, C. E.*, Leal, F.*, **Lewis, A. K.**, Herrera, A. M., Perriton, C. L., Sanger, T. J., Cohn, M. J. (2014). Evolution of external genitalia: Insights from reptilian development. *Sexual Development*, 8(5), 311-326.

Lours-Calet, C., Alvares, L. E., El-Hanfy, A. S., Gandesha, S., Walters, S. H., Sobreira, D. R., Wotten, K. R., Jorge, E. C., Lawson, J. A., **Lewis, A. K.**, Tada, M., Sharpe, C., Kardon, G., Dietrich, S. (2014). Evolutionarily conserved morphogenetic movements at the vertebrate head-trunk interface coordinate the transport and assembly of hypopharyngeal structures. *Developmental Biology*, 390(2), 231-246.

Wan, Y.*, **Lewis, A. K.***, Colasanto, M., van Langeveld, M., Kardon, G., Hansen, C. (2012). A Practical Workflow for Making Anatomical Atlases for Biological Research. *IEEE Computer Graphics and Applications*, Special Issue *Biomedical Applications*, 32(5), 70-80.

MANUSCRIPTS IN PREPARATION

Lewis, A. K. and Cohn, M. J. "Understanding mammalian sex differences through developmental biology." Invited review for *Development*.

Lewis, A. K., Magoc, T., Bird, V. Y., Armfield, B. A., Cohn, M. J. "Prevalence of hypospadias and other congenital penile variation in Gainesville, Florida." Target journal: *Birth Defects Research*.

Lewis, A. K., Zheng, Z., Svete, L. J., Kozuch, M., Nouri, M. Z., Ching, S., Klein, O. S., Denslow, N., Cohn, M. J. "The endocrine disruptor vinclozolin induces genital variation by modulating apoptosis in the genital tubercle." Target journal: *Development*, Special Issue: *The Origins and Mechanisms of Developmental Disorders*.

Lewis, A. K. "'Feminization' of Mice and Men: Inappropriate applications of gendered terms in sex biology." Target journal: *Catalyst: Feminism, Theory, Technoscience*.

Lewis, A. K. "Dueling theories of lepidopteran evolution: fighting confirmation bias." Target journal: *Catalyst: Feminism, Theory, Technoscience*.

North, L. T., **Lewis, A. K.**, Cohn, M. J. "Prenatal vinclozolin exposure induces female digit ratio in chromosomally-male mice." Target journal: *Andrology*.

GUEST LECTURES

November 2019, Guest lecture, ZOO 3603C Evolutionary Developmental Biology, UF

"Mammalian Sex Determination and Variation"

April 2019, Guest lecture, WST 3610 Gender, Race, and Science, UF

"Sex is a Binary Spectrum Mosaic"

March 2019, Guest lecture, LAS 6938 Masculinities, Gender, and Environment, UF

"Sex is a Binary Spectrum Mosaic"

February 2019, Guest lectures, ENC 3254 Writing in the Disciplines: Feminism & Gender, UF

"Bodies Words that Matter: Biology in a Social World"

"Letters to a Young Scientist: We Should All Be Feminists"

November 2018, Guest lecture, ZOO 3603C Evolutionary Developmental Biology, UF

"Sex Determination and Sex Diversity"

Fall 2017, Guest presentation and panel discussion, LIT 4930 Feminist Theory, UF

"How can science inform our understanding of sex and gender?"

Summer 2016, Guest lecture, ENC 2210 Technical Writing, UF

"Use of visual aids in science"

ORAL PRESENTATIONS

October 2019, Hypospadias International Society 3rd Annual World Congress, Children's

Hospital of Philadelphia, Philadelphia, PA

Invited Talk, "What do we know about chordee?"

Talk, "The endocrine disruptor vinclozolin induces penile malformations by modulating cell death during fetal development" *Basic Science Prize—awarded but declined*

May 2019, Society for Developmental Biology, Southeast Meeting, Birmingham, AL

Talk, "The endocrine disruptor vinclozolin induces penile malformations by modulating apoptosis in the genital tubercle"

April 2019, 3 Minute Thesis at the Florida Graduate School Conference, Miami, FL

3MT Talk, "Mechanisms of Nonbinary Sex" *One of two students selected to represent UF*

March 2019, Valdosta State University Department of Biology Seminar Series, Valdosta, GA

Seminar, "Prevalence and Developmental Mechanisms of Common Congenital Penile Anomalies"

January 2019, Society for Integrative and Comparative Biology (SICB), Tampa, FL

Talk, "The anti-androgenic fungicide vinclozolin disrupts sexual differentiation of the external genitalia" *Aubrey Gorbman Award for Best Oral Presentation*

December 2018, UF Biology Department Retreat, Marineland, FL

Lightning Talk, "Wanted: Feminist Scientists"

November 2018, 3 Minute Thesis Final Competition, University of Florida, Gainesville, FL

3MT Talk, "How a fungicide disrupts penis development" *People's Choice Award*

October 2018, 3 Minute Thesis Preliminary Competition, University of Florida, Gainesville, FL

3MT Talk, "How a fungicide disrupts penis development" *Top Ten Finalist*

September 2018, Science at the Shore, Whitney Marine Lab (University of Florida), Marineland, FL

Talk, "How a fungicide disrupts penis development"

January 2018, Society for Integrative and Comparative Biology (SICB), San Francisco, CA
Talk, “Structural defects of the external genitalia induced by the environmental fungicide vinclozolin”

Spring 2017, Society for Developmental Biology, Southeast Meeting, Kennesaw, GA
Talk, “Penile anomalies induced by the anti-androgenic fungicide vinclozolin”

Spring 2014, Society for Developmental Biology, Southeast Meeting, Pine Mountain, GA
Talk, “A 3D Atlas of Limb Musculoskeletal Morphogenesis in Mouse” *Best Talk Award*

Spring 2010, Senior Symposium, Mount Holyoke College, South Hadley, MA
Talk, “Comparative anatomy of wings and antennae in Trichoptera and Lepidoptera: Homologies, Plesiomorphies— What, if anything, are orders?”

Fall 2009, Student Research Seminars, Mount Holyoke College, South Hadley, MA
Talk, “Comparative anatomy of wings and antennae in Trichoptera and Lepidoptera: Homologies, Plesiomorphies— What, if anything, are orders?”

POSTER PRESENTATIONS

Forthcoming (Jan 2020), Society for Integrative and Comparative Biology (SICB), Austin, TX
“Understanding Sex and Gender as a Scientist: Why It Matters Now More Than Ever”

November 2019, National Women’s Studies Association Annual Conference, San Francisco, CA
“Undoing [Biological] Sex: Understanding the Body as Mosaic”

May 2019, North American Society for Comparative Endocrinology (NASCE) Biennial Meeting, Gainesville, FL. “The endocrine disruptor vinclozolin induces penile malformations by modulating apoptosis in the genital tubercle” *Honorable Mention*

January 2019, Society for Integrative and Comparative Biology (SICB), Tampa, FL
“Feminization of Mice and Men: Incorrect uses of gendered terms in sex biology”

October 2018, Florida Genetics Symposium, University of Florida
“The endocrine disruptor vinclozolin induces penile malformations by modulating apoptosis in the genital tubercle”

October 2018, Diversity Graduate Research Symposium, University of Florida
“Feminization of Mice and Men: Incorrect uses of gendered terms in sex biology”

October 2018, Wisconsin Symposium on Feminist Biology, University of Wisconsin-Madison
“Feminization of Mice and Men: Incorrect applications of gendered terms in sex biology”

September 2018, Science at the Shore, Whitney Marine Lab (University of Florida), Marineland, FL
Blitz Poster, “Feminization of Mice and Men: Incorrect uses of gendered terms in sex biology”

Spring 2018, College of Medicine Celebration of Research, University of Florida
“A mouse model of environmentally-induced birth defects of the reproductive system”

Fall 2017, Florida Genetics Symposium, University of Florida
“Structural defects of the external genitalia induced by the environmental fungicide vinclozolin”

Spring 2016, Society for Developmental Biology, Southeast Meeting, Marineland, FL
“Loss of *RhoA* in urethral epithelium disrupts external genital development”

Spring 2016, College of Medicine Celebration of Research, University of Florida
“Loss of *RhoA* in urethral epithelium disrupts external genital development”

Fall 2015, Florida Genetics Symposium, University of Florida
“Loss of *RhoA* in urethral epithelium disrupts external genital development”

Spring 2014, Society for Developmental Biology, Southeast Meeting, Pine Mountain, GA
“A 3D Atlas of Limb Musculoskeletal Morphogenesis in Mouse”

Spring 2013, Society for Developmental Biology, Southwest Meeting, Salt Lake City, UT
“A 3D Atlas of Limb Musculoskeletal Morphogenesis in Mouse”

Fall 2012, SCI X, Scientific Computing and Imaging Institute, University of Utah, Salt Lake City, UT
“A Story of Reanimating an Embryonic Mouse Limb”

Fall 2012, University of Utah Human Genetics Department Retreat, Deer Valley, UT
“A 3D Atlas of Limb Musculoskeletal Morphogenesis in Mouse”

Fall 2012, University of Utah Bioscience Symposium, Salt Lake City, UT
“A 3D Atlas of Limb Musculoskeletal Morphogenesis in Mouse”

Summer 2012, 12th Conference on Limb Development and Regeneration, Mont-Tremblant, Quebec. “A 3D Atlas of Limb Musculoskeletal Morphogenesis in Mouse” *Poster Award*

Fall 2011, University of Utah Human Genetics Department Retreat, Deer Valley, UT
“3D reconstruction of embryonic mouse limb musculoskeletal morphogenesis via immunofluorescent confocal microscopy”

OTHER MEETING PARTICIPATION

Congenital Anomalies of the External Genitalia Workshop

May 2018, Workshop co-hosted by AUA and NIH NIDDK, held at American Urological Association, Linthicum, MD

Florida Urological Society Meeting

September 2018, Wesley Chapel, FL