**Jess D. Bills – Curriculum Vitae**

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**Education and Training:**

2019 – 2024: Doctor of Philosophy (Ph.D.), Cellular, Molecular, and Developmental Biology

Mentor: Dr. Ann C. Morris, the University of Kentucky

Project: Retinal regeneration in Spiny mouse

2013 - 2015: Master of Science (M.S.), Biology/Biotechnology

The University of Texas at Dallas, TX

2006 - 2010: Bachelor of Science (B.S.), Biology

Texas Woman’s University, TX

**Previous Positions / Research Experience:**

2018—2019: Research Technician Senior/Lab Manager

PI: Ann Morris, Ph.D., University of Kentucky, KY

Vertebrate retinal development and regeneration

2015—2017: Research Scientist

CEO: Richard Vogel, DermaGenesis LLC, Pompano Beach, FL

Wound healing and regeneration; collagen skin matrix production for advanced wound healing

2012—2015*:* Research Study Coordinator

PI: Kathryn Davis, Ph.D., UT Southwestern Medical Center, Dallas, TX

Wound healing and reconstructive surgery outcome improvement.

2011—2012: Research Technician II

PI: Deborah Clegg, Ph.D., UT Southwestern Medical Center, Dallas, TX

The role of estrogen in metabolism homeostasis

2009—2010: Undergraduate Research Assistant

PI: Heather Conrad-Webb, Ph.D., Texas Woman's University, Denton, TX

The role of glutamine synthetase in yeast metabolism

2005-2011: Certified Pharmacy Technician

Walgreens Pharmacy

Prescription compounding and filling, customer service

**Fellowships, Awards and Advanced Education Courses:**

2024: ARVO Foundation Travel Award, Association for Research in Vision and

Ophthalmology Conference

2023: Ribble Pilot Grant – University

2023: Morgan Fellowship – University of Kentucky

2022: Ribble Pilot Grant – University of Kentucky 2020—2025: National Science Foundation Graduate Research Fellow

2021: Knights Templar Eye Foundation Travel Award, Association for Research in Vision and

Ophthalmology Conference

2020: Ribble Pilot Grant – University of Kentucky

2019: George Scherr Graduate Fellowship for Excellence in Research in Biology

2019: Gertrude Flora Ribble Research Fellowship

2019: Marine Biological Laboratory - Frontiers in Stem Cell and Regeneration Financial Aid Award

2019: Frontiers in Stem Cell and Regeneration Advanced training course, Marine Biological

Laboratory, Woods Hole, Massachusetts

**Publications:**

1. **Jessica D. Bills**, Ashley W. Seifert and Ann C. Morris. 2024. “Retinal Neuroanatomy of Two Emerging Model Organisms, the Spiny Mouse (*Acomys Dimidiatus*) and the Mongolian Gerbil (*Meriones Unguiculatus*).” *Experimental Eye Research*. https://www.biorxiv.org/content/10.1101/2024.01.17.576137v1
2. Krueger, Laura A., **Jessica D. Bills**, Zun Yi Lim, Jennifer M. Skidmore, Donna M. Martin, and Ann C. Morris. 2023. “Chromatin Remodeler Chd7 Regulates Photoreceptor Development and Outer Segment Length.” *Experimental Eye Research* 226 (January): 109299.
3. Davis, Kathryn E., **Jessica Bills**, Debby Noble, Peter A. Crisologo, and Lawrence A. Lavery. 2021. “Ultraviolet-A Light and Negative Pressure Wound Therapy to Accelerate Wound Healing and Reduce Bacterial Proliferation.” *Journal of the American Podiatric Medical Association*, July. https://doi.org/10.7547/20-251.
4. Coomer, Cagney E., Stephen G. Wilson, Kayla F. Titialii-Torres, **Jessica D. Bills**, Laura A. Krueger, Rebecca A. Petersen, Evelyn M. Turnbaugh, Eden L. Janesch, and Ann C. Morris. 2020. “Her9/Hes4 Is Required for Retinal Photoreceptor Development, Maintenance, and Survival.” *Scientific Reports* 10 (1): 11316.
5. **Bills, Jessica D**., Sandra J. Berriman, Debby L. Noble, Lawrence A. Lavery, and Kathryn E. Davis. 2016. “Pilot Study to Evaluate a Novel Three-Dimensional Wound Measurement Device.” *International Wound Journal* 13 (6): 1372–77.
6. Constantine, Ryan S., **Jessica D. Bills**, Lawrence A. Lavery, and Kathryn E. Davis. 2016. “Validation of a Laser-Assisted Wound Measurement Device in a Wound Healing Model.” *International Wound Journal* 13 (5): 614–18.
7. **Bills, Jessica D**., Christopher Derderian, Jenny Barker, Alysia Lowe, Lawrence A. Lavery, and Kathryn E. Davis. 2015. “The Role of Estrogen in the Modulation of Autologous Fat Graft Outcomes.” *Plastic and Reconstructive Surgery* 135 (1): 103e – 113e.
8. Lowe, A., **Jessica Bills**, R. Verma, L. Lavery, K. Davis, and K. J. Balkus Jr. 2015. “Electrospun Nitric Oxide Releasing Bandage with Enhanced Wound Healing.” *Acta Biomaterialia* 13 (February): 121–30.
9. Barker, Jenny C., Adam D. Barker, **Jessica Bills**, Jiying Huang, Mary Wight-Carter, Imelda Delgado, Debby L. Noble, Lily J. Huang, Matthew H. Porteus, and Kathryn E. Davis. 2014. “Genome Editing of Mouse Fibroblasts by Homologous Recombination for Sustained Secretion of PDGF-B and Augmentation of Wound Healing.” *Plastic and Reconstructive Surgery* 134 (3): 389e – 401e.
10. Davis, Kathryn E., Fadi C. Constantine, Elaine C. Macaslan, **Jessica D. Bills**, Debby L. Noble, and Lawrence A. Lavery. 2013. “Validation of a Laser-Assisted Wound Measurement Device for Measuring Wound Volume.” *Journal of Diabetes Science and Technology* 7 (5): 1161–66.
11. Davis, Kathryn E., Javier Lafontaine, **Jessica Bills**, Deborah Noble, Mary Wight-Carter, Georgette Oni, Rod J. Rohrich, and Lawrence A. Lavery. 2013. “The Comparison of Two Negative-Pressure Wound Therapy Systems in a Porcine Model of Wound Healing.” *Wound Repair and Regeneration: Official Publication of the Wound Healing Society [and] the European Tissue Repair Society* 21 (5): 740–45.
12. Davis, Kathryn E., Michael D Neinast, Kai Sun, William M Skiles, **Jessica D Bills**, Jordan A Zehr, Daniel Zeve, et al. 2013. “The Sexually Dimorphic Role of Adipose and Adipocyte Estrogen Receptors in Modulating Adipose Tissue Expansion, Inflammation, and Fibrosis.” *Molecular Metabolism* 2 (3): 227–42.
13. Davis, Kathryn, Yvonne Rasko, Georgette Oni, **Jessica Bills**, Palmyra Geissler, and Jeffrey M. Kenkel. 2013. “Comparison of Adipocyte Viability and Fat Graft Survival in an Animal Model Using a New Tissue Liquefaction Liposuction Device vs Standard Coleman Method for Harvesting.” *Aesthetic Surgery Journal / the American Society for Aesthetic Plastic Surgery* 33 (8): 1175–85.
14. Davis, Kathryn, **Jessica Bills**, Jenny Barker, Paul Kim, and Lawrence Lavery. 2013. “Simultaneous Irrigation and Negative Pressure Wound Therapy Enhances Wound Healing and Reduces Wound Bioburden in a Porcine Model.” *Wound Repair and Regeneration: Official Publication of the Wound Healing Society [and] the European Tissue Repair Society* 21 (6): 869–75.

**Patents:**

1. Matrix Production Carrier. United Stated Patent. Application number 15/469,629. Publication date Sept. 28, 2017.
2. Bioengineered regenerative graft matrix and methods for making thereof. United States Patent. Application number 15/631,628. Publication Date Dec. 28, 2017.
3. Matrix Construction. United States Patent. Application number 15/631,530. Publication date Dec. 28, 2017.
4. Methods of producing extracellular matrix useable in breast implant and other matrix production. Application number 15/902,270. Filing date Feb. 22, 2018.

**Presentations and Posters**:

2024: **Jess D. Bills**, Dara Buendia, Ashley Seifert and Ann C. Morris. “The pro-regenerative

response to retinal injury in spiny mice: absence of reactive gliosis paired with microglial and Müller glial proliferation.” Oral Presentation at the Association for Research in Vision and Ophthalmology Conference.

2023: **Jess D. Bills** and Ann C. Morris. “Spiny mice display a pro-regenerative response to acute retinal damage”. Poster Presentation at the Association for Research in Vision and Ophthalmology Conference.

2022: **Jess D. Bills** and Ann C. Morris. “All eyes on the spiny mouse: Retinal cell type atlas and response to retinal damage in *Acomys cahirinus”.* Invited speaker, slide presentation at the Gordon Research Conference for Vision System Development.

2022: **Jess D. Bills** and Ann C. Morris. “All eyes on the spiny mouse: Retinal cell type atlas and response to retinal damage in *Acomys cahirinus”.* Poster Presentation at the Gordon Research Conference for Vision System Development.

2021: **Jess D. Bills** and Ann C. Morris. “Characterization of retinal cell types in the African Spiny mouse (*Acomys cahirinus)”.* Poster presentation at the Association for Research in Vision and Ophthalmology Annual Meeting

2021: **Jess. D. Bills** and Ann C. Morris.All eyes on the spiny mouse: “Retinal cell type atlas and response to retinal damage in *Acomys cahirinus”.* Poster Presentation at the Society of Developmental Biology Annual Meeting.

2020: **Jess D. Bills** and Ann C. Morris. “Characterization of retinal cell types in the Cairo spiny mouse (*Acomys cahirinus)”.* Poster Presentation at the Society for Developmental Biology Annual Meeting.

**Teaching / Mentoring Experience:**

Spring 2024: Teaching Assistant – University of Kentucky

Biology 304 Genetics Laboratory: Instructed over 50 students in a wet lab setting learning basic genetic techniques.

2022-current: S-STEM Graduate Mentor

Providing mentorship for undergraduate students awarded the S-STEM NSF scholarship for STEM majors at the University of Kentucky

2021-current: Graduate Mentor for Undergraduate Researchers

2021-2022: Noah Jones, UKY Chemistry/Biology Major

2022: Amy Ngo, UKY Biology Major

2022-2023: Ben Heckman, UKY Biology Major

2019-2020: Teaching Assistant – University of Kentucky

Biology 155 Laboratory: Instructed over 70 students in a dry lab learning scientific methods and basic scientific skills.

Biology 304 Genetics Laboratory: Instructed over 50 students in a wet lab setting learning basic genetic techniques.

2017-2019: Substitute Teacher **-** Lorena ISD, Lorena, TX

6th grade sciencelong-term substitute

5th and 6th grade history

Special education

2013-2015**:** University of Texas Southwestern Medical Center, Dallas, TX

Basic Laboratory Skills Class for all incoming medical/undergraduate/graduate students

Basic Suture class

2004-2005: Teaching Assistant - Tarleton State University, Stephenville, TX Chemistry 101 Lecture/Lab: Instructed over 60 students in both lecture-based learning and introduction to chemistry lab techniques.

**Department / University Service:**

2022-2024: NSF S-STEM Mentor

2021-2022: RTS Faculty Search Committee Member

2020-2022: UK Biology Diversity, Equity, and Inclusion Committee Member

2020-2021: President - UK Biology Graduate Student Association

2020: Vice President - UK Biology Graduate Student Association 2019-2020: Treasurer - UK Biology Graduate Student Association

**Outreach / Community Work:**

2024: Judge: Kentucky Middle School State Science Fair

2019-2021: Volunteer – NERD Squad Science outreach

2019: Science Olympiad

Volunteer/Grader/Test Writer

2019: Expanding Your Horizons

Group Mentor – Biology/Neuroscience

2019: Science Night at Coventry Oak Elementary School, Volunteer

2018: Sts. Peter and Paul School Science Fair Judge

2018-2024: Volunteer -Lexington Humane Society