Dr. Shauna M. McGillivray

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ACADEMIC BACKGROUND

EDUCATION

1999, B.A., *magna cum laude*
Concordia College, Moorhead, MN
Majors: Biology Honors, Chemistry and German

2006, Ph.D. in Biomedical Science
University of California, San Diego, La Jolla, CA

TCU APPOINTMENTS AND RANK

2009-2015 Assistant Professor of Biology, Texas Christian University
2015-2022 Associate Professor of Biology, Texas Christian University
2022-present Professor of Biology, Texas Christian University

ADMINISTRATIVE APPOINTMENTS

2013- present Associate Director of the TCU Pre-Health Professions Institute
2022- 2024 Associate Chair, Biology Department, TCU

PREVIOUS TEACHING AND RESEARCH APPOINTMENTS

2006-2009 Postdoctoral Research Fellow, University of San Diego, CA
Summer 2008 Adjunct Instructor, San Diego State University

TEACHING RESPONSIBILITIES

CURRENT COURSES

BIOL 30304: Microbiology (2010-present)
BIOL 40300: Teaching of Biology (2010-present)
BIOL 40900: Independent Research in Biology (2011-present)
BIOL 40803: Biological Research and Writing (2012-present)
BIOL 40033: Seniors Honors Research (2011-present)
BIOL 40110: Topics in Medicine: Becoming a great applicant (2023-present)
BIOL 40911: Discussions in Biological Research (2023-present)
BIOL 60133: Intro to Scientific Communication* (2023-present)
BIOL 60220: Skills & Techniques in Biology: Intro to Literature (2023-present)
BIOL 60320: Graduate Research in Biology (2024-present)

PAST COURSES

BIOL 10504: Introductory Biology I* (2012-2013)
BIOL 30603: Cell, Molecular and Developmental Biology* (2012-2022)
BIOL 40303/60403: Medical Microbiology (2010-2019)
BIOL 40623/60263: Immunobiology of Disease* (2020-2022)

BIOL 40021/60011: Introduction to Research in the Biological Sciences* (2010-2013)
BIOL 70980/70990: Thesis (2012-2024)

** Denotes team-taught course*

STUDENT MENTORING

M.S. Theses Directed

1. Chris Evans. 2013. Role of the ClpXP protease in the Structure/Composition of the Cell Wall of *Bacillus anthracis*.

2. Elizabeth Franks. 2013. Role of the Tellurium Resistance Genes in the Pathogenesis of *Bacillus anthracis*.

3. Yueyang Huang. 2015. Investigating tmRNA and SmpB as Antibiotic Targets for Methicillin-Resistant Staphylococcus aureus

4. Kevin Claunch. 2016. Role of LrgAB and the ClpXP Protease in Antibiotic Resistance and Autolysis in Gram-Positive Pathogens.

5. Jacob Malmquist. 2018. Development and Use Of A *G. Mellonella* Infection Model to Discover Novel Virulence Mutants in *B. Anthracis.*

6. Lang Zou. 2020. Investigation of ClpX mediated antibiotic resistance in *B. anthracis*: Independent player or part of the ClpXP protease?

7. Vuong Do. 2022. The role of the Clp system in the *B. anthracis* stress response.

8. Kyle Gallegos. 2023. Investigation of novel genes involved in iron acquisition in *Bacillus anthracis*.

9. Salina Hona. 2023. Investigation of SigM pathway in antibiotic resistance.

10. Alex Caron. 2024. Mechanisms of zinc oxide toxicity in *Staphylococcus aureus*.

PhD Students Directed

1. Aeron Pennington
2. Adewale Adewole

Service on Graduate Committees

1. Lily Wu, MS, TCU, 2013
2. Mason Yockey, MS, TCU, 2013
3. Zahidul Alam, Ph.D., UT-Arlington 2015
4. Raghavendra Swamy Sreeperumbuduru, MS, TCU 2015
5. Morgan Thompson, MS, TCU 2017
6. Lynsey Malin, MS, TCU 2020
7. John Reeks, PhD, TCU 2021
8. Dustin Johnson, MS, TCU 2022
9. Chrissy Baker, MS, TCU 2024
10. Stephanie Wallace, PhD, TCU 2025

11. Dustin Johnson, PhD, TCU 2025
12. John Brannon, MS, TCU 2025
13. Megan McCann, MS, TCU in progress
14. John Brannon, PhD, TCU in progress

Undergraduate Theses Directed or Co-Directed

1. Sarah Flanigan. 2011. Departmental Honors. Investigation of the role of the ClpXP protease in the Cell Wall Composition of Bacillus anthracis.

2. Renee Rosati. 2012. Departmental Honors. The role of ClpX in Bacillus anthracis cell charge.

3. Julio Manceras. 2012. McNair Program. Discovery of novel iron acquisition genes.

4. Vanessa Norris. 2013. Departmental Honors. Environmental Stress Potentiates the Infectivity of Bacillus anthracis in Caenorhabditis elegans. Co-directed with Dr. Phil Hartman.

5. Kevin Claunch. 2014. Departmental Honors. Connection of the ClpXP protease to autolytic activity and antibiotic resistance in Bacillus anthracis.

6. Madison Rogan. 2015. Departmental Honors. Discovery of novel virulence mutants by assessing hydrogen peroxide sensitivity in Bacillus anthracis.

7. Candler Boortz. 2016. Departmental Honors. YwlE and the regulation of the oxidative stress response in Bacillus anthracis.

8. Quynh Ngo. 2016. Departmental Honors. Investigating the connection between the ClpXP protease and FtsZ in antimicrobial peptide resistance in Bacillus anthracis.

9. Lauren Callaghan. 2020. Departmental Honors. Discovering novel genes that allow *Bacillus anthracis* to survive host defenses.

10. Graham Ellis. 2020. Departmental Honors. The role of SigM and GlpF on cell wall active antibiotic susceptibility in *Bacillus anthracis* Sterne.

11. Taylor Kelly. 2020. Departmental Honors. Discovering novel genes important for survival against reactive oxygen species in *Bacillus anthracis.*

12. Gabrielle Griffin. 2020. McNair Program. Discovery of novel genes in *Bacillus anthracis* important for surviving reactive oxygen species

13. Iman Ali. 2021. Departmental Honors. Mechanisms of zinc oxide toxicity.

14. Lauren Klingemann. 2022. Departmental Honors. Characterization of a putative BNR repeat domain protein in the virulence of Bacillus anthracis.

15. Bella Kouretas. 2022. Departmental Honors. Investigation of glycosyl-like 2 transferase family protein and its role in Bacillus anthracis virulence.

16. Trevon Jelinek. 2022. Departmental Honors. Synthesis, Characterization and Biological Assessment of a Macrocycle Containing Lysine. Co-directed with Eric Simanek.

17. Alex Caron. 2022. Departmental Honors. Characterization of antibacterial mechanisms of zinc oxide in Staphylococcus aureus.

18. Luke Hamilton. 2023. Departmental Honors. Identifying novel mutants with increased susceptibility to H_2O_2 and reduced virulence in *Bacillus anthracis*.

19. Abi Plylar.2024. Departmental Honors. Characterization of potential H_2O_2 resistance genes in *B. anthracis* Sterne.

20. Sheridan O'Coyne. 2024. Departmental Honors. Evaluation of ClpX pharmacological inhibitors.

Undergraduate Students Mentored in Research

1. Danae Spencer	2. Gina Tirbeni	3. Sarah Flanigan	4. Micah Vaughn[1]
5. Elizabeth Franks	6. Renee Rosati[2]	7. Julia Manceras[2,3]	8. Vanessa Norris[3]
9. Jessica Learned	10. Mariah Green	11. Kevin Claunch[2,3]	12. Madison Rogan[1,2]
13. Candler Boortz	14. Quynh Ngo[1-3]	15. Madeline Bush[1-3]	16. Esther Pae
17. Blake Williams	18. Sam Baugh[1,2]	19. Quinn Losefsky[1-3]	20. Taylor Kelly
21. Lauren Callaghan[1]	22. Graham Ellis	23. Toby Do	24. Gabrielle Griffin
25. Iman Ali[1,2]	26. Lauren Klingemann[2]	27. Bella Kouretas[2,3]	28. Trevon Jelinek
29. Alex Caron[1-3]	30. Luke Hamilton[2,3]	31. Victoria Adelke[2,3]	32. Lilly Wilson[2,3]
33. Zach Rouseau	34. Abi Plylar[2]	35. Kelsey Waite[2,3]	36. Michael Delgado[1-3]
37. Sheridan O'Coyne[2,3]	38. Jessica Guilhas[2,3]	39. Sophie Cronk	40. May Arauz[2]
41. Braden Chadwick[2,3]	42. Gracie Miroballi	43. Josey Austin[2]	44. Katherine Lesslie
45. Louise Hutchinson	46. Katherine Richey	47. Cassidy Hunter	48. Sophie Degrand
49. Farhan Kakish	50. Andrew Bare		

[1]coauthor on publication; [2]presented at external conference; [3]presentation award

Service on Undergraduate Honors Theses Committees

1. Thomas Parnell, 2014	2. Manoj Chelvanambi, 2015	3. Hailey Hayes, 2015
4. Michael Zeiser, 2015	5. Cornelius Canon, 2015	6. Emily Corrigan, 2019
7. Katherine Neely, 2019	8. Misty Self, 2019	9. Haley Schluterman, 2021
10. Kahler Doyle, 2022	11. Kyle Horton, 2022	12. Remington Crossnoe, 2022
13. Morgan Bussard, 2022	14. Jacob Wortley, 2023	

RESEARCH AND CREATIVTY ACTIVITY

REFEREED PUBLICATIONS

denotes TCU undergraduate student, *denotes TCU graduate student

1. Aho E.L., A.M. Keating, and **S.M McGillivray**, 2000, A comparative analysis of pilin genes from pathogenic and nonpathogenic *Neisseria* species, *Microbiol Pathogenesis*, v. 28, p. 81-88. https://doi.org/10.1006/mpat.1999.0325

2. Jacobs S.B.R, D. Coss, **S.M. McGillivray**, and P.L. Mellon, 2003, Nuclear factor Y and steroidogenic factor 1 physically and functionally interact to contribute to cell-specific expression of the mouse FSHβ gene, *Molecular Endocrinology,* v. 8, p.1470-83. https://doi.org/10.1210/me.2002-0286

3. Bailey J.S., N. Rave-Harel, **S.M. McGillivray**, D. Coss and P.L. Mellon, 2004, Activin regulation of the follicle-stimulating hormone β-subunit gene involves Smads and the TALE homeodomain proteins Pbx1 and Prep1, *Molecular Endocrinology,* v.18, p. 1158-70. https://doi.org/10.1210/me.2003-0442

4. **McGillivray S.M.,** J.S. Bailey, R. Ramezani, B.J. Kirkwood, and P.L. Mellon, 2005, Mouse GnRH receptor gene expression is mediated by the LHX3 homeodomain protein, *Endocrinology, v.*146, p. 2180-2185. https://doi.org/10.1210/en.2004-1566

5. Thackray V.G., **S.M. McGillivray,** and P.L. Mellon, 2006, Androgens, progestins and glucocorticoid steroid induce follicle stimulating hormone β-subunit gene expression at the level of the gonadotrope. *Molecular Endocrinology,* v. 20, p. 2062-79. https://doi.org/10.1210/me.2005-0316

6. **McGillivray S.M.**, V.G. Thackray, D. Coss D, and P.L. Mellon PL, 2006, Activin and glucocorticoids synergistically activate follicle-stimulating hormone β-subunit gene expression in the immortalized LβT2 gonadotrope cell line. *Endocrinology,* v. 148, p. 762-73. https://doi.org/10.1210/en.2006-0952

7. Hsu, L.C., R. Ali**, S. McGillivray**, P.H. Tseng, S. Mariathasan, E. Humke, L. Eckmann, J. Powell, V. Nizet, V. Dixit, M. Karin, 2008, A NOD2-NALP1 complex mediates caspase-1 dependent IL-1β secretion in response to *Bacillus anthracis* infection and muramyl dipeptide*, Proc Natl Acad Sci USA*, v. 105, p. 7803-7808. https://doi.org/10.1073/pnas.0802726105

8. Van Sorge, N.M., C.M. Ebrahimi, **S.M. McGillivray**, D. Quach, M. Sabet, D.G. Guiney, K.S. Doran, 2008, Anthrax toxins inhibit neutrophil signaling pathways in brain endothelium and contribute to the pathogenesis of meningitis, *PLoS ONE*, v. 3, e2964. https://doi.org/10.1371/journal.pone.0002964

9. **McGillivray, S.M.,** C. Ebrahimi, N. Fisher, M. Sabet, D.X. Zhang, Y. Chen, N.M. Haste, R. Aroian, R.L. Gallo, D.G. Guiney, A.M. Friedlander, T.M. Koehler, and V. Nizet, 2009, ClpX protease contributes to antimicrobial peptide resistance and virulence phenotypes of *Bacillus anthracis, Journal of Innate Immunity,* v. 1, p. 494-506. https://doi.org/10.1159/000225955

10. Rooijackers, S.H., S.L. Rasmussen, **S.M. McGillivray**, T.B. Bartnikas, A.B. Mason, A.M. Friedlander, and V. Nizet, 2010, Human transferrin confers serum resistance against *Bacillus anthracis*, *Journal of Biological Chemistry,* v. 285, p. 27609-13. https://doi.org/10.1074/jbc.M110.154930

11. Guichard, A., **S.M. McGillivray,** M. Beatriz-Cruz, N. van Sorge, V. Nizet, and E. Bier, 2010, Anthrax toxins cooperatively inhibit endocytic recyling by the Rab11/Sec15 exocyst, *Nature*, v. 467, p. 854-8. https://doi.org/10.1038/nature09446

12. Kisseleva, T., M. Köckritz-Blickwede, D. Reichart, **S.M. McGillvray**, G. Wingender, M. Ronenberg, C.K. Glass, V. Nizet, and D.A. Brenner, 2011, Fibrocyte-like cells recruited to the spleen support innate and adaptive immune responses to acute injury or infection, *Journal of Molecular Medicine*, v. 89, p. 997-1013. https://doi.org/10.1007/s00109-011-0756-0

13. Yang, H., C. Sikavi, K. Tran, **S.M. McGillivray**, V. Nizet, M. Yung, A. Chang, and J.H. Miller, 2011, Papillation in *Bacillus anthracis* colonies: a tool for finding new mutators, *Molecular Microbiology*, v. 79, p. 1276-93. https://doi.org/10.1111/j.1365-2958.2011.07519.x

14. Kho, M.F., A. Bellier, V. Balasubramani, Y. Hu, W. Hsu, C. Nielsen-Leroux, **S. M. McGillivray**, V. Nizet, and R. V. Aroian, 2011, The pore-forming protein Cry5B elicits the pathogenicity of *Bacillus sp.* against *Caenorhabditis elegans, PloS One*, v. 6, e29122. https://doi.org/10.1371/journal.pone.0029122

15. **McGillivray, S.M.,** D.N. Tran, N.S. Ramadoss, J.N. Alumasa, C.Y. Okumura, G. Sakoulas, M.M Vaughn**, D.X. Zhang, K.C. Keiler, and V. Nizet, 2012, Pharmacological inhibition of the ClpXP protease increases bacterial susceptibility to host cathelicidin antimicrobial peptides and cell-envelope active antibiotics, *Antimicrobial Agents and Chemotherapy*, v. 56, p. 1854-61. https://doi.org/10.1128/AAC.05131-11

16. Franks, S.E.*, C. Ebrahimi, A. Hollands, C.Y. Okumura, R.V. Aroian, V. Nizet, and **S.M. McGillivray**, 2014, A novel role for tellurium resistance genes in the pathogenesis of *Bacillus anthracis*, *Infection and Immunity*, v. 82, p. 1132-40. https://doi.org/10.1128/IAI.01614-13

17. Sreeperumbuduru, R.S.*, Z.M. Abid, K.M. Claunch*, H.H. Chen, **S.M. McGillivray** and E.E. Simanek, 2016, Synthesis and antimicrobial activity of triazine dendrimers with DABCO groups, *RSC advances*, v. 6, p. 8806-8810. https://doi.org/10.1039/C5RA10388F

18. Claunch, K.C.*, M. Bush**, C.R. Evans*, J.A. Malmquist*, M.C. Hale and **S.M. McGillivray**, 2018, Transcriptional profiling of the *clpX* mutant in *Bacillus anthracis* reveals regulatory connection with the *lrgAB* operon**,** *Microbiology,* v. 164, p. 659-669. https://doi.org/10.1099/mic.0.000628

19. Huang, Y.*, J.N. Alumasa, L.T. Callaghan**, R.S. Baugh**, C.D. Rae, K.C. Keiler and **S.M. McGillivray**, 2019, A small molecule inhibitor of trans-translation synergistically interacts with cathelicidin antimicrobial peptides to impair survival of *Staphylococcus aureus*, *Antimicrobial Agents and Chemotherapy*, v. 63, p. e02362-18. https://doi.org/10.1128/AAC.02362-18

20. Malmquist, J.A.*, M.R. Rogan**, and **S.M. McGillivray**, 2019, *Galleria mellonella* as an infection model for *Bacillus anthracis* Sterne. Front. Cell. Infect. Microbiol. v. 9. https://doi.org/10.3389/fcimb.2019.00360

21. Reeks, J.M.*, I. Ali**, W.J. Moss, E. Davis, **S.M. McGillivray**, and Y.M. Strzhemechny, 2021, Microscale ZnO with controllable crystal morphology as a platform to study antibacterial action on *Staphylococcus aureus*. Biointerphases, v. 16, 031003. https://doi.org/10.1116/6.0000957

22. Zou, L.*, C.R. Evans*, V.D. Do*,Q.P. Losefsky**, D.Q. Ngo**, and **S.M. McGillivray**, 2021, Loss of the ClpXP protease leads to decreased resistance to cell-envelope targeting antimicrobials in *Bacillus anthracis* Sterne. Frontiers in Microbiology, v. 12, 2247. https:/C/doi.org/10.3389/fmicb.2021.719548

23. Johnson, D.*, J.M. Reeks*, A. Caron**, I. Tzoka, I. Ali**, **S.M. McGillivray**, Y.M. Strzhemechny, 2022, Influence of surface properties and microbial growth media on antibacterial action of ZnO. Coatings, v. 12, 1648. https://doi.org/10.3390/coatings12111648

24. Johnson, D.A.*, J.M. Reeks*, A. J. Caron*, **S.M. McGillivray**, R.J. Wiglusz, Y.M. Strzhemechny, 2023, Surface photovoltage response of ZnO to phosphate-buffered saline solution with and without presence of *Staphylococcus aureus*. Nanomaterials, v. 13, 1652. https://doi.org/10.3390/nano13101652.

25. Caron, A.J.*, I.J. Ali**, M.J. Delgado**, D. Johnson*, J.M. Reeks*, Y.M. Strzhemechny, and **S.M. McGillivray**, 2024, Zinc oxide nanoparticles mediate bacterial toxicity in Mueller-Hinton Broth via Zn^{2+}. Frontiers in Microbiology, v. 15, 1394078. https://doi.org/10.3389/fmicb.2024.1394078

EXTERNAL GRANT PROPOSALS

Pending

1. Mechanism of dUTPase-mediated iron acquisition from hemoglobin in *Bacillus anthracis*. NIH R15. Amount requested $484,188 (total cost). Submitted June 2025.

Funded External Grant Proposals

Validation of *trans*-translation as a target for antibiotic development in *S. aureus.* NIH R21/R33, Ken Keiler (Pennsylvania State University) primary investigator. $64,000 subaward to S. McGillivray. 2014-2016

Not Funded External Grant Proposals

1. REU Site: Exposing undergraduates to science through research in ecology and conservation biology or cellular and molecular biology. National Science Foundation. M. Chumchal and M. Chumley- Co-PIs (A. Akkaraju, R. Drenner, A. Hale, P. Hartman, J. Horner, S. McGillivray, M. Misamore, D. Williams – Senior Personnel) Amount Requested: $203,200 ($7257 to S. McGillivray) Submitted: August 2010

2. Role of the ClpXP protease in maintenance of the bacterial cell wall. Norman Hackerman Advanced Research Program (full proposal). S. McGillivray PI. Amount requested: $74,700. Submitted: December 2011.

3. Role of the ClpXP protease in bacterial resistance to cell-wall targeting antimicrobial agents. Norman Hackerman Advanced Research Program (pre-proposal). S. McGillivray PI. Amount Requested: $70,000. Submitted: September 2013.

4. Effective strategies to enhance learning for students in multiple STEM disciplines: Evaluating learning during inductive classification and predictive inference making. NSF. Tauber, U PI. S. McGillivray, consultant. Amount requested: $20,636 to S. McGillivray. Submitted: 2015.

5. Role of the ClpXP protease in cell division and antimicrobial resistance. NIH R15. Amount requested $299,964. Submitted June 2017.

6. Synthesis of Dehydroquinate Synthase Inhibitors and Evaluation as Antibacterial Agents. NIH R15. Co-PI with Jean-Luc Montchamp. Amount requested $404,412 ($167,924 to S. McGillivray). Submitted October 2023.

7. Synthesis of Dehydroquinate Synthase Inhibitors and Evaluation as Antibacterial Agents. NIH R15. Co-PI with Jean-Luc Montchamp. Amount requested $404,473 ($167,985 to S. McGillivray). Submitted October 2024.

INTERNAL GRANT PROPOSALS

Funded Faculty Grants Awarded to S. McGillivray

1. Increasing bacterial susceptibility to antimicrobial compounds*.* TCU Research and Creative Activities Fund and Junior Faculty Summer Research Program, $10,000, 2010-2011.

2. Role of the bacterial protease, ClpXP, in maintaining the bacterial cell envelope*.* TCU Research and Creative Activities Fund and Junior Faculty Summer Research Program, $10,000, 2011-2012.

3. Role of the tellurium resistance genes in the pathogenesis of *Bacillus anthracis*. TCU Research and Creative Activities Fund, $4,000, 2012-2013.

4. Connection between autolytic activity and antibiotic sensitivity in *Bacillus anthracis*. TCU Research and Creative Activities Fund, $4,000, 2013-2014.

5. Role of the ClpXP protease in antibiotic resistance in *Staphylococcus aureus*. TCU Research and Creative Activities Fund, $4,000, 2016-2017.

6. Validation of SmpB as a potential antibiotic target in *Staphylococcus aureus*. TCU Research and Creative Activities Fund, $4,500, 2017-2018.

7. Development of the wax worm *Galleria mellonella* as an *in vivo* infection model for *Bacillus anthracis* Sterne, TCU Research and Creative Activities Fund, $4,500, 2018-2019.

8. Zinc oxide as an antibiotic: Understanding the mechanisms behind its toxicity. TCU Research and Creative Activities Fund, $6,000, 2020-2021.

9. Characterization of novel genes involved in iron acquisition from hemoglobin. TCU Research and Creative Activities Fund, $6,000, 2024-2025.

Funded Student Grants (used to support research projects in S. McGillivray's lab)

1. Investigation of cell charge in *Bacillus anthracis* and its role in antimicrobial defense. Student Government Association Award to Renee Rosati. Funded $400. 2012-2013.

2. Discovery of novel iron acquisition genes in *Bacillus anthracis*. Student Government Association Award to Julio Manceras. Funded $400. 2012-2013.

3. Role of LrgAB in susceptibility to antibiotics and antimicrobial peptides in *Bacillus anthracis.* SERC Undergraduate Research Grant to Kevin Claunch, $1500, 2012-2013

4. Inability of mutant *Bacillus anthracis* to sequester iron from hemoglobin. SERC Undergraduate Research Grant to Mariah Green, $1347, 2013-2014.

5. *Galleria mellonella* as an infection model to study the pathogenesis of *Bacillus anthracis.* SERC Undergraduate Research Grant to Madison Rogan, $1499, 2014-2015.

6. Overexpression of FtsZ in *Bacillus anthracis*. SERC Undergraduate Research Grant to Quynh Ngo, $1494, 2015-2016.

7. Role of ClpX in *S. aureus* antimicrobial virulence and survival. SERC Undergraduate Research Grant to Candler Boortz, $1499, 2015-2016.

8. Role of the ClpXP protease in antibiotic resistance in *S. aureus*. SERC Undergraduate Research Grant to Madeline Bush, $1497, 2016-2017.

9. Role of ClpP1 and ClpP2 in antibiotic resistance in *Bacillus anthracis*. SERC graduate research grant to Lang Zou, $2000, 2019-2020.

10. ClpX mediated in antimicrobial resistance in *B. anthracis*: independent player or part of a larger complex? SERC undergraduate Research Grant to Quinn Losefsky, $1500, 2018-2019

11. ClpX-regulated genes and their effect on antibiotic susceptibility in *Bacillus anthracis*. SERC undergraduate research grant to Graham Ellis, $1495, 2019-2020.

12. Screening *Bacillus anthracis* mutant library for novel virulence genes. SERC undergraduate research grant to Taylor Kelly, $1497, 2019-2020.

13. Discovering new genes that allow *Bacillus anthracis* to survive host defenses. SERC undergraduate research grant to Lauren Callaghan, $1498, 2019-2020

14. Mechanisms of zinc oxide antibacterial activity. SERC undergraduate research grant to Iman Ali, $1227, 2020-2021.

15. The identification and characterization of a potential novel virulence gene in *Bacillus anthracis*. SERC undergraduate research grant to Lauren Klingemann, $1230, 2021-2022.

16. Confirmation and prioritization of potential Bacillus anthracis virulence mutants using the *Galleria Mellonella* model of infection. SERC undergraduate research grant to Bella Kouretas, $1227, 2021-2022.

17. Role of Clp ATPase family members in regulation of stress response in *Bacillus anthracis.* SERC graduate research grant to Vuong Do, $1500, 2021-2022.

18. Role of reactive oxygen species in the mechanisms of zinc oxide nanoparticle killing. SERC undergraduate research grant to Alex Caron, $1485, 2021-2022.

19. Discovering novel *Bacillus anthracis* mutants with increased hydrogen peroxide susceptibility. SERC undergraduate research grant to Victoria Adeleke, $1498, 2021-2022.

20. Characterization of virulence mutants in *Bacillus anthracis*. Pre-health research fellowship to Lillian Wilson, $1667, 2022.
21. Identifying the transposon insertion location in LV1 and LV2, two transposon mutants of *Bacillus anthracis* Sterne. Pre-health research fellowship to Luke Hamilton, $1667, 2022.

22. Characterization of the 11F11 hydrogen susceptible *Bacillus anthracis* mutant. Pre-health research fellowship to Zach Rouseau, $1666, 2022.

23. Characterization of the potential iron-acquisition gene dUTPase in Bacillus anthracis. SERC graduate research grant to Kyle Gallegos, $1949, 2022-2023

24. Role of SigM in virulence and antimicrobial resistance in Bacillus anthracis. SERC graduate research grant to Salina Hona, $1990, 2022-2023

25. Regulatory effects of loss of ClpX on the *glpF* and *msrA* chromosomal genes in *Bacillus anthracis*. SERC undergraduate research grant to Kelsey Waite, $1493, 2022-2023

26. Role of ClpC in regulation of different stress responses in Bacillus anthracis. SERC undergraduate research grant to Lillian Wilson, $1495, 2022-2023.

27. Identifying novel mutants with increased susceptibility to hydrogen peroxide and reduced virulence in Bacillus anthracis Sterne. SERC undergraduate research grant to Luke Hamilton, $1499, 2022-2023.

28. Characterization of Potential H2O2 Resistance Genes in Bacillus anthracis. SERC undergraduate research grant to Abi Plylar, $1496, 2023-2024.

29. Role of the chromosomal gene glpF in penicillin resistance and acid stress response in Bacillus anthracis. SERC undergraduate research grant to Sheridan O'Coyne, $1499, 2023-2024.

30. Evading zinc oxide toxicity: Mechanisms used by zinc oxide resistant strains of Staphylococcus aureus. SERC graduate research grant to Alex Caron, $1995, 2023-2024.

31. Hunting Bacteriophages that target multidrug-resistant Staphylococcus aureus and Enterobacter. SERC undergraduate research grant to May Arauz, $1499, 2023-2024.

32. Characterization of the antibacterial activity of potential ClpX inhibitors in Bacillus anthracis. SERC undergraduate research grant to Braden Chadwick, $1497, 2024-2025

33. Bacteriophage Isolation and Characterization of Novel Bacteriophages Targeting Enterobacter aerogenes and Staphylococcus aureus, SERC undergraduate research grant to Sophie Cronk, $1497, 2024-2025.

34. Investigating the role of MsrB in the antimicrobial tolerance of Bacillus anthracis Sterne, SERC graduate research grant to Aeron Pennington, $1990, 2024-2025

35. Correlating surface-modified Zinc Oxide with its Antimicrobial Effects on *S. aureus,* SERC undergraduate research grant to Louise Hutchinson, $1495, 2025-2026

36. Determining ClpXP Protease Regulation of Spx Paralogs in Bacillus anthracis Sterne, Biology DARE grant to Aeron Pennington, $2000, 2025-2026

37. Determining Penicillin Prodrug Activity in Gram-positive Bacteria, SERC undergraduate research grant to Katherine Richey, $1498, 2025-2026

38. Investigating the Mechanism of dUTPase-1 in Bacillus anthracis Iron Acquisition, SERC undergraduate research grant to Sophie Degrand, $1492, 2025-2026

SELECTED PRESENTATIONS AT SCHOLARY MEETINGS (2009-present)
denotes TCU undergraduate student, *denotes TCU graduate student, presenting individual

1. **McGillivray,S.M**., C.E. Ebrahimi, N. Fisher, Y. Chen, R.L. Gallo, K.C. Keiler, A.M. Friendlander, T.M. Koehler, and V. Nizet, 2009, Role of ClpX in antimicrobial resistance and systemic virulence, The International *Bacillus anthracis*, *B. cereus*, and *B. thuringiensis* Conference, Santa Fe, New Mexico. **Oral Presentation**

2. **McGillivray, S.M.,** D.N. Tran, N.S. Ramadoss, D.X. Zhang, K.C. Keiler, and V. Nizet, 2010, Pharmacological inhibition of the ClpXP protease leads to increased susceptibility to host immune Defense and Antimicrobial Agents, 110th General Meeting for the American Society for Microbiology, San Diego CA. **Poster Presentation**

3. **McGillivray, S.M**, 2010, Role of the ClpXP protease in the virulence of *B. anthracis*, 18th International Microbial Genomes Conference, Lake Arrowhead CA. **Invited Speaker**.

4. Franks, S.E.* and **S.M. McGillivray**, 2011, Investigation of novel virulence factors in *B. anthracis*, 43rd Annual Fall Meeting of the Texas Branch of the American Society for Microbiology, Arlington, TX. **Poster Presentation.**

5. Franks, S.E.*, C. Ebrahimi, E. Couch, R. Aroian, V. Nizet, and **S.M. McGillivray**, 2012, Discovery of novel virulence factors in *Bacillus anthracis*, Texas Society of Microscopy, Fort Worth, TX. **Oral presentation.**

6. Evans, C.R.*, E. Couch, and **S.M. McGillivray**, 2012, Investigation of the cell wall structure of ΔClpX *Bacillus anthracis*, Texas Society of Microscopy, Fort Worth, TX. **Oral presentation.**

7. Franks, S.E.*, C. Ebrahimi, R. Aroian, V. Nizet, and **S.M. McGillivray**, 2012, Investigation of novel virulence factors in *Bacillus anthracis*, 112th General Meeting of the American Society for Microbiology, San Francisco, CA. **Poster presentation.**

8. Evans, C.R.*, S.E. Flanigan**, and **S.M. McGillivray**, 2012, Role of the ClpXP protease in the susceptibility of *Bacillus anthracis* to antimicrobial agents, 112th General Meeting of the American Society for Microbiology, San Francisco, CA. **Poster Presentation.**

9. Manceras, J.** and **S.M. McGillivray**, 2012, Discovery of novel iron acquisition genes in *B. anthracis*, Texas Branch of the American Society of Microbiology, Waco, TX. **Poster presentation.**

10. Evans, C.R.* and **S.M. McGillivray**, 2012, Role of ClpXP protease on *Bacillus anthracis* resistance to cell wall-acting antimicrobials, Texas Branch of the American Society of Microbiology, Waco, TX. **Poster presentation.**

11. Franks, S.E.*, C. Ebrahimi, A. Hollands, C.Y. Okumura, R.V. Aroian, V. Nizet, **S.M. McGillivray**, 2012, The role of tellurium resistance genes in the virulence of *Bacillus anthracis*, Texas Branch of the American Society of Microbiology, Waco, TX. **Oral presentation.**

12. Manceras, J.** and **S.M. McGillivray**, 2012, Discovery of novel iron acquisition genes in *B. anthracis*, North Texas Research Symposium, Fort Worth, TX. **Poster presentation.**

13. Rosati, R.** and **S.M. McGillivray**, 2012, The role of ClpX in *Bacillus anthracis* cell charge, North Texas Research Symposium, Fort Worth, TX. **Poster presentation.**

14. Franks, S.E.*, C. Ebrahimi, A. Hollands, C.Y. Okumura, R.V. Aroian, V. Nizet, and **S.M. McGillivray**, 2012, The role of tellurium resistance genes in the virulence of *Bacillus anthracis*, North Texas Research Symposium, Fort Worth, TX. **Poster presentation.**

15. Evans, C.R.* and **S.M. McGillivray**, 2012, Role of ClpXP protease on *Bacillus anthracis* resistance to cell wall-acting antimicrobials, North Texas Research Symposium, Fort Worth, TX. **Poster presentation.**

16. Evans, C.R.*, E. Couch, and **S.M. McGillivray**, 2013, The effect of media conditions on cell wall thickness and cell division of *Bacillus anthracis* lacking ClpX, Texas Society of Microscopy, Irving, TX. **Oral presentation.**

17. Franks, S.E.*, C. Ebrahimi, A. Hollands, C.Y. Okumura, R.V. Aroian, V. Nizet, and **S.M. McGillivray**, 2013, Use of *Caenorhabditis elegans* to identify a novel role for tellurium resistance genes in the pathogenesis of *Bacillus anthracis*, International Conference on *Bacillus anthracis*, *B. cereus*, and *B. thuringiensis*, Victoria, British Columbia, Canada. **Oral presentation.**

18. Claunch, K.C.** and **S.M. McGillivray**, 2013, Role of LrgAB in antibiotic resistance and autolytic activity in *Bacillus anthracis* and connection to the ClpXP protease, North Texas Research Symposium, Fort Worth, TX. **Poster presentation.**

19. Huang, Y.*, J. Alumasa, K.C. Keiler, **S.M. McGillivray**, 2014, Small molecule inhibition of trans-translation impairs *Staphylococcus aureus* viability, Annual Meeting of the Texas Branch of the American Society of Microbiology, Houston TX. **Poster presentation.**

20. Claunch, K.C.**, C.R. Evans*, and **S.M. McGillivray**, 2014, Connection of the ClpXP protease to autolytic activity and antibiotic resistance in *Bacillus anthracis*, 114th General Meeting of the American Society of Microbiology, Boston, MA. **Poster presentation.**

21. Claunch, K.C.*, C.R. Evans*, and **S.M. McGillivray**, 2015, Connection of the ClpXP protease to antibiotic resistance and autolytic activity in *Bacillus anthracis*, Fall Meeting of the Texas Branch of the American Society of Microbiology, Huntsville TX. **Oral presentation.**

22. Rogan, M.R.** and **S.M. McGillivray**, 2015, Protein tyrosine phosphatase YwlE as a potential regulator of oxidative stress in *Bacillus anthracis*, Texas Branch Spring Meeting of the American Society for Microbiology, New Braunfels, TX. **Poster presentation.**

23. Ngo, Q.** and **S.M. McGillivray**, 2016, Investigating the connection between the ClpXP protease and FtsZ in antimicrobial peptide resistance in *Bacillus anthracis*, Texas Branch Spring Meeting of the American Society for Microbiology, New Braunfels, TX. **Poster presentation.**

24. Bush, M.**, K.M. Claunch*, J. Malmquist*, C.R. Evans*, and **S.M. McGillivray**, 2016, Role of the ClpXP protease in antibiotic resistance in *B. anthracis* and *S. aureus*, Fall Meeting of the Texas Branch of the American Society of Microbiology, Dallas TX. **Poster presentation.**

25. Bush, M.**, K.M. Claunch*, J. Malmquist*, C.R. Evans*, and **S.M. McGillivray**, 2017, Role of the ClpXP protease in antibiotic resistance in *B. anthracis* and *S. aureus*, Spring Meeting of the Texas Branch of the American Society of Microbiology, New Braunfels TX. **Oral presentation.**

26. Malmquist, J.* and **S.M. McGillivray**, 2018, Development and use of a *G. Mellonella* infection model to discover novel virulence mutants in *B. anthracis*, Spring Meeting of the Texas Branch of the American Society of Microbiology, New Braunfels TX. **Oral presentation.**

27. Baugh, R.S.**, J.A. Malmquist*, and **S.M. McGillivray**, 2019, Discovery of novel iron-acquisition gene in *Bacillus anthracis* Sterne. Spring Meeting of the Texas Branch of the American Society of Microbiology, New Braunfels TX. **Poster presentation.**

28. Losefsky, Q** and **S.M. McGillivray**, 2019, Role of ClpX and ClpP in antibiotic resistance in *Bacillus anthracis*, Spring Meeting of the Texas Branch of the American Society of Microbiology, New Braunfels TX. **Poster presentation.**

29. Malmquist, J.A.*, T. N. Kelly**, L.R. Callaghan**, M.R. Rogan**, **S.M. McGillivray**, 2019, Development of *Galleria mellonella* as an infection model for *Bacillus anthracis* Sterne, General Meeting of the American Society of Microbiology, San Francisco CA. **Poster presentation.**

30. Ali, I.**, A. Caron**, J.M. Reeks*, Y.M. Strzhemechny, and **S.M. McGillivray**, 2021, Mechanisms of zinc oxide antibacterial activity in *Staphylococcus aureus*. Heart of Texas Undergraduate Research Conference. Virtual Conference. **Oral presentation.**

31. Caron, A**, I. Ali**, J.M. Reeks*, Y.M. Strzhemechny, and **S.M. McGillivray**, 2022, Characterization of antibacterial mechanisms of zinc oxide in *Staphylococcus aureus*, Spring Meeting of the Texas Branch of the American Society of Microbiology. Virtual Conference. **Oral presentation**.

32. Kouretas, B**., L. Klingemann**, and **S.M. McGillivray**, 2022, Identification of novel virulence genes in *Bacillus anthracis* using invertebrate models of infection. Spring Meeting of the Texas Branch of the American Society of Microbiology. Virtual Conference. **Poster presentation**.

33. Adeleke, V**, L. Hamilton**, and **S. M. McGillivra**y, 2022, Identifying novel genes with increased susceptibility to reactive oxygen species in *Bacillus anthracis* Sterne. Spring Meeting of the Texas Branch of the American Society of Microbiology. Virtual Conference. **Poster presentation**.

34. Do, V.* and **S. M. McGillivray**, 2022, Role of ClpX in regulation of stress responses in *Bacillus anthracis*. Spring Meeting of the Texas Branch of the American Society of Microbiology. Virtual Conference. **Poster presentation**.

35. Caron, A.**, J.M. Reeks*, D. Justin*, I. Ali**, M. Delgado**, Y.M. Strzhemechny, and **S. M. McGillivray**, 2022, Characterization of antibacterial mechanisms of zinc oxide in *Staphylococcus aureus*. Fall Meeting of the Texas Branch of the American Society of Microbiology. Houston TX. **Poster presentation.**

36. Hamilton, L.**, V. Adeleke**, Z. Rouseau**, L. Callaghan**, T. Kelly**, and **S.M. McGillivray**, 2022, Identifying novel mutants with increased susceptibility to H_2O_2 and reduced virulence in *Bacillus anthracis* Sterne. Fall Meeting of the Texas Branch of the American Society of Microbiology. Houston TX. **Poster presentation.**

37. Caron, A.**, I. Ali**, J. Reeks*, D. Johnson*, Y.M Strzhemechny, and **S.M. McGillivray**, 2022, Characterization of antibacterial mechanisms of zinc oxide in *Staphylococcus aureus*. 57th NCHC Annual Conference. Dallas, TX. **Poster presentation.**

38. Delgado, M.**, A. Caron*, and **S. M. McGillivray**. Role of reactive oxygen species formation in the antimicrobial action of zinc oxide, 2023, Spring Meeting of the Texas Branch of the American Society of Microbiology. Abilene TX. **Poster presentation.**

39. Waite, K.**, S. Hona*, V. Do*, and **S.M. McGillivray**. Regulatory effects of loss of ClpX on the msrA chromosomal gene in Bacillus anthracis, 2023, Spring Meeting of the Texas Branch of the American Society of Microbiology. Abilene TX. **Poster presentation.**

40. Hona, S.*, K. Waite**, G. Ellis**, and **S.M. McGillivray**. Role of *sigM* and *glpF* on antimicrobial resistance and virulence in *Bacillus anthracis*, 2023, Spring Meeting of the Texas Branch of the American Society of Microbiology. Abilene TX. **Poster presentation.**

41. Hamilton, L.**, V. Adeleke**, Z. Rouseau**, L. Callaghan**, T. Kelly**, and **S.M. McGillivray**, Identifying novel mutants with increased susceptibility to H_2O_2 and reduced virulence in Bacillus anthracis Sterne, 2023, Spring Meeting of the Texas Branch of the American Society of Microbiology. Abilene TX. **Poster presentation.**

42. Wilson, L.**, V. Do*, and **S.M. McGillivray**. Role of ClpX in the stress response and virulence of Bacillus anthracis: protease or chaperone?, 2023, Spring Meeting of the Texas Branch of the American Society of Microbiology. Abilene TX. **Oral presentation.**

43. Caron, A.*, M. Delgado**, D. Johnson*, Y. Strzhemechny, **S. M. McGillivray**. Characterization of novel zinc oxide resistant *Staphylococcus aureus* mutants, 2023, Spring Meeting of the Texas Branch of the American Society of Microbiology. Abilene TX. **Oral presentation.**

44. Gallegos, K.*, J. Malmquist*, S. Baugh**, J. Manceras**, M. Greene**, and **S. M. McGillivray**. Characterization of the potential iron-acquisition gene dUTPase in *Bacillus anthracis*, 2023, Spring Meeting of the Texas Branch of the American Society of Microbiology. Abilene TX. **Oral presentation.**

45. Caron, A.*, J. Reeks*, D. Johnson*, I. Ali**, M. Delgado**, Y. Strzhemechny and S.M. McGillivray. Characterization of Antibacterial Mechanisms of Zinc Oxide in Staphylococcus aureus, 2023, ASM Microbe. Houston TX. **Poster Presentation**.

46. Caron, A.*, M. Delgado**, Y. Strzhemechny, **S. M. McGillivray**. Investigation of the Role of Soluble Species in the Antibacterial Mechanism of Zinc Oxide in Staphylococcus aureus, 2023, Fall Meeting of the Texas Branch of the American Society of Microbiology. Stephensville TX. **Poster presentation.**

47. Aráuz, M.**, S. Cronk**, A. Pennington*, **S. M. McGillivray.** Refining methods for isolating, purifying, and characterizing bacteriophages, 2024, Spring Meeting of the Texas Branch of the American Society of Microbiology. Cedar Hill, TX. **Poster presentation**

48. Guilhas, J.**, K. Gallegos*, J. Manceras**, M. Green**, **S.M. McGillivray**. Identification of Novel Genes Related to Iron Acquisition in Bacillus anthracis Sterne, 2024, Spring Meeting of the Texas Branch of the American Society of Microbiology. Cedar Hill, TX. **Poster presentation.**

49. Plylar, A.**, L. Hamilton**, **S. M. McGillivray**. Screening for Novel Virulence Factors Using H_2O_2 in *Bacillus anthracis* Sterne, 2024, Spring Meeting of the Texas Branch of the American Society of Microbiology. Cedar Hill, TX. **Poster Presentation.**

50. Pennington, A.*, S. Hona*, K. Waite**, **S.M. McGillivray**. The connection between msrB and cell wall-targeting antibiotic sensitivity in *Bacillus anthracis* Sterne, 2024, Spring Meeting of the Texas Branch of the American Society of Microbiology. Cedar Hill, TX. **Poster Presentation.**

51. O'Coyne, S.**, A. Caron*, M. Stewart, **S.M. McGillivray.** Repurposing a serotonin receptor antagonist as a potential novel antibiotic, 2024, Spring Meeting of the Texas Branch of the American Society of Microbiology. Cedar Hill, TX. **Oral Presentation.**

52. Pennington, A.,* S. Hona*, K. Waite**, and **S.M. McGillivray**. Connection between ClpX and MsrB in the response of *Bacillus anthracis* Sterne to cell wall targeting antibiotics, 2024, 22nd International Conference on Bacilli and Gram-positive Bacteria. Bloomington, IN. **Oral presentation**.

53. Pennington, A.*, S. Hona*, K. Waite**, and **S.M. McGillivray**. Connection between ClpX and MsrB and increased sensitivity to cell wall antibiotics in *Bacillus anthracis* Sterne, 2024, Fall Meeting of the Texas Branch of the American Society of Microbiology. Galveston, TX. **Poster presentation.**

54. Guilhas, J.**, K. Gallegos*, J. Manceras**, M. Green**, J. Malmquist*, and **S.M. McGillivray**. Characterization of novel genes critical of iron acquisition from hemoglobin in *Bacillus anthracis* Sterne, 2024, Fall Meeting of the Texas Branch of the American Society of Microbiology. Galveston, TX. **Poster presentation.**

55. Chadwick, B.**, S. O'Coyne**, A. Caron*, M. Stewart, and S.M. McGillivray. Efficacy of repurposed ClpXP protease inhibitors in *Bacillus anthracis* Sterne, 2025, Spring Meeting of the Texas Branch of the American Society of Microbiology. Cedar Hill, TX. **Poster presentation.**

56. Pennington, A.*, S. Hona*, J. Austin**, K. Waite**, and **S.M. McGillivray**. Investigating the role of fused MsrA/B and ClpX in resistance to cell-wall targeting antibiotics in *Bacillus anthracis* Sterne, 2025, ASM Microbe. Los Angeles, CA. **Poster presentation.**

57. Austin, J. **, P. Pennington*, S. Hona*, K. Waite**, and **S.M. McGillivray.** Investigating the role of fused *msrA/B* and *clpX* in the resistance to reactive oxidant species in *Bacillus anthracis* Sterne, 2025, UNTHSC Research Day. Fort Worth TX. **Poster Presentation.**

INVITED SPEAKER

1. California State University Los-Angeles Department of Biological Science's seminar series in BioSecurity Research and Education. August 20, 2009

2. Department of Molecular Virology and Microbiology Seminar Series, Baylor College of Medicine, Houston TX, April 28, 2011.

3. IRACDA Fellowship Program, University of California, San Diego, March 22, 2012.

4. Department of Biology, University of Texas-Arlington, Arlington, TX March 21, 2013.

5. Fall Meeting of the Texas Branch of the American Society of Microbiology, Houston TX, October 2014.

6. Fall Meeting of the Texas Branch of the American Society of Microbiology, Stephensville TX, October 27, 2023.

RESEARCH FELLOWSHIPS AND AWARDS

Barry M. Goldwater Scholarship Recipient, 1999
NIH Contraception and Infertility Research Loan Repayment Program, 2002-2004
Women in Endocrinology Excellence in Basic Science Award, 2005
Institutional Research and Career Development Award (IRACDA) research and teaching fellowship from the National Institute of General Medicine 2006-2009
Hartwell Foundation Biomedical Research Fellowship, 2009

RESEARCH AWARDS RECEIVED BY STUDENT COLLABORATORS

denotes TCU undergraduate student, *denotes TCU graduate student

1. Chris Evans*, Winner of the 2012 Howard J. Arnott Student Competition Award, Texas Society of Microscopy, April 2012

2. Julio Manceras**, 1st place, undergraduate student presentation, Texas Branch of the American Society of Microbiology, Oct. 2012

3. Elizabeth Franks*, 1st place, graduate student presentation, Texas Branch of the American Society of Microbiology, Oct. 2012

4. Elizabeth Franks*, 2nd place, graduate student poster competition, North Texas Research Symposium, Nov. 2012.

5. Chris Evans*, 1st place, graduate student poster competition. North Texas Research Symposium, Nov. 2012.

6. Chris Evans*, Winner of the 2013 Howard J. Arnott Student Competition Award, Texas Society of Microscopy, April 2013

7. Vanessa Norris**, finalist for Boller Award for best Honors Thesis presentation from the TCU Honors College. 2013

8. Kevin Claunch** received $2000 for a summer research fellowship from the American Society of Microbiology, Summer 2013

9. Kevin Claunch** received the Boller Award for best Honors Thesis presentation from the TCU Honors College. 2014.

10. Kevin Claunch* received 2nd place in the University 3-minute thesis competition. 2015.

11. Madeline Bush** received first place in the undergraduate division of medical microbiology for her poster presentation at the Fall meeting of the Texas Branch of the American Society for Microbiology in Dallas TX. November 2016.

12. Quynh Ngo** won the Best Student Poster (Undergraduate, Basic Sciences) for her poster presentation at the Spring meeting of the Texas Branch of the American Society for Microbiology in New Braunfels TX. March 2016

13. Madeline Bush** received first place in the undergraduate division for her oral presentation at the spring meeting of the Texas Branch of the American Society for Microbiology in New Braunfels TX, March 2017.

14. Quinn Losefsky** received first place in the undergraduate division of Pathogenic Microbiology for her poster presentation at the spring meeting of the Texas Branch of the American Society for Microbiology in New Braunfels TX, March 2019.

15. Bella Kourteas** received first place in the undergraduate division of Pathogenic Microbiology for her poster presentation at the Spring meeting of the Texas Branch of the American Society for Microbiology, Virtual Conference, March 2022.

16. Victoria Adeleke** received second place in the undergraduate division of Pathogenic Microbiology for her poster presentation at the Spring meeting of the Texas Branch of the American Society for Microbiology, Virtual Conference, March 2022.

17. Vuong Do* received the Best Biology Graduate Student Poster award at the TCU Student Research Symposium, April 2022.

18. Alex Caron** received second place in the undergraduate division of Pathogenic Microbiology for his poster presentation at the Fall meeting of the Texas Branch of the American Society for Microbiology in Houston TX, November 2022.

19. Luke Hamilton** received first place in the undergraduate division of Pathogenic Microbiology for his poster presentation at the Fall meeting of the Texas Branch of the American Society for Microbiology in Houston TX, November 2022.

20. Lilly Wilson** received first place for an oral presentation given by an undergraduate at the Spring meeting of the Texas Branch of the American Society for Microbiology in Abilene TX, March 2023.

21. Kelsey Waite** received second place in the undergraduate division of Pathogenic Microbiology for her poster presentation at the Spring meeting of the Texas Branch of the American Society for Microbiology in Abilene TX, March 2023.

22. Michael Delgado** received third place in the undergraduate division of Molecular Microbiology and Genetics for his poster presentation at the Spring meeting of the Texas Branch of the American Society for Microbiology in Abilene TX, March 2023.

23. Jessica Guilhas** received first place in the undergraduate division of Pathogenic Microbiology for her poster presentation at the Spring meeting of the Texas Branch of the American Society for Microbiology in Cedar Hills TX, March 2024.

24. Aeron Pennington* received first place in the graduate division of Pathogenic Microbiology for her poster presentation at the Spring meeting of the Texas Branch of the American Society for Microbiology in Cedar Hills TX, March 2024.

25. Sheridan O'Coyne** was selected as a Boller Finalist for the TCU Honors College in April 2024.

26. Sheridan O'Coyne** received the Best Biology Undergraduate Student Poster award at the TCU Student Research Symposium, April 2024.

27. Braden Chadwick** received first place in the undergraduate division of Antimicrobial Microbiology for his poster presentation at the Spring meeting of the Texas Branch of the American Society for Microbiology in Cedar Hills TX, March 2025

28. Aeron Pennington* received the Best Biology Graduate Student Poster award at the TCU Student Research Symposium, April 2025.

SERVICE

DEPARTMENTAL SERVICE

Fall 2011	Chair, Instructor of Anatomy & Physiology Search Committee
Fall 2012	Member, Tenure-Track Physiologist Search Committee
Summer 2013	Member, Staff Lab Coordinator Search Committee
Fall 2013	Member, Tenure-Track Geneticist Search Committee
2012-2014	Faculty participant, Mondays at TCU
2014-2022	Member, Biology Department Curriculum Committee

2018-2019	Member, Biology Departmental Advisory Committee
2020-2022	Member, Biology Departmental Advisory Committee
2021-2022	Chair, Cell Biology Instructor Search Committee
2022-2024	Associate Chair, Biology Department
Spring 2023	Member, Search Committee for Technical Purchasing Specialist
Fall 2023	Chair, Physiology Assistant Professor Search Committee
Fall 2023	Member, NTDT Departmental Faculty Advisory Committee
Fall 2023-present	Chair, Faculty Award Nominations Committee
2024	Chair, Biology Department *ad hoc* productivity committee
Fall 2024	Chair, Promotion review committee (Marlo Jeffries)
Fall 2025-present	Member, Biology advisory committee
Fall 2025	Member, Technical Purchasing Specialist Search Committee

COLLEGE SERVICE

2011-2013	Member, Health Professionals Advisory Committee
2013-2016	Member, College Curriculum Committee
2013-present	Associate Chair, Health Professionals Advisory Committee
2013-present	Associate Director, Pre-Health Institute
Fall 2019	Member, Pre-health Instructor Search Committee
Fall 2025-present	Member, Pre-health Associate Director for Academic Support Search Committee

UNIVERSITY SERVICE

June 2011, Faculty Facilitator at Frog Camp
August 2011, Common Readings
June 2012, Faculty Facilitator at Frog Camp
Spring 2021, Interim Faculty Senator
Spring 2021, Academic Excellence Committee (interim senator)
Fall 2025-present, Post-tenure Review Committee

COMMUNITY ACTIVITIES

2018-2019, Judge at UNT Research Appreciation Day
2023 & 2025, Science outreach, Alice Carlson Elementary school

PROFESSIONAL SERVICE

Manuscript referee: ACS Chemical Biology, Journal of Bacteriology, Scientific Reports, PloS One, Virulence, Developmental and Comparative Immunology, PloS Biology, Molecules, Toxins, Frontiers in Microbiology (Review Editor for Microbiology Physiology & Metabolism)

Memberships In Professional Organizations

American Society for Microbiology
Texas Association for Advisors of Health Professions

ACADEMIC ADVISING ACTIVITIES

2011: 27 students advised
2012: 42 students advised; 7 mock interviews
2013: 65 students advised; 12 mock interviews
2014: 150 students advised; 19 mock interviews; 23 professional school letters
2015[#]: 79 students advised; 17 mock interviews; 18 professional school letters

2016: 82 students advised; 22 mock interviews; 20 professional school letters
2017[#]*: 0 students advised; 13 mock interviews; 17 professional school letters
2018: 69 students advised; 21 mock interviews; 20 professional school letters
2019: 109 students advised; 17 mock interviews; 21 professional school letters
2020: 146 students advised; 17 mock interviews; 22 professional school letters
2021: 139 students advised; 16 mock interviews; 16 professional school letters
2022: 146 students advised; 15 mock interviews; 17 professional school letters
2023: 157 students advised; 18 mock interviews; 18 professional school letters
2024: 153 students advised; 12 mock interviews; 17 professional school letters
2025*: 56 students advised; 17 mock interviews; 17 professional school letters

[#]No advising in fall due to FMLA leave
**No advising in spring due to research sabbatical*