CURRICULUM VITAE
ASHLEY I. TEUFEL, Ph.D.

Education

Ph.D., Molecular Biology	University of Wyoming, 2015. Advisor: David Liberles.
B.S., Mathematics	Minor: Bioinformatics, New Mexico State University, 2007.
B.S., Computer Science	Minor: Mathematics, New Mexico State University, 2006.

Academic Positions

Assistant Prof. of Biology	Dept. of Natural Sciences, Texas A&M University - San Antonio, 2021–present.
Omidyar Fellow	Complex Systems, Santa Fe Institute, 2019–2021.
Postdoctoral Fellow	Dept. of Integrative Biology, The University of Texas at Austin, 2015–2018. Advisor: Claus Wilke.
Research Fellow	Dept. of Biology, Institute for Genomics and Evolutionary Medicine, Temple University, 2015.

Teaching

Courses

Years listed individually indicate single course offerings; year ranges indicate courses taught consistently across years.

- **Graduate Biostatistics II** (BIOL 5320), Instructor, Texas A&M University - San Antonio. 2024, 2025.
- **Biostatistics II** (BIOL 4356)[1], Instructor, Texas A&M University - San Antonio. 2024.
- **Graduate Seminar** (BIOL 5105), Instructor, Texas A&M University - San Antonio. 2023–2024.
- **Graduate Statistics I (Biostatistics I / Statistical Methods in Research)** (BIOL 5315 / WATR 5320), Instructor, Texas A&M University - San Antonio. 2023, 2024, 2025.

[1]Duel listed with BIOL 5320 for a semester as a special topics course

- **Bioinformatics** (BIOL 4356/5370), Instructor, Texas A&M University - San Antonio. 2023, 2024, 2026.
- **Thesis** (BIOL 5306), Instructor, Texas A&M University - San Antonio. 2023–present.
- **Independent Study** (BIOL 5201/5301/5401), Instructor, Texas A&M University - San Antonio. 2024–2026.
- **Undergraduate Research in Biology** (BIOL 3104/4304), Instructor, Texas A&M University - San Antonio. 2022–2026.
- **Gen Biology I - Attributes of Living Systems** (BIOL 1306), Instructor, Texas A&M University - San Antonio. 2022.
- **Seminar - Cell/Molecular Biology** (BIOL 4102), Instructor, Texas A&M University - San Antonio. 2022.
- **Seminar - Integrative Biology** (BIOL 4101), Instructor, Texas A&M University - San Antonio. 2021, 2022, 2023, 2025–2026.
- **Statistics in Biology and Medicine** (BIOL 2415/3415), Instructor, Texas A&M University - San Antonio. 2021–2024, 2025–2026.
- **Biostatistics** (SDS 328), Instructor, The University of Texas at Austin. 2018.
- **Computational Biology & Bioinformatics** (BIO 348), Guest Lecturer, The University of Texas at Austin. 2017.
- **Bioinformatics** (MOLB 4495/5495), Guest Lecturer & Teaching Assistant, University of Wyoming. 2012, 2014.
- **Computers in Biology** (MOLB 4485/5485), Teaching Assistant, University of Wyoming. 2011, 2013.

Workshops Taught / Other Instructional Activities

- Teaching with AI workshop, Instructor, Texas A&M University - San Antonio. 2025.
- Science Sprint: Building models to detect, project, and combat COVID-19, Mentor, The University of Texas at Austin (virtual event). 2020.
- Gene Family Analysis Workshop, Teaching Assistant, New Mexico State University. 2014.
- Mathematics in Biology Summer School, Material Developer & Teaching Assistant, New Mexico State University. 2009.
- Computer Science, Laboratory Proctor & Tutor, New Mexico State University. 2005–2010.

Professional Development in Teaching

- SENCER workshop: Teaching through the Issues (1/2 day workshop), Texas A&M University - San Antonio. 2025.
- Institute on AI, Pedagogy, and the Curriculum Mid-Institute Event (2 day workshop), American Association of Colleges and Universities (AAC&U) Online. 2024.
- AI & U CATIE Summit, Texas A&M University, College Station. 2024.
- SENCER workshop: Teaching through the Issues (Summer Fellowship), Texas A&M University - San Antonio. 2024.
- Faculty Immersion Program, Texas A&M University - San Antonio. 2023.
- Lumina A.I. in the Classroom: Challenges and Opportunities, virtual. 2023.
- Dyslexia Seminar, Texas A&M University - San Antonio. 2023.

Awards

- Most Influential Mentor Award (Mentee: Jesus Lopez), Natural Sciences, Texas A&M University - San Antonio. 2025.

Scholarship

Funding

- **$9,980** College Grant "Have Texas' Rivers Already Been Contaminated with Fracking Wastewater?" funded by Texas A&M University - San Antonio College of Arts & Sciences. Awarded to: Den, W. Co-Pi: Teufel, A. 2025.
- **$11,783.16** "Vaccine Effectiveness and Immune Response of SARS-CoV-2 Vaccines in Active Military Personnel (VIRAMP)" funded by Foundation for Advancing Veterans' Health Research. 2024.
- **$9,995** College Grant "Enhancing Urban Ecosystem Studies in South San Antonio through AI" funded by Texas A&M University - San Antonio College of Arts & Sciences. Awarded to: Teufel, A., Co-Pis: Barillas, J., and Borda, E. 2024.
- **$3,550** Working group "Capturing the Evolutionary Capacity to Innovate via Novel Interactions in Protein Interaction Networks" funded by Santa Fe Institute Education. 2019.
- **$6,383** Working group "The Point of No Return" funded by Santa Fe Institute. 2019.

- **$53,505** Grant "Master Key vs. Extra Key: Testing competing lock-and-key hypothesis for constrained protein-protein evolution" funded by BEACON an NSF center. 2018.
- **$2,898** "Seeing the Tree and the Forest: Understanding Individual and Population Variation in Biology, Medicine, and Society" fellowship funded by The University of Texas at Austin. 2017.

Publications

† *denotes Teufel as corresponding author; * denotes student author/presenter;* ‡ *denotes co-first author.*

1. Ashley Teufel† and David Liberles. "Teaching Bioinformatics with Generative AI: Judgment, Uncertainty, and Responsibility". In: *Journal of Microbiology & Biology Education* (2025). Submitted
2. Alejandro Mendietta*, Joshua Sierra*, Ashley Teufel, and Walter Den. "Potential Effects of Produced Water Discharge on Surface Water: Case Studies on Nueces River Watershed, Texas". In: *Texas Water Journal* (2025). Submitted
3. Ashley Teufel†, Md Imran Hasan*, and Davida Smyth. "Evolutionary Rate Variation at Predicted PTM Sites Reveals Host-Specific Patterns in Influenza A Virus". In: *Genome Biology and Evolution* (2025). Submitted
4. Md Imran Hasan, Srinivas Mummidi, and Ashley I Teufel†. "Integrative single-cell transcriptomic analysis reveals immunomodulatory hub genes and candidate compounds for HIV-associated chronic inflammation". In: *Virology Journal* (2025)
5. Md Imran Hasan*, Davida S Smyth, and Ashley I Teufel †. "Network analysis of antimicrobial resistance in Staphylococcus aureus: characterization of hub genes and their functional implications". In: *NAR Genomics and Bioinformatics* 7.4 (Nov. 2025), lqaf147
6. Ashley Teufel† and Davida Smyth. "GoPopPie: An R Package for Hybrid Piechart-Lollipop Plots for Gene Ontology Enrichment Visualization". Version v0.1.1. In: *Zenodo* (2025), 10.5281/zenodo.15936975
7. David A. Liberles, Michelle M. Meyer, Joshua S. Rest, and Ashley I. Teufel. "2021 Zuckerkandl Prize". In: *Journal of Molecular Evolution* 90.1 (2021), p. 1
8. Brennan Klein*, Ludvig Holmér*, Keith M. Smith*, Mackenzie M. Johnson*, Anshuman Swain*, Laura Stolp*, Ashley I. Teufel, and April S. Kleppe*. "A computational exploration of resilience and evolvability of protein–protein interaction networks". In: *Communications Biology* 4.1 (2021), p. 1352
9. Ashley I Teufel, Wu Liu, Jeremy A Draghi, Craig E Cameron, and Claus O Wilke. "Modeling poliovirus replication dynamics from live time-lapse single-cell imaging data". In: *Scientific reports* 11.1 (2021), pp. 1–15

10. Joseph B Ahrens, Ashley I Teufel, and Jessica Siltberg-Liberles. "A Phylogenetic Rate Parameter Indicates Different Sequence Divergence Patterns in Orthologs and Paralogs". In: *Journal of Molecular Evolution* (2020), pp. 1–11

11. Lauren G Shoemaker, Allison K Barner, Leonora S Bittleston, and Ashley I Teufel. "Quantifying the relative importance of variation in predation and the environment for species coexistence". In: *Ecology Letters* 23.6 (2020), pp. 939–950

12. Jon M Laurent, Riddhiman K Garge, Ashley I Teufel, Claus O Wilke, Aashiq H Kachroo, and Edward M Marcotte. "Humanization of yeast genes with multiple human orthologs reveals functional divergence between paralogs". In: *PLoS Biology* 18.5 (2020), e3000627

13. Ashley I. Teufel†. "Spire: R package for Single-cell Population Infection Replication Estimation". Version SPIREv0.1. In: *Zenodo* (2019), 10.5281/zenodo.3366146

14. David A Liberles and Ashley I Teufel†. "Evolution and Structure of Proteins and Proteomes". In: *Genes* 9.12 (2018), p. 583

15. Ashley I Teufel†, Mackenzie M Johnson, Jon M Laurent, Aashiq H Kachroo, Edward M Marcotte, and Claus O Wilke. "The Many nuanced evolutionary consequences of duplicated genes". In: *Molecular Biology and Evolution* 36.2 (2018), pp. 304–314

16. Ashley I Teufel, Andrew M Ritchie, Claus O Wilke, and David A Liberles. "Using the Mutation-Selection Framework to Characterize Selection on Protein Sequences". In: *Genes* 9.8 (2018), p. 409

17. Qian Jiang*, Ashley I Teufel, Eleisha L Jackson, and Claus O Wilke. "Beyond thermodynamic constraints: evolutionary sampling generates realistic protein sequence variation". In: *Genetics* 208.4 (2018), pp. 1387–1395

18. M Umut Caglar, Ashley I Teufel, and Claus O Wilke. "Sicegar: R package for sigmoidal and double-sigmoidal curve fitting". In: *PeerJ* 6 (2018), e4251

19. Ashley I Teufel and Claus O Wilke. "Accelerated simulation of evolutionary trajectories in origin-fixation models". In: *Journal of The Royal Society Interface* 14.127 (2017), p. 20160906

20. Alena Orlenko[Ĕ], Ashley I Teufel[Ĕ], Peter B Chi, and David A Liberles. "Selection on metabolic pathway function in the presence of mutation-selection-drift balance leads to rate-limiting steps that are not evolutionarily stable". In: *Biology Direct* 11.1 (2016), p. 31

21. Ashley I Teufel, Liang Liu, and David A Liberles. "Models for gene duplication when dosage balance works as a transition state to subsequent neo-or sub-functionalization". In: *BMC Evolutionary Biology* 16.1 (2016), p. 45

22. Jing Zhao, Ashley I Teufel, David A Liberles, and Liang Liu. "A generalized birth and death process for modeling the fates of gene duplication". In: *BMC Evolutionary Biology* 15.1 (2015), p. 275

23. Ashley I Teufel, Joanna Masel, and David A Liberles. "What fraction of duplicates observed in recently sequenced genomes is segregating and destined to fail to fix?" In: *Genome Biology and Evolution* 7.8 (2015), pp. 2258–2264

24. Ashley I Teufel. *Mechanistic Models of the Evolutionary Dynamics of Duplicated Genes*. (Dissertation) University of Wyoming, 2015

25. Ashley I Teufel, Jing Zhao, Malgorzata O'Reilly, Liang Liu, and David A Liberles. "On mechanistic modeling of gene content evolution: birth-death models and mechanisms of gene birth and gene retention". In: *Computation* 2.3 (2014), pp. 112–130

26. Matthew R Jones, Brenna R Forester, Ashley I Teufel, Rachael V Adams, Daniel N Anstett, Betsy A Goodrich, Erin L Landguth, Stéphane Joost, and Stéphanie Manel. "Integrating landscape genomics and spatially explicit approaches to detect loci under selection in clinal populations". In: *Evolution* 67.12 (2013), pp. 3455–3468

27. David A Liberles, Ashley I Teufel, Liang Liu, and Tanja Stadler. "On the need for mechanistic models in computational genomics and metagenomics". In: *Genome Biology and Evolution* 5.10 (2013), pp. 2008–2018

28. Ashley I Teufel, Johan A Grahnen, and David A Liberles. "Modeling proteins at the interface of structure, evolution, and population genetics". In: *Computational Modeling of Biological Systems*. Springer, 2012, pp. 347–361

29. David A. Liberles, Sarah A. Teichmann, Ivet Bahar, Ugo Bastolla, Jesse Bloom, Erich Bornberg-Bauer, Lucy J. Colwell, A. P. Jason de Koning, Nikolay V. Dokholyan, Julian Echave, Arne Elofsson, Dietlind L. Gerloff, Richard A. Goldstein, Johan A. Grahnen, Mark T. Holder, Clemens Lakner, Nicholas Lartillot, Simon C. Lovell, Gavin Naylor, Tina Perica, David D. Pollock, Tal Pupko, Lynne Regan, Andrew Roger, Nimrod Rubinstein, Eugene Shakhnovich, Kimmen Sjölander, Shamil Sunyaev, Ashley I. Teufel, Jeffrey L. Thorne, Joseph W. Thornton, Daniel M. Weinreich, and Simon Whelan. "The interface of protein structure, protein biophysics, and molecular evolution". In: *Protein Science* 21.6 (2012), pp. 769–785

30. Anke Konrad[Ĕ], Ashley I Teufel[Ĕ], Johan A Grahnen, and David A Liberles. "Toward a general model for the evolutionary dynamics of gene duplicates". In: *Genome Biology and Evolution* 3 (2011), pp. 1197–1209

Presentations

1. "Spatial-Temporal Models of Primate Behavior" New Mexico State University, Las Cruces, NM (May, 2009).

2. "Unifying Models for Estimating Population Size and Demography" New Mexico State University Bio-Symposium, Las Cruces, NM (April, 2010).

3. "Lineage-Specific Substitution Patterns at the Interface of Effective Population Size, Linkage, and Biochemistry" Synthesis Meeting on Modeling Protein Structural and Energetic Constraints on Sequence Evolution, NIMBioS, Durham, NC (October, 2011).

4. "Towards a General Model for the Evolutionary Dynamics of Gene Duplicates" Mechanisms of Protein Evolution, University of Colorado Health Sciences Center, Denver, CO (December, 2011).

5. "The Interface of Evolutionary Dynamics of Gene Duplicates and Landscape Genetics" Symposium on Landscape Genetics, University of Toronto, Toronto, Canada (May, 2012).

6. "Towards a General Model for the Evolutionary Dynamics of Gene Duplicates" Stockholm Bioinformatics Center, Stockholm University, Stockholm, Sweden (August, 2012).

7. "Selective Pressures on Amino Acid Substitutions During Human-Chimpanzee Divergence" Quantitative Laws of Genome Evolution, Lake Como, Italy (July, 2013).

8. "Selective Pressures on Amino Acid Substitutions During Human-Chimpanzee Divergence" Society for Molecular Biology and Evolution (SMBE) Annual Meeting, Chicago, IL (July, 2013).

9. "What Fraction of Gene Duplicates Observed in Recently Sequenced Genomes is Segregating and Destined to Fail to Fix?" Lehigh Valley Ecology and Evolution Symposium, Allentown, PA (April, 2015).

10. "Functional Retention of Protein-Protein Interactions Despite Substantial Sequence Divergence" Society for Molecular Biology and Evolution (SMBE) Annual Meeting, Gold Coast, Australia (July, 2016).

11. "Functional Retention of Protein-Protein Interactions Despite Substantial Sequence Divergence" BEACON Center for the Study of Evolution in Action, Lansing, MI (August, 2016).

12. "Protein Flexibility and the Irreversibility of Evolution" Texas Protein Folders Meeting, Cleveland, TX (April, 2017).

13. "Uncovering Replication Principles from Single-cell Virology Experiments" Society for Molecular Biology and Evolution (SMBE) Annual Meeting, Austin, TX (July, 2017).

14. "Functional Shifts in Duplicated Genes via Specialization of Interacting Partners" BEACON Center for the Study of Evolution in Action, Lansing, MI (August, 2017).

15. "A Protein's Guide to Losing Friends and Alienating Partners" University of Central Florida, Orlando, FL (November, 2017).

16. "How Does Complex Life Functionally Diversify?" The Santa Fe Institute, Santa Fe, NM (January, 2018).

17. "How Does Complex Life Functionally Diversify?" The University of Arizona, Tucson, AZ (February, 2018).

18. "The Many Nuanced Consequences of Gene Duplication" Society for Molecular Biology and Evolution (SMBE) Annual Meeting, Yokohama, Japan (July, 2018).

19. "The Many Nuanced Consequences of Gene Duplication" BEACON Center for the Study of Evolution in Action, Lansing, MI (August, 2018).

20. "Is Evolution Irreversible?" JSMF- SFI Postdocs in Complexity IV, Santa Fe, NM (September, 2018).

21. "The Point of No Return: Entrenchment in Molecular, Technological, and Social Systems" JSMF- SFI Postdocs in Complexity V, Santa Fe, NM (March, 2019).

22. "Translational Efficiency and The Evolution of Position-Dependent Codon Usage" Society for Molecular Biology and Evolution (SMBE) Annual Meeting, Manchester, England (July, 2019).

23. "The Many Nuanced Evolutionary Consequences of Protein Functional Divergence" Department of Biological Sciences, Louisiana State University, Baton Rouge, LA (February, 2020).

24. "Uncovering Viral Replication Dynamics from High-throughput Single-cell Experiments" Center for Computation and Technology, Louisiana State University, Baton Rouge, LA (February, 2020).

25. "Modeling Covid-19 Spread in Long Term Care Facilities in the Greater Austin, TX Region" University of Texas at Austin Covid Modeling Consortium, virtual (August, 2020).

26. "Uncovering Viral Replication Dynamics from High-throughput Single-cell Experiments" Trinity University, San Antonio, TX (March, 2022).

27. "Agent-Based Modeling to Establish a Protocol for Sampling DNA from the Air." Society for Integrative and Comparative Biology (SICB), Seattle, WA (January, 2024) (co-presented with Davida Smyth).

28. "Generative AI (GenAI) at TAMUSA" Faculty Breakfast, Texas A&M University - San Antonio (August, 2024).

29. "Generative AI (GenAI) at TAMUSA" New Faculty Orientation, Texas A&M University - San Antonio (August, 2024).

30. "Transforming Graduate Education with AI: Policy Development and Instructional Practices" Association of Texas Graduate Schools, San Antonio, TX (September, 2024).

31. "Agent-Based Modeling of Complex Life Cycle Ecology & Evolution" Trinity University, San Antonio, TX (December, 2024).

32. "Practical strategies for teaching with AI" Brown Bag lunch, Texas A&M University - San Antonio (April, 2025).

Posters

1. "Simulation of Evolutionary Dynamics of Gene Duplicates" New Mexico Bioinformatics Science and Technology Symposium, Santa Fe, NM (October, 2012).

2. "Selective Pressures on Amino Acid Substitutions During Human-Chimpanzee Divergence" NSF Bioinformatics Workshop, Little Rock, AR (March, 2013) (3rd place poster award).

3. "Accelerated Simulation of Evolutionary Trajectories in Origin–Fixation Models" Institute for Cellular and Molecular Biology at The University of Texas at Austin Retreat, Horseshoe Bay, TX (September, 2016).

4. "Translational Efficiency and The Evolution of Position-Dependent Codon Usage" Molecular Mechanisms in Evolution Gordon Research Conference, Easton, MA (June, 2019).

Posters & Presentations by Students

1. "Translational Efficiency and The Evolution of Position-Dependent Codon Usage" Society for Molecular Biology and Evolution (SMBE) Annual Meeting, Austin, TX (2017) (poster) - Marrow*, N., Teufel, A., Wilke, C.

2. "The evolutionary dynamics of post-translational modifications in betacoronaviruses as a potential driver of rapid viral divergence." Viruses Conference, Remote (2022) (poster) - Morales*, D., Teufel, A., Siltberg-Liberles, J.

3. "The evolutionary dynamics of post-translational modifications in betacoronaviruses as a potential driver of rapid viral divergence." American Society for Microbiology (ASM) Microbe 2022 Conference, Washington, D.C. (2022) (presentation) - Morales*, D., Teufel, A., Siltberg-Liberles, J.

4. "Beyond the genome: The diverse and dynamic post-translational modification landscape of betacoronaviruses as a driver of rapid evolutionary adaptation." International Virus Bioinformatics Meeting (ViBioM), Valencia, Spain, Remote (2022) (poster) - Gonzalez*, J., Teufel, A., Siltberg-Liberles, J.

5. "Agent-Based Modeling to Establish a Protocol for Sampling DNA from the Air." Texas Branch of the American Society for Microbiology (ASM), Houston, TX (2022) (poster) - Stacy*, L., Smyth, D., and Teufel, A.

6. "Agent-Based Modeling to Establish a Protocol for Sampling DNA from the Air." Society for Integrative and Comparative Biology (SICB), Austin, TX (2023) (poster) - Stacy*, L., Smyth, D., and Teufel, A.

7. "Understanding Anuran Life Cycle Ecology and Evolution Through Agent-Based Modeling." Society for Integrative and Comparative Biology (SICB), Austin, TX (2023) (poster) - Lopez*, J., Teufel, A., and Page, R.

8. "The effects of island attributes and hurricanes on Anolis species richness across the Caribbean Islands." Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2023) (poster) - Leak*, D., John*, A., Teufel, A., and Watson, C.

9. "Agent-Based Modeling to Establish a Protocol for Sampling DNA from the Air." Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2023) (presentation) - Stacy*, L., Smyth, D., and Teufel, A. (2nd place Graduate Oral Presentation).

10. "Agent-Based Modeling to Establish a Protocol for Sampling DNA from the Air." The American Society for Microbiology, Texas Branch Meeting, Abilene, TX (2023) (presentation) - Stacy*, L., Smyth, D., and Teufel, A.

11. "Genome skimming and pseudogenes in poorly studied Remipedia of the Yucatan Peninsula, Mexico." Southwestern Association of Naturalists, San Antonio, TX (2023) (presentation) - Calderón-Gutiérrez F., Sahi*, M., Teufel A., and Borda E.

12. "Remipedia: A story of cenotes, pseudogenes, and the species that never existed." CIMA-LSAMP, San Antonio, TX (2023) (poster) - Sahi*, M., Calderón-Gutiérrez F., Teufel A., and Borda E.

13. "Remipedia: A story of cenotes, pseudogenes, and the species that never existed." Texas Groundwater Invertebrate Forum, San Marcos, TX (2023) (virtual presentaiton) - Calderón-Gutiérrez F., Sahi*, M., Teufel A., and Borda E.

14. "Understanding Amphibian Life Cycle Ecology and Evolution via Agent-Based Modeling" Society for Integrative and Comparative Biology (SICB), Seattle, WA (2024) (poster) - Lopez*, J., Teufel, A., and Page, R.

15. "Understanding Amphibian Life Cycle Ecology and Evolution via Agent-Based Modeling" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2024) (presentation) - Lopez*, J., and Teufel, A.

16. "A Computational Systems Biology Approach for the Identification of Antimicrobial Resistance Genes in Staphylococcus aureus" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2024) (presentation) - Hasan*, I, and Teufel, A.

17. "Agent-Based Modeling to Assess Optimal Conditions for Reducing Air Transmission" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2024) (presentation) - Stacy*, L., Smyth, D., and Teufel, A.

18. "Ecological Use of AI for Invertebrate Zoology" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2024) (poster) - Flores*, A., Mejia*, A., Teufel, A. and Rodolfo Valdez Barillas, J.

19. "Aerosols: Tiny But Mighty-Agent-based modeling to study aerosol transmission" Viva Science, San Antonio, TX (2024) (poster) - Stacy*, L., Smyth, D., and Teufel, A.

20. "Unveiling the Molecular Landscape of HIV Infection: Identification of Key Gene Biomarkers and Potential Drug Candidates through Single-Cell RNA Sequencing and Network Based Bioinformatics Approach" New Mexico Research Symposium, Albuquerque (2024) (poster) - Hasan*, I., Teufel, A.

21. "An integrated whole-genome sequencing and system biology approaches to predict antimicrobial resistance in the virulent bacterial strain of the Staphylococcus aureus" Asia & Pacific Bioinformatics Joint Conference (2024) (Online poster) - Hasan*, I., Smyth, D., Teufel, A.

22. "Unveiling the Molecular Landscape of HIV Infection: Identification of Key Gene Biomarkers and Potential Drug Candidates through Single-Cell RNA Sequencing and Network Based Bioinformatics Approach" Asia & Pacific Bioinformatics Joint Conference (2024) (Online poster) - Hasan*, I., Teufel, A.

23. "Image classification with YOLO for wildlife monitoring in South San Antonio" Society for Integrative and Comparative Biology (SICB), Atlanta, GA (2025) (poster) - Salazar*, V., Brandin*, S., Borda, E., Valdez, J., Teufel, A.

24. "When the egg wins? application of game theory to the evolution of a complex trait" Society for Integrative and Comparative Biology (SICB), Atlanta, GA (2025) (poster) - (2025) Garcia*, V. Watson, C., Teufel, A.

25. "Leveraging AI for the Identification of Aquatic Invertebrate Species" Society for Integrative and Comparative Biology (SICB), Atlanta, GA (2025) (poster) - Mejia*, A., Cruz*, J., Borda, E., Valdez, J., Teufel, A.

26. "Utilizing agent-based modeling to understand amphibian life cycle ecology and evolution" Society for Integrative and Comparative Biology (SICB), Atlanta, GA (2025) (presentation) - Lopez*, J., Teufel, A.

27. "Utilizing agent-based modeling to understand amphibian life cycle ecology and evolution" Ecological Integration Symposium, College Station, TX (2025) (presentation) - Lopez*, J., Teufel, A.

28. "Utilizing agent-based modeling to understand amphibian life cycle ecology and evolution" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2025) (talk) (2nd place undergraduate talk) - Lopez*, J., Teufel, A.

29. "Leveraging AI for the Identification of Aquatic Invertebrate Species" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2025) (poster) - Mejia*, A., Cruz*, J., Borda, E., Valdez, J., Teufel, A.

30. "When the egg wins? application of game theory to the evolution of a complex trait" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio,

TX (2025) - Garcia*, V. Watson, C., Teufel, A.

31. "An integrated whole-genome sequencing and system biology approaches to predict antimicrobial resistance in the virulent bacterial strain of the Staphylococcus aureus" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2025) (talk) (3rd place graduate talk) - Hasan*, I., Smyth, D., Teufel, A.

32. "An integrated whole-genome sequencing and system biology approaches to predict antimicrobial resistance in the virulent bacterial strain of the Staphylococcus aureus" Texas A&M University - San Antonio Student Research Symposium Spring, San Antonio, TX (2025) 3MT finalist - Hasan*, I., Smyth, D., Teufel, A.

Awards

- Ecological Society of America (ESA), Theoretical Ecology Outstanding Paper Award Honourable Mention. 2021.
- Registration and travel awards for Society for Molecular Biology and Evolution (SMBE) annual meeting, Manchester, England. Funded by SMBE. 2019.
- Registration award for SMBE annual meeting, Yokohama, Japan. Funded by SMBE. 2018.
- Registration award for SMBE annual meeting, Austin, TX. Funded by SMBE. 2017.
- Registration award for SMBE annual meeting, Gold Cast, Australia. Funded by SMBE. 2016.
- Travel award for SMBE annual meeting, Chicago, IL. Funded by SMBE. 2013.
- Travel award for "Quantitative Laws of Genome Evolution", Lake Como, Italy. Funded by Wyoming IDeA Networks for Biomedical Research Excellence (INBRE). 2013.
- Registration for "Quantitative Laws of Genome Evolution", Lake Como, Italy. Funded by UniverLecco, an outreach program from the city of Lecco. 2013.
- Travel award for "NSF Bioinformatics Workshop", Little Rock, AR. Funded by Wyoming INBRE. 2013.
- Travel award for "Symposium on Landscape Genetics" in Toronto, Canada. Funded by The University of Toronto Landscape Genetics Distributed Graduate Course. 2012.

Honors & Recognition

- Featured in "The AI Revolution," Adelante Magazine. 2025.
- Featured in Parallax article "The Point of no Return." 2019.
- Featured in New Mexico State University Young Women in Computing Fall newsletter. 2009.

Professional Development in Scholarship

- TAMU HPRC ACES AlphaFold3 (workshop), Texas A&M University - College Station. 2025.
- Jag-AI: Institution Transformation Research and Education (3 workshop series), Texas A&M University - San Antonio. 2024.
- TESS Annual Research Conference (TARC) Pitch: "Data Science, Where are you at?" Co-Pi: Colton Atkins, Drew Casey, & Ashley Teufel, Texas A&M Engineering Experiment Station - College Station. 2024.
- Summer Student of Computational Biology, University of Oxford. 2012. Advisor: Jotun Hein.
- Landscape Genetics Field School, Koffler Scientific Reserve, University of Toronto. 2012. Advisor: Melanie Murphy.
- Primate Behavior and Ecology Field School, Baboon Community Sanctuary La Milpa Belize. 2009. Advisor: Brenda Benefit.

Graduate Students Mentored

- Victoria Garcia (Co-mentor: Charles Watson), Texas A&M University - San Antonio. 2024–present.
- Gabino Olalde Sierra, Texas A&M University - San Antonio. 2024–present.
- Md. Imran Hasan, Texas A&M University - San Antonio. 2023–2025. Last know location: Ph.D. Student of Computational and Systems Biology (CSB) at Purdue University.
- Lyndsy Stacy (Co-mentor: Davida Smyth), Texas A&M University - San Antonio. 2022–2024. Last known location: Ph.D. Student of Forensic Science at Sam Houston State University.
- Brennan Klein, Complex Systems Summer School, Santa Fe Institute. 2020.
- Ludvig Holmér, Complex Systems Summer School, Santa Fe Institute. 2020.
- Keith M. Smith, Complex Systems Summer School, Santa Fe Institute. 2020.
- Mackenzie M. Johnson, Complex Systems Summer School, Santa Fe Institute. 2020.
- Anshuman Swain, Complex Systems Summer School, Santa Fe Institute. 2020.
- Laura Stolp, Complex Systems Summer School, Santa Fe Institute. 2020.
- April S. Kleppe, Complex Systems Summer School, Santa Fe Institute. 2020.
- Qian Jiang, Visiting scholar at The University of Texas at Austin sponsored by the China Scholarship Council. 2016–2017.

Undergraduate Students Mentored

- Leiana Cole, Texas A&M University - San Antonio. 2025–present.
- Lalo Robles, Texas A&M University - San Antonio. 2025.
- Erin Guinn, Texas A&M University - San Antonio. 2025.
- Hugo Padilla Cuadros, Texas A&M University - San Antonio. 2024–2025.
- Caleb Holt (works with Victoria Garcia), Texas A&M University - San Antonio. 2024–2025.
- Andrew Garcia, Texas A&M University - San Antonio. 2024.
- Jordan Cruz (joint: Valdez & Borda - summer hire w/ college grant), Texas A&M University - San Antonio. 2024.
- Sean Brandin (joint: Valdez & Borda - summer hire w/ college grant), Texas A&M University - San Antonio. 2024.
- Brittany Acosta, Texas A&M University - San Antonio. 2024.
- Abigayle Mejia, Texas A&M University - San Antonio. 2024–present.
- Daniel West (works with Md. Imran Hasan), Texas A&M University - San Antonio. 2023–2024.
- Julianna Valencia (works with Lyndsy Stacy), Texas A&M University - San Antonio. 2023–2024. Last known location: Ph.D. Student of Cognition and Neuroscience at The University of Texas at Dallas.
- Fatima Tovar Ale, Texas A&M University - San Antonio. 2023–2024.
- Vivian Salazar, Texas A&M University - San Antonio. 2023–2025. Last known location: PA program.
- Jesus Lopez, Texas A&M University - San Antonio. 2022–present.
- Leina Gries, Institute for Computing in Research. 2019.
- Genevieve Mortensen, The University of Texas at Austin. 2018.
- Ayat Sharif, The University of Texas at Austin. 2017.
- Nelson Marrow, The University of Texas at Austin. 2016–2019.

Graduate Committee Member

- Joshua Sierra, Water Resources Science and Technology, chair: W. Den. 2024–2025.
- Citlalli Guadarrama, Psychology, chair: A. Daniels. 2023–2025.
- Alejandro Nunez Cardenas, Biology, chair: E. Borda. 2022–2024.
- Ashley Aguliar, Biology, chair: M. Wise de Valdez. 2022–2024.

3 Minute Thesis Winning Lab Members

- Lyndsy Stacy (1st place). 2024.
- Victoria Garcia (Honorable mention). 2024.

Service

University Service

- AI Ethics Committee, Texas A&M University - San Antonio. 2025–present.
- Core Curriculum Committee, Texas A&M University - San Antonio. 2024–present.
- Organizer of AI Explore Days in the Library, Texas A&M University - San Antonio. 2024–2025.
- Organizer of AI Unconference, Texas A&M University - San Antonio. 2024.
- AI Steering Committee (chair), Texas A&M University - San Antonio. 2024–2025.
- Provost Faculty Fellow of Generative AI, Texas A&M University - San Antonio. 2024–2025.
- Undergraduate Curriculum Committee, Texas A&M University - San Antonio. 2023–2024.
- Student Research Symposium Moderator, Texas A&M - San Antonio. 2024.
- HPC Governance Committee, Texas A&M University - San Antonio. 2023, 2025.
- Jagwire Days Volunteer, Texas A&M University - San Antonio. 2023.

College Service

- College of Arts and Sciences Excellence in Service Award. 2024.
- College of Arts and Sciences Curriculum Committee (co-chair, 2022, chair 2023–2024), Texas A&M University - San Antonio. 2021–2024.

Department Service

- Biology Program Assessment Coordinator, Texas A&M University - San Antonio. 2024–present.
- Search Committee for Population Genetics Hire (chair), Texas A&M University - San Antonio. 2023–2024.
- Program Review Committee, Texas A&M University - San Antonio. 2022–2023.

Service to Profession

- Panelist, ARCATS Workshop: Designing a Roadmap for Advanced Research Computing, Texas A&M University - San Antonio. 2025.
- NSF - DBI Capacity Review Panel. 2024.
- Presented on interdisciplinary research opportunities at student ACM meeting, Texas A&M - San Antonio. 2024.
- Review Editor of Protein Bioinformatics for the journal of Frontiers in Bioinformatics. 2021–present.
- Zuckerkandl Prize Committee Member for the Journal of Molecular Evolution. 2020, 2021.
- Editorial Board Member for the journal BMC Ecology and Evolution. 2020–present.
- Associate Editor of the Journal of Molecular Evolution. 2019–2025.
- Symposium Chair of "Mechanisms of Protein Evolution" at SMBE annual meeting. 2017.
- Guest Editor for the journal Genes special issue "Evolution and Structure of Proteins and Proteomes". 2017.
- President of the New Mexico State University Association for Computing Machinery. 2009–2010.
- Vice President of the New Mexico State University Association for Computing Machinery. 2008–2009.
- Member of the New Mexico State University Mathematics Honor Society, Pi Mu Epsilon. 2005–2010.

Service to Profession - Journal Reviewer Experience

Biophysical Journal, BMC Evolutionary Biology, Elife, Integrative and Comparative Biology, Journal of Molecular Evolution, Journal of Theoretical Biology, Molecular Biology and Evolution, Molecular Ecology, PeerJ, PLoS ONE, PLoS Computational Biology, Systematic Biology, Theoretical Population Biology.

Community Service

- Facilitator of CodeBusters event for the Science Olympiad, Texas A&M - San Antonio. 2022–2025.
- Volunteer Lecturer & Mentor at the Institute for Computing in Research. 2019.
- Second Place in Flaming Gorge Jalapeño Eating Contest held in Laramie, WY. 2014.