

Curriculum Vitae

Devon J. Boland, Ph.D.

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Texas A&M University

[Texas A&M Institute for Genome Sciences & Society](#)

Department of Whole Systems Genome Institute

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Department of Microbial Pathogenesis & Immunology

Medical Research Education Building II – Room 3224B

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Education:

Ph.D.	Biochemistry & Molecular Biophysics, 2023 Texas A&M University, College Station, TX.
B.S.	Chemistry/Biochemistry, 2018 Northern Illinois University, Dekalb, IL.

Professional Affiliations:

2025-present	Interdisciplinary NexGen TB Research Advancement Center
2025-present	Association of Biomolecular Resource Facilities
2024-present	Texas Genetics Society
2020-2023	American Society of Plant Biologists
2019-2020	Graduate Senate Representative, Texas A&M University
2015-2018	American Chemical Society
2014-present	Alpha Chi Sigma

Positions Held:

2025-present	Visiting Lecturer - Department of Biochemistry & Biophysics, Texas A&M University
2023-present	Assistant Research Scientist - TIGSS Bioinformatics Core, Texas A&M University
2023-present	Visiting Lecturer - Genetics and Genomics Interdisciplinary Graduate Program, Texas A&M University
2022-2023	AgriLife Graduate Research Scholar, Texas A&M University
2018-2023	Graduate Teaching Assistant – Department of Biochemistry & Biophysics, Texas A&M University
2017-2018	Undergraduate Research Assistant, NIGMS R15, Northern Illinois University

Professional Experience:

2024-present	Fullbright Review Committee, Texas A&M University
2024-present	Website Coordinator, Texas Genetics Society
2024-present	Annual Meeting Sponsorship Coordinator, Texas Genetics Society
2024-2025	External Collaborator, Behavioral Plasticity Research Institute
2024-present	Guest Lecturer for BICH 414, Texas A&M University

2024	Guest Lecturer for BICH 464, Texas A&M University
2023	Data Parallelism Workshop, NVIDIA/Texas A&M University
2022-present	HPRC Workshop Leader, Texas A&M University

Teaching Experience:

2026-present	GENE 689: Applied Bioinformatics in Transcriptomics – Instructor, Genetics and Genomics Interdisciplinary Graduate Program
2026-present	GENE 689: Single Cell Transcriptomics - Instructor, Genetics and Genomics Interdisciplinary Graduate Program
2025-present	GENE 658: Differential Gene Expression - Instructor, Genetics and Genomics Interdisciplinary Graduate Program Texas A&M University
2025-present	BICH 689: Introduction to Protein Structure Prediction, Instructor Biochemistry & Biophysics Department, Texas A&M University
2023-2024	GENE 689: Introduction to AlphaFold2, Instructor Genetics and Genomics Interdisciplinary Graduate Program Texas A&M University
2018-2023	BICH 414: Biochemical Techniques I, Teaching Assistant Biochemistry & Biophysics Department, Texas A&M University
2018-2023	BICH 412: Biochemistry Laboratory I, Teaching Assistant Biochemistry & Biophysics Department, Texas A&M University

Awards & Honors:

2025	Distinguished Service Award, Texas Genetics Society
2023	2 nd Place Oral Presentation Award, Texas A&M University
2022-2023	Norman Borlaug Endowed Research Scholar, Texas A&M University
2022	2 nd Place Award Life Sciences Presentation, Texas A&M University
2022	Paul Barry Gayle Teaching Award, Texas A&M University
2017	Ed Hyland Scholarship Award, Northern Illinois University

Grants & Funding:

R01 Research Grant	2/19/26
National Institute of Health	\$3,171,006
Status – Submitted to Sponsor	
PI Joe Arosh	
Role: Co-Investigator	
“TLR4 Signaling in the Pathogenesis of Endometriosis”	

R01 Research Grant	2/17/26
National Institute of Health	\$673,879
Status – Submitted to Sponsor	
PI Wei Xu	
Role: Co-Investigator	
“Mechanistic Dissection of Vesicant-Induced Epidermal and Dermal Cell Network Disruption for Development of Sorbent-Based Countermeasures”	

R35 (MIRA) Research Grant	2/03/26
National Institute of Health	\$2,097,262
Status – Submitted to Sponsor	
PI Pritesh Desai	
Role: Co-Investigator	
“Mechanistic Dissection of Vesicant-Induced Epidermal and Dermal Cell Network Disruption for Development of Sorbent-Based Countermeasures”	
R35 (MIRA) Research Grant	2/03/26
National Institute of Health	\$2,097,262
Status – Submitted to Sponsor	
PI Pritesh Desai	
Role: Co-Investigator	
“Mechanisms Driving Systemic Immune Dysfunction During Polymicrobial Infection”	
R01 Research Grant	11/11/25
National Institute of Health	\$1,832,275
Status – Submitted to Sponsor	
PI Raquel Sitcheran	
Role: Co-Investigator	
“NIK Regulation of Immunometabolism”	
R21 Research Grant	10/29/26
National Institute of Health	\$423,500
Status – Scored/Not Funded	
PI Joe Arosh	
Role: Co-Investigator	
“Mapping and Modulating Spinal Cord Pain-Gene Signatures in Endometriosis-Associated Chronic Pelvic Pain”	
R21 Research Grant	10/16/26
National Institute of Health	\$411,066
Status – Not Scored	
PI Sakhila Banu	
Role: Co-Investigator	
“Exposure to Cr(VI) and the Fetal Origin of Ovarian Fibrosis”	
S10 Instrumentation Grant	6/02/25
National Institute of Health	\$802,514
Status – Submitted to Sponsor	
PI Sunja Kim	
Role: Bioinformatician/Senior Personnel	
“High-Resolution Spatial Proteomics with a Hyperion XTi Imaging Mass Cytometer”	
Research Grant	2/18/25
National Science Foundation	\$15,000,000
Status – Archived/Not Reviewed due to NSF Budget Cuts	
PI Hojun Song	
Role: Early Career Scientist/Senior Personnel	

“BII: BPRI 2.0 – Accelerating Behavioral Plasticity Research Through Scalable Interdisciplinary Team Science”

S10 Instrumentation Grant 6/03/24
National Institute of Health \$831,510
Status – Not Accepted
PI Chendil Damodaran
Role: Bioinformatician/Senior Personnel
“Hyperion Imaging Mass Cytometry”

Research Grant 2/21/23
National Science Foundation \$1,305,453
Status – Not Accepted
PI Timothy P. Devarenne
Role: Graduate Student Research Assistant
“RESEARCH-PGR: Deciphering hydrocarbon and polysaccharide production in the green microalga *Botryococcus braunii*.”

Fellowship 7/15/19
National Science Foundation
Status – Not Accepted
PI Devon J. Boland
Role: Submitter
“Graduate Research Fellowship Program”

Articles:

1. Thomas EG, Ortutu BF, Watson JC, Ong E, Blankley KE, Meaurio Martin A, Shankar S, Zhang D, **Boland DJ**, Wu C-S. Purified Diets Lacking Fermentable Fiber Reduce Microbial Diversity, Alter Epithelial Transcriptome, and Exacerbate Colitis. *Nutrients*. 2026;18(6):891. PubMed PMID: doi:10.3390/nu18060891.
2. Yu L, Yan M, Wolff SM, Knue JD, Smith HM, Dolan CP, Muneoka K, Romero S, Cai JJ, Yun C, **Boland DJ**, Brunauer R, Dawson LA. FGF8 induces bone and joint regeneration at digit amputation wounds in neonate mice. *Bone*. 2026;202:117663. doi: <https://doi.org/10.1016/j.bone.2025.117663>.
3. Agac Cobanoglu D, Franklin S, Hu Y, **Boland DJ**, Song X. CAR Intrinsic Design Pre-Shapes Transcriptional and Metabolic Networks in CAR T Cells. *Metabolites*. 2026;16(1):52. PubMed PMID: doi:10.3390/metabo16010052.
4. Ogunlusi O, Sarkar M, Chakrabarti A., **Boland DJ**, Nguyen T, Sampson J, Nguyen C, Fails D, Jones-Hall Y, Fu L, Mallick B, Keene A, Jones J, Sarkar TR. (2025). LILRB4 regulates circadian disruption-induced mammary tumorigenesis via non-canonical WNT signaling pathway. *Nature Oncogene* 44, pages 4491–4504.
5. Mohajeri A, Shin SY, Padgham S, **Boland DJ**, Pittman Ratterree D, Blizman J, Han G, Woodman CR, Trache A. (2025). Mechanical signaling regulates vascular smooth muscle cell

adaptation in aging [Original Research]. *Frontiers in Physiology*, Volume 16 - 2025.
<https://doi.org/10.3389/fphys.2025.1593886>

6. Inoue DS, Pigg QW, Harris DR, Zhang D, **Boland DJ**, Janini Gomes M. (2025). Impact of Aerobic Training on Transcriptomic Changes in Skeletal Muscle of Rats with Cardiac Cachexia. *International Journal of Molecular Sciences*, 26(13), 6525.
<https://www.mdpi.com/1422-0067/26/13/6525>

7. Novikov B, **Boland DJ**, Mertsalov I, Scott H, Dauletbayeva S, Monagas-Valentin P, Panin V. (2025). CMP-sialic acid synthetase in *Drosophila* requires N-glycosylation of a non-canonical site. *Journal of Biological Chemistry*, 108483.
<https://doi.org/10.1016/j.jbc.2025.108483>

8. Ogunlusi O, Sarkar M, Chakrabarti A, **Boland DJ**, Nguyen T, Sampson J, Nguyen C, Fails D, Jones-Hall Y, Fu L, Mallick B, Keene A, Jones J, Sarkar TR. (2024). Circadian rhythm disruption alters mammary gland morphology and accelerates “cold” aggressive tumorigenesis through a LILRB4-dependent pathway. *bioRxiv*, 2024.2003.2019.585534.
<https://doi.org/10.1101/2024.03.19.585534>

9. **Boland DJ**, Cornejo-Corona I, Browne D R, Murphy RL, Mullet J, Okada S, Devarenne TP (2024). Reclassification of *Botryococcus braunii* chemical races into separate species based on a comparative genomics analysis. *PLOS ONE*, 19(7), e0304144.
<https://doi.org/10.1371/journal.pone.0304144>

10. **Boland DJ**, Ayres NM (2024). Cracking AlphaFold2: Leveraging the power of artificial intelligence in undergraduate biochemistry curriculums. *PLOS Computational Biology*, 20(6), e1012123. <https://doi.org/10.1371/journal.pcbi.1012123>

11. Cornejo-Corona I, **Boland DJ**, Devarenne TP. (2024). Method for isolation of high molecular weight genomic DNA from *Botryococcus* biomass. *PLOS ONE*, 19(7), e0301680.
<https://doi.org/10.1371/journal.pone.0301680>

12. **Boland, D. J.** (2023). AN INVESTIGATION OF THE GENOMIC SPACE AND SEARCH FOR HYDROCARBON BIOSYNTHETIC GENES IN THE GREEN MICROALGA *BOTRYOCOCCUS BRAUNII*. *TAMU Thesis*.

13. Amaro NA, Ammerman KR, **Boland DJ**, Bork CJ, Davis JV, Haskell DW, Hoeksema C, Juskevici SJ, Obrycki KM, Pacheco G, Padilla N, Rasmussen RA, Riggins-Walker TR, Sattar ZS, Skrypai Y, Hoerchler KB, De Lio AM, Gilbert TM (2019). Computational Studies of Relative Stabilities of Low-Spin d(6) cis- and trans-[M(en)2X2](+) Complexes (M = Co, Rh, Ir): Steric and Electronic Effects in the Context of the Structural Trans Influence. *J Phys Chem A*, 123(12), 2438-2446.
<https://doi.org/10.1021/acs.jpca.9b01740>

Invited Talks/Presentations/Abstracts:

1. Sarah M. Wolff, Ling Yu, Mingquan Yan, Joseph D. Knue, Hannah M. Smith, Ken Muneoka, Carissa Yun, **Devon J. Boland**, & Lindsay A. Dawson. "FGF8 induced murine joint regeneration is genetically and morphologically distinct from joint development." Abstract submitted to the 2025 Rolanette and Berdon Lawrence Bone Disease Program of Texas Scientific Retreat. Houston, TX, USA.

2. **Devon J. Boland**, and Charles M. Dickens. Introduction to AlphaFold2 on Grace. 5th Annual Texas A&M University Research Computing Symposium. Local symposium. Guest speaker/workshop leader, May 23rd-25th, 2022. Texas A&M University.
3. **Devon J. Boland**, and Timothy P. Devarenne. Looking Beyond Hydrocarbon Production in *Botryococcus braunii*. 2021 Genome Editing Symposium: Air, Land, and Sea. Local symposium, poster, October 27-29th, 2021. Texas A&M University.
4. **Devon J. Boland**, and Timothy P. Devarenne. Comparative Genomic Analysis of *Botryococcus braunii*. 1st International Symposium on Omic Technologies. International meeting, talk, October 20-22nd, 2021. Universidad De Antioquia, Columbia.
5. **Devon J. Boland**, Dionne H. Griffin, Christopher Smith, and James R. Horn. Engineering a pH-Dependent Anti- Hapten VHH Antibody. 30th Annual Gibbs Conference on Bio-thermodynamics. National meeting, poster, September 24-27th, 2016. Carbondale, IL.
6. **Devon J. Boland**, Emily E. Fiala, Dionne H. Griffin, and James R. Horn. Engineering a pH-Dependent Molecular Switch for Anti-Methotrexate VHH. Summer Research Symposium. University conference, talk, August 12th, 2016. Northern Illinois University.
7. **Devon J. Boland**, Dionne H. Griffin, and James R. Horn. Evaluation of a Module Based, Bivalent Reagent for Immunoassays. Undergraduate Research and Artistry Day 2016. University conference, poster, April 19th, 2016, Northern Illinois University.
8. **Devon J. Boland**, Dionne H. Griffin, and James R. Horn. Engineering a Module Based, Bivalent Reagent for Immunoassays. Undergraduate Research and Artistry Day 2015. University conference, poster, April 17th, 2015, Northern Illinois University.

Mentoring Experience:

2026-present	Sahithee Bandi, Undergraduate Researcher
2025-present	Sam Franklin Ph.D., Joint Mentorship with Dr. Chris Blazier TIGSS
2025-present	Chamundeswari Thyagarajan, M.S., Internship Mentor
2025-2025	Carrisa Yun M.S., Internship Mentor
2024-present	Dongmei Zhang Ph.D., Joint Mentorship with Dr. Jeff Cirillo MPIM
2024-2025	Jose Briceno, B.S., Undergraduate Researcher
2022-2023	Gabriele Golen, Undergraduate Researcher
2021-2022	Cecelia Hambleton PharmD, Undergraduate Researcher
2017-2018	Victoria Pho, Undergraduate Researcher
2016-2017	Emily Fiala, Undergraduate Researcher