CURRICULUM VITAE

PERSONAL DATA:

A. Phillip West, PhD

Contact information:

The Jackson Laboratory for Mammalian Genetics

600 Maine Street, Bar Harbor, ME 04609

phillip.west@jax.org, 207-288-6000, ext. 1272 (work), 203-751-3270 (mobile), www.westlaboratory.com

EXECUTIVE SUMMARY:

Training: PhD in immunobiology (2011, Yale University); Postdoctoral training in mitochondrial biology, immunology, and cancer biology (2011-2015, Yale School of Medicine).

Research: Mitochondria are multifaceted organelles central to numerous processes including energy metabolism, programmed cell death, and immunity. My research program aims to define how mitochondria function as central regulators of innate immune and inflammatory responses, and to characterize how mitochondria-immune crosstalk contributes to human disease and aging. I am particularly interested in delineating how mitochondrial genome (mtDNA) stress and sensing by the cGAS-STING pathway potentiate type I interferon and pro-inflammatory responses. My laboratory has made significant contributions to understanding how the mtDNA-cGAS-STING axis governs disease-promoting metabolic and immune rewiring in pre-clinical models of mitochondrial disease, heart failure, neurological disorders, and cancer.

Publications: 47 papers published; >10,300 total citations; 16 papers > 100 citations; Google Scholar: h-index = 29; i10-index = 33.

ACADEMIC APPOINTMENTS:

Associate Professor	08/2023 – present	The Jackson Laboratory for Mammalian Genetics, Bar Harbor, ME
Associate Professor	05/2023 – 08/2023	Department of Microbial Pathogenesis and Immunology School of Medicine, Texas A&M University, Bryan, TX
Affiliated Faculty	09/2017 – present	Interdisciplinary Graduate Program in Genetics and Genomics, Texas A&M University, College Station, TX
Assistant Professor	08/2016 – 05/2023	Department of Microbial Pathogenesis and Immunology School of Medicine, Texas A&M University, Bryan, TX

EDUCATION:

PhD	08/2004 - 05/2011	Immunobiology Thesis mentor: Sankar Ghosh, PhD Department of Immunobiology Yale School of Medicine, New Haven, CT
BS	09/2003 - 01/2007	Biological Sciences, *summa cum laude* Science Education, *summa cum laude* North Carolina State University, Raleigh, NC

POSTDOCTORAL TRAINING AND OTHER WORK EXPERIENCE:

Postdoctoral Fellow	05/2011 - 07/2015	Mitochondrial Biology, Immunology, and Cancer Biology Mentor: Gerald S. Shadel, PhD

		Department of Pathology Yale School of Medicine, New Haven, CT
Research Assistant	04/2002 - 08/2004	Innate Immunity and Biochemistry Mentor: Steven B. Mizel, PhD Department of Microbiology and Immunology Wake Forest University School of Medicine, Winston-Salem, NC

HONORS & AWARDS:

FACULTY:

- Research Excellence Award, Junior Investigator, Texas A&M University School of Medicine 2023
- Distinguished Seminar Series speaker, National Institute of Allergy and Infectious Diseases (NIAID), Rocky Mountain Laboratories (RML), Hamilton, MT 2021

POST-GRADUATE:

- American Cancer Society Postdoctoral Fellowship 2015 - 2017

GRADUATE AND UNDERGRADUATE:

- Edward L. Tatum Graduate Research Fellowship, Yale School of Medicine 2006 - 2007
- Phi Beta Kappa, North Carolina State University 2001
- North Carolina Teaching Fellows Scholarship 1997 - 2001

PROFESSIONAL ORGANIZATIONS AND SOCIETIES:

NATIONAL/INTERNATIONAL:

- International Cytokine & Interferon Society (ICIS), Member 2023 - present
- Sigma Xi Scientific Research Honor Society, Elected Member 2020 - present
- American Association of Immunologists, Member 2017 - present
- American Association for the Advancement of Science (AAAS), Member 2017 - present

PUBLICATIONS:

[P]post-doc under my supervision; [G]graduate student under my supervision; [U]undergraduate under my supervision

PEER-REVIEWED RESEARCH PUBLICATIONS (PRIMARY RESEARCH):

2023

1. Lei Y[G], VanPortfliet JJ[G], Chen Y[P], Bryant JD[P], Li Y, Fails D, Torres-Odio S[G], Ragan KB, Deng J, Mohan A, Wang B, Brahms ON, Yates SD, Spencer M, Tong CW, Bosenberg MW, West LC, Shadel GS, Shutt TE, Upton JW, Li P, **West AP**. Cooperative sensing of mitochondrial DNA by ZBP1 and cGAS promotes cardiotoxicity. **Cell**. 2023 Jul 6;186(14):3013-3032.e22. PMID: 37352855.

   Highlighted in: Nature Cardio. Res. and Cell Res.
2. Al Khatib I, Deng J, Lei Y[G], Torres-Odio S[G], Rojas GR, Newman LE, Chung BK, Symes A, Zhang H, Huang SN, Pommier Y, Khan A, Shadel GS, **West AP**, Gibson WT, Shutt TE. Activation of the cGAS-STING innate immune response in cells with deficient mitochondrial topoisomerase TOP1MT. **Hum Mol Genet**. 2023 Jul 20;32(15):2422-2440. PMID: 37129502.
3. Warren E, Gordon-Lipkin EM, Cheung F, Chen J, Mukherjee A, Apps R, Tsang JS, Jetmore J, Kruk S, Lei Y[G], **West AP***, McGuire PJ*. Inflammatory and interferon gene expression signatures in patients with mitochondrial disease. **J Transl Med**. 2023 May 19;21(1):331. PMID: 36909538. *, co-corresponding authors.
4. Farris LC, Torres-Odio S[G], Adams LG, **West AP***, Hyde JA*. Borrelia burgdorferi Engages Mammalian Type I IFN Responses via the cGAS-STING Pathway. **J Immunol.** 2023 Apr 17. PMID: 37067290. *, co-corresponding authors.

5. Keeney JN, Winters AD[G], Sitcheran R, **West AP***. NF-κB-Inducing Kinase Governs the Mitochondrial Respiratory Capacity, Differentiation, and Inflammatory Status of Innate Immune Cells. **J Immunol**. 2023 Apr 15;210(8):1123-1133. PMID: 36881877.
6. Scott KS, Chelette B, Chidomere C, **West AP**, Dantzer R. Cisplatin decreases voluntary wheel-running activity but does not impair food-motivated behavior in mice. **Brain Behav Immun.** 2023 Apr 17;111:169-176. PMID: 37076053.
7. Scott K, Boukelmoune N, Taniguchi C, **West AP**, Heijnen CJ, Dantzer R. Resolution of cisplatin-induced fatigue does not require endogenous interleukin-10 in male mice. **Behav Brain Res**. 2023 Apr 27;444:114381. PMID: 36870396.

2022

8. Key J, Gispert S, Koornneef L, Sleddens-Linkels E, Kohli A, Torres-Odio S[G], Koepf G, Amr S, Reichlmeir M, Harter PN, **West AP**, Münch C, Baarends WM, Auburger G. CLPP Depletion Causes Diplotene Arrest; Underlying Testis Mitochondrial Dysfunction Occurs with Accumulation of Perrault Proteins ERAL1, PEO1, and HARS2. **Cells**. 2022 Dec 22;12(1). PMID: 36611846.
9. Weindel CG, Martinez EL, Zhao X, Mabry CJ, Bell SL, Vail KJ, Coleman AK, VanPortfliet JJ[G], Zhao B, Wagner AR, Azam S, Scott HM, Li P, **West AP**, Karpac J, Patrick KL, Watson RO. Mitochondrial ROS promotes susceptibility to infection via gasdermin D-mediated necroptosis. **Cell**. 2022 Aug 18;185(17):3214-3231.e23. PMID: 35907404.
10. Bryant JD[P], Lei Y[G], VanPortfliet JJ[G], Winters AD[G], **West AP**. Assessing mitochondrial DNA release into the cytosol and subsequent activation of innate immune-related pathways in mammalian cells. **Curr. Prot.** 2022 Feb;2(2):e372. PMID: 35175686.
11. Scott K, Phan TT, **West AP**, Taniguchi CM, Dantzer R. Neutralizing interleukin-6 in tumor-bearing mice does not abrogate behavioral fatigue induced by Lewis lung carcinoma. **Behav. Brain. Res.** 2022 Jan 24;417:113607. PMID: 34571117.

2021

12. Key J, Torres-Odio S[G], Bach NC, Gispert S, Koepf G, Reichlmeir M, **West AP**, Prokisch H, Freisinger P, Newman WG, Shalev S, Sieber SA, Wittig I, Auburger G. Inactivity of Peptidase ClpP Causes Primary Accumulation of Mitochondrial Disaggregase ClpX with Its Interacting Nucleoid Proteins, and of mtDNA. **Cells.** 2021 Nov 29;10(12):3354. PMID: 34943861.
13. Vichaya EG, Ford BG, Moltenkine JM, Taniguchi CM, **West AP**, Dantzer R. Sex differences in the behavioral and immune responses of mice to tumor growth and cancer therapy. **Brain Behav. Imm.** 2021 Nov;98:161-172. PMID: 34418499.
14. Maletzko A, Key J, Wittig I, Gispert S, Koepf G, Canet-Pons J, Torres-Odio S[G], **West AP**, Auburger G. Increased presence of nuclear DNAJA3 and upregulation of cytosolic STAT1 and of nucleic acid sensors trigger innate immunity in the ClpP-null mouse. **Neurogenetics.** 2021 Oct;22(4):297-312. PMID: 34345994.
15. Bryant JD[P], Kodali M, Shuai B, Menissy SS[U], Graves PJ[U], Phan TT, Dantzer, R, Shetty AK, West LC, **West AP**. Neuroimmune mechanisms of cognitive impairment in a mouse model of Gulf War illness. **Brain Behav. Immun.** 2021 Oct;97:204-218. PMID: 34333111.
16. Sutherland TC, Sefiani A, Horvat D, Huntington TE, Lei Y[G], **West AP**, Geoffroy CG. Age-Dependent Decline in Neuron Growth Potential and Mitochondria Functions in Cortical Neurons. **Cells.** 2021 Jun 29;10(7):1625. PMID: 34209640.
17. Lei Y[G], Guerra Martinez C[P], Torres-Odio S[G], Bell SL, Birdwell CE[P], Bryant JD[P], Tong CW, Watson RO, West LC, **West AP**. Elevated type I interferon responses potentiate metabolic dysfunction, inflammation, and accelerated aging in mtDNA mutator mice. **Science Advances**. 2021 May 26;7(22):eabe7548. PMID: 34039599.
Highlighted in Lab Animal.
18. Torres-Odio S[G], Lei Y[G], Gispert S, Maletzko A, Key J, Menissy SS[U], Wittig I, Auburger G, **West AP**. Loss of Mitochondrial Protease CLPP Activates Type I IFN Responses through the Mitochondrial DNA-cGAS-STING Signaling Axis. **J. Immunol**. 2021 Apr 15;206(8):1890-1900. PMID: 33731338.
Featured on the Cover of JI and highlighted as a Top Read.

2020

19. Zhao B, Xu P, Rowlett CM, Jing T, Shinde O, Lei Y[G], **West AP**, Liu WR, Li P. The Molecular Basis of Tight Nuclear Tethering and Inactivation of cGAS. **Nature.** 2020 Nov;587(7835):673-677. PMID: 32911481.
20. Hoffpauir CT, Bell SL, West KO, Jing T, Wagner AR, Torres-Odio S[G], Cox JS, **West AP**, Li P, Patrick KL, Watson RO. TRIM14 Is a key regulator of the type I IFN response during Mycobacterium tuberculosis infection. **J Immunol.** 2020 Jul 1;205(1):153-167. PMID: 32404352.
21. Key J, Maletzko A, Kohli A, Gispert S, Torres-Odio S[G], Wittig I, Heidler J, Bárcena C, López-Otín C, Lei Y[G], **West AP**, Münch C, Auburger G. Loss of mitochondrial ClpP, Lonp1, and Tfam triggers transcriptional induction of Rnf213, a susceptibility factor for moyamoya disease. **Neurogenetics.** 2020 Jul;21(3):187-203. PMID: 32342250.

2019

22. Wu Z, Oeck S, **West AP**, Mangalhara KC, Sainz AG, Newman LE, Zhang XO, Wu L, Yan Q, Bosenberg MW, Liu Y, Sulkowski PL, Tripple V, Kaeck SM, Glazer PM, Shadel GS. Mitochondrial DNA stress signaling protects the nuclear genome. **Nat. Met.** 2019 Dec 9; 1, 1209–1218. PMID: 32395698.
23. Yambire KF, Rostosky C, Watanabe T, Pacheu-Grau D, Torres-Odio S[G], Sanchez-Guerrero A, Senderovich O, Meyron-Holtz EG, Milosevic I, Frahm J, **West AP**, Raimundo N. Impaired lysosomal acidification triggers iron deficiency and inflammation in vivo. **eLife.** 2019 Dec 3;8. PMID: 31793879.
24. West KO, Scott HM, Torres-Odio S[G], **West AP**, Patrick KL, Watson RO. The Splicing Factor hnRNP M Is a Critical Regulator of Innate Immune Gene Expression in Macrophages. **Cell Rep.** 2019 Nov 5;29(6):1594-1609.e5. PMID: 31693898.
25. Zhao B, Du F, Xu P, Shu C, Sankaran B, Bell SL, Liu M, Lei Y[G], Gao X, Fu X, Zhu F, Liu Y, Laganowsky A, Zheng X, Ji JY, **West AP**, Watson RO, Li P. A conserved PLPLRT/SD motif of STING mediates the recruitment and activation of TBK1. **Nature.** 2019 May;569(7758):718-722. PMID: 31118511.

2018

26. Araujo LF[G], Siena ADD, Plaça JR, Brotto DB, Barros II, Muys BR, Biagi CAO Jr, Peronni KC, Sousa JF, Molfetta GA, West LC, **West AP**, Leopoldino AM, Espreafico EM, Silva WA Jr. Mitochondrial transcription factor A (TFAM) shapes metabolic and invasion gene signatures in melanoma. **Sci Rep**. 2018 Sep 21;8(1):14190. PMID: 30242167.
27. Mlih M, Khericha M, Birdwell C[P], **West AP**, Karpac J. A virus-acquired host cytokine controls systemic aging by antagonizing apoptosis. **PLoS Biol**. 2018 Jul 23;16(7):e2005796. PMID: 30036358.
28. Kerur N, Fukuda S, Banerjee D, Kim Y, Fu D, Apicella I, Varshney A, Yasuma R, Fowler BJ, Baghdasaryan E, Marion KM, Huang X, Yasuma T, Hirano Y, Serbulea V, Ambati M, Ambati VL, Kajiwara Y, Ambati K, Hirahara S, Bastos-Carvalho A, Ogura Y, Terasaki H, Oshika T, Kim KB, Hinton DR, Leitinger N, Cambier JC, Buxbaum JD, Kenney MC, Jazwinski SM, Nagai H, Hara I, **West AP**, Fitzgerald KA, Sadda SR, Gelfand BD, Ambati J. cGAS drives noncanonical-inflammasome activation in age-related macular degeneration. **Nat. Med**. 2018 Jan;24(1):50-61. PMID: 29176737.

2015

29. Kang MJ, Yoon CM, Kim BH, Lee CM, Zhou Y, Sauler M, Homer R, Dhamija A, Boffa D, **West AP**, Shadel GS, Ting JP, Tedrow JR, Kaminski N, Kim WJ, Lee CG, Oh YM, Elias JA. Suppression of NLRX1 in chronic obstructive pulmonary disease. **J. Clin. Invest.** 2015, 125(6): 2458–2462. PMID: 25938787.
30. **West AP**, Khoury-Hanold W, Staron M, Tal MC, Pineda CM, Lang SM, Bestwick M, Duguay BA, Raimundo N, MacDuff DA, Kaech SM, Smiley JR, Means RE, Iwasaki A, Shadel GS. Mitochondrial DNA stress primes the antiviral innate immune response. **Nature.** 2015, 520(7548): 553–557. PMID: 25642965.
Highlighted in: Nat. Rev. Immunol., Immunol. Cell Biol., Cell Metab.
31. Thakar J, Mohanty S, **West AP,** Joshi SR, Ueda I, Wilson J, Blevins TP, Tsang S, Trentalange M, Siconolfi B, Park K, Gill TM, Belshe RB, Kaech SM, Shadel GS, Kleinstein SH, Shaw AC. Aging-dependent alterations in gene expression and a mitochondrial signature of responsiveness to human influenza vaccination. **Aging (Albany NY).** 2015, 1:38-52. PMID: 25596819.

2014

32. Rongvaux A, Jackson R, Harman C, Li T, **West AP**, de Zoete MR, Wu Y, Yordy B, Lakhani SA, Kuan C-Y, Taniguchi T, Shadel GS, Chen ZJ, Iwasaki A, Flavell RA. Apoptotic caspases prevent the induction of type I interferons by mitochondrial DNA. **Cell.** 2014, 159:1563-77. PMID: 25525875.
33. Mannam P, Shinn AS, Srivastava A, Neamu RF, Walker WE, Bohanon M, Merkel J, Kang MJ, Cruz CS, Ahasic AM, Pisani MA, Trentalange M, **West AP**, Shadel GS, Elias JA, Lee PJ. MKK3 regulates mitochondrial biogenesis and mitophagy in sepsis-induced lung injury. **Am. J. Physiol. Lung Cell Mol. Physiol.** 2014, 306:L604-19. PMID: 24487387.

2011

34. **West AP**, Brodsky I, Rahner C., Woo DK, Erdjument-Bromage , Tempst P., Walsh MC, Choi, Y, Shadel GS, and Ghosh S. TLR signaling augments macrophage bactericidal activity through mitochondrial ROS. **Nature.** 2011, 472:476-480. PMID: 21525932.

2010

35. Rao P, Hayden MS, Long M, Scott ML, **West AP**, Zhang D, Oeckinghaus A, Lynch C, Hoffmann A, Baltimore D, Ghosh S. IkappaBbeta acts to inhibit and activate gene expression during the inflammatory response. **Nature.** 2010, 466:1115-9. PMID: 20740013.
36. Sengupta D, Koblansky A, Gaines J, Brown T, **West AP**, Zhang D, Nishikawa T, Park SG, Roop RM 2nd, Ghosh S. Subversion of innate immune responses by Brucella through the targeted degradation of the TLR signaling adapter, MAL. **J. Immunol.** 2010, 184:956-64. PMID: 20018612.

2003-2005

37. **West AP**, Dancho BA, Mizel SB. Gangliosides inhibit flagellin signaling in the absence of an effect on flagellin binding to Toll-like receptor 5. **J. Biol. Chem.** 2005, 280:9482-8. PMID: 15632166.
38. Mizel SB, Honko AN, Moors MA, Smith PS, and **West AP**. Induction of macrophage nitric oxide production by Gram-negative flagellin involves signaling via heteromeric Toll-like receptor 5/Toll-like receptor 4 complexes. **J. Immunol.** 2003, 170:6217-23. PMID: 12794153.
39. Mizel SB, **West AP**, and Hantgan RR. Identification of a sequence in human Toll-like receptor 5 required for the binding of Gram-negative flagellin. **J. Biol. Chem.** 2003, 278:23624-9. PMID: 12711596.

PEER-REVIEWED RESEARCH PUBLICATIONS (INVITED PERSPECTIVES AND REVIEWS):

2019

40. Stoker ML, Newport E, Hulit JC, **West AP**, Morten KJ. Impact of pharmacological agents on mitochondrial function: a growing opportunity?. **Biochem. Soc. Trans.** 2019 Nov 7. PMID: 31696924.

2018

41. **West AP**. Editorial introduction to Special Issue: Mitochondria in Innate and Adaptive Immunity. **Mitochondrion.** 2018 Jul;41:1. PMID: 29887010.

2017

42. **West AP**. Mitochondrial dysfunction as a trigger of innate immune responses and inflammation. **Toxicology**. 2017 Nov 1;391:54-63. PMID: 28765055.
43. **West AP***, Shadel GS*. Mitochondrial DNA in innate immune responses and inflammatory pathology. **Nat. Rev. Immunol**. 2017 Jun;17(6):363–375. PMID: 28393922. *, co-corresponding authors.

2011

44. **West AP**, Shadel GS, Ghosh S. Mitochondria in innate immune responses. **Nat. Rev. Immunol.** 2011 Jun;11(6):389-402. PMID: 21597473.

2006

45. Hayden MS, **West AP**, Ghosh S. SnapShot: NF-kappaB signaling pathways. **Cell.** 2006, 127:1289-7. PMID: 17174900.
46. Hayden MS, **West AP**, Ghosh S. NF-kappaB and the immune response. **Oncogene.** 2006, 25:6758-80. PMID: 17072327.

47. **West AP**, Koblansky AA, Ghosh S. Recognition and signaling by Toll-like receptors. **Annu. Rev. Cell Dev. Bio.** 2006, 22:409-37. PMID: 16822173.

MEDIA COVERAGE HIGHLIGHTING WEST LAB RESEARCH:

- "Heart failure after chemotherapy: New insights light the way for possible therapeutic" – Vital Record 06/2023
- "Mitochondria, the immune system and cancer: discovering new insights with spatial technologies" – Talking Techniques Podcast, BioTechniques 06/2023
- "Targeting a DNA sensor could yield new treatments for Lyme disease" – Vital Record 05/2023
- "Torres Odio Awarded F31 Pre-Doctoral Fellowship" – Vital Record 12/2021
- "Lei Awarded American Heart Association Fellowship" – Vital Record 11/2021
- "Could mitochondria be the key to a healthy brain?" – Knowable Magazine 06/2021
- "Dynamic Duo Unlocks the Power of Mitochondria" – Vital Record 04/2018
- "Why This Researcher Studies Mitochondria" – Neuronline 12/2017

RESEARCH SUPPORT:

ACTIVE RESEARCH SUPPORT:

E01 HT9425-23-1-0791 West (PI) 08/15/23-08/14/26
Targeting the cGAS-STING Axis to Limit Inflammation and Neuropathology in Gulf War Illness
This proposal will mechanistically define roles for innate immune system dysregulation, persistent STING signaling, and inflammation in GWI pathobiology a pre-clinical mouse model of Gulf War Illness-related chemical exposure. It will also test a new STING agonist as a potential therapy for GWI.
Role: PI
$500,000 direct

W81XWH-20-1-0150 West (PI) 09/01/20-08/31/24
Department of Defense, CDMRP
Inborn Errors of Innate Immunity and Impaired Anti-Microbial Defenses in Primary Mitochondrial Diseases
This project will establish that chronic type I interferon signaling impacts innate immune cell composition and function in mitochondrial disease, and then determine how immune rewiring increases susceptibility to respiratory pathogens and systemic inflammatory responses in mouse models of primary mitochondrial disease.
Role: PI
$500,000 direct

R01HL148153 West (PI) 08/05/20-07/31/25
NIH/NHLBI
Type I Interferon Responses in the Pathobiology of Anthracycline-induced Cardiotoxicity
The overall objective of this proposal is to comprehensively define how type I interferon signaling, a pleiotropic innate immune pathway, potentiates the cardiotoxic effects of anthracycline chemotherapy. The central hypothesis is that Doxorubicin-induced DNA damage triggers the STING-dependent production of type I interferons in multiple cardiac cell populations, which in turn drives a self-propagating cycle of mitochondrial dysfunction, reactive oxygen species production, and cardiac cell death that contribute to cardiac remodeling and failure.
Role: PI
$1,250,000 direct

R01CA193522 Dantzer (PI) 07/03/19-06/30/24
NIH/NCI
Metabolic Basis of Cancer-Related Fatigue
This project will define roles for metabolic rewiring and innate immune signaling in cancer therapy-related fatigue. I will

contribute expertise in innate immunity and guide experiments in my laboratory to determine roles for the cGAS-STING and AIM2 DNA sensing pathways in cancer-related fatigue. This is a collaborative project with Dr. Robert Dantzer at M.D. Anderson Cancer Center.
Role: Consortium/Subaward PI
$160,000 direct

COMPLETED RESEARCH SUPPORT:

R01AI155621 Watson, Patrick, West (MPIs) 07/01/21-06/30/23
NIH/NIAID
Mitochondria as crucial regulators of innate immune outcomes during Mycobacterium tuberculosis infection
The overall objective of this application is to define the molecular contributions of pathogen-induced mitochondrial damage and host mitochondrial mutations to innate immune outcomes during Mycobacterium tuberculosis infection in macrophages ex vivo and in mouse models of human disease.
Role: MPI (Watson, Contact PI)
$1,928,000 direct

R21AI153879 West, Hyde (MPIs) 09/15/21-08/31/23
NIH/NIAID
Elucidating the Bacterial and Host Mechanisms Governing B. burgdorferi-Related Type I Interferon Responses
This proposal will test the hypothesis that cGAS-STING and B. burgdorferi lp36 genes control the IFN-I response to shape infection kinetics and Lyme-related immunopathology.
Role: MPI (Contact PI)
$275,000 direct

W81XWH-21-1-0178 Gomer, West (MPIs) 04/15/21-04/14/23
Department of Defense, CDMRP
Does inhibiting fibrosis-type inflammation reduce symptoms in a mouse model of GWI?
The objective of this grant is to determine whether two potential therapeutics that we have found to inhibit inflammation will reduce neurobehavioral and immune symptoms in a mouse model of Gulf War Illness.
Role: MPI
$150,000 direct

X-Grants Program Porter, West, Sitcheran, Gohil, Gaharwar (MPIs) 09/01/21-08/14/23
Texas A&M University
MitoX: Targeting Mitochondria to Improve Human Health
The main objectives of this proposal are to investigate mitochondrial biology and mechanisms of mitochondrial dysfunction, as well as develop novel therapeutics for oncologic, metabolic, and genetic diseases. Our motivation is based on evidence that mitochondria play a pivotal role in responding to various cellular stressors and metabolic changes that occur both intra- and extra-cellularly. We will utilize the X-grant mechanism to facilitate synergy among ten laboratories and five colleges to develop novel, mitochondria-based approaches to improve human health.
Role: MPI
$175,000 direct

R01AI090142 Samuel (PI) 04/01/19-08/14/23
NIH/NIAID
Identification and Role of Type IV Secretion Effector Proteins in Coxiella burnetii
Coxiella burnetii, the intracellular bacterial pathogen the causes Q fever, express a variety of effector proteins via type 4 secretion that modulate host function to enable replication in macrophage/monocytic cells. This application will identify T4SS-dependent virulence determinants that modulate macrophage signaling pathways using pathogen effector mutants and host signaling mutants that are essential for restricting replication or modulating response to infection. I will contribute innate immunity expertise to this work.

Role: Co-I
$45,000 direct

Triads for Transformation (T3) Grant West (PI) 01/01/21-12/31/22
Texas A&M University
Defining How The Mitochondrial Antiviral Protein Cmpk2 Restricts Coronavirus Infection
This project assembles a multi-disciplinary team of TAMU researchers to fundamentally advance our knowledge of how the novel protein CMPK2 functions in mitochondria, tissue homeostasis, and antiviral innate immunity using a diverse toolkit of cell and animal models.
Role: PI
$32,000 direct

W81XWH-17-1-0446 West (PI) 09/01/17-08/31/22
Department of Defense, CDMRP
Mitochondrial Dysfunction and Aberrant Immune Activation in the Pathobiology of Gulf War Illness
The overall objective of this New Investigator Award is to elucidate the etiology of Gulf War Illness (GWI) in terms of mitochondrial dysfunction and subsequent immune activation.
Role: PI
$500,000 direct

Grant 650332 Geoffroy (PI) 07/31/20-07/30/22
Craig H. Neilsen Foundation
Age-dependent decline of axon growth via reduction of SOCS3/STAT3 signaling
This project will explore the hypothesis that changes in the STAT3 pathway occurring with age reduce axonal growth via reduction of transcriptional and mitochondrial activity. I am serving as Co-I and am contributing to the mitochondrial angles of the project.
Role: Co-I
$6,000 direct

Triads for Transformation (T3) Grant West (PI) 01/01/19-12/31/20
Texas A&M University
Defining how Mitochondrial DNA Replication Intermediates Engage the Cytosolic DNA Sensing Machinery
This project will assemble a multi-disciplinary team of TAMU researchers to define how unique mitochondrial DNA sequences are sensed by the cytosolic DNA recognition machinery and will explore how novel innate immune receptors participate in type I interferon induction downstream of mitochondrial genome instability.
Role: PI
$32,000 direct

Dharam Ablashai Pilot Grant Program West (PI) 02/01/18-07/31/19
Human Herpes Virus 6 (HHV6) Foundation
Defining how HHV-6 Induces Mitochondrial Dysfunction and Metabolic Alterations in Human T-lymphoblast Lines
The goal of this study was to define how human herpesvirus 6 disrupts mitochondrial function by altering mitochondrial gene expression and oxidative phosphorylation, leading to metabolic and signaling imbalances that influence cellular homeostasis and anti-HHV-6 immunity.
Role: PI
$26,000 direct

RP170734 West (PI) 09/01/17-02/28/20
Cancer Prevention and Research Institute of Texas (CPRIT)
Mitochondrial DNA Instability Engages a Cancer-Related Interferon Program to Modify the Immune Microenvironment and NAD+ Metabolome and Enhance Melanoma Growth
This objective of this High-Impact/High-Risk Award is to define the molecular, cellular, and immune mechanisms by

which mitochondrial dysfunction and mtDNA instability promote melanoma growth and spread.
Role: PI
$200,000 direct

W81XWH-17-1-0052 West (PI) 08/01/17-12/31/19
Department of Defense, CDMRP
Innate Immune Signaling and Type I Interferon Responses as Novel Modifiers of Mitochondrial Disease Pathology
The overall objective of this Discovery Award is to explore the novel hypothesis that mitochondrial DNA instability resulting from polymerase gamma (POLG) mutations aberrantly engages the innate immune system, resulting in IFN-I and proinflammatory responses that exacerbate the pathology of POLG-related mitochondrial disorders. This grant has supported the generation of preliminary data on the role of mtDNA instability in driving type I interferon responses in cardiomyopathy.
Role: PI
$200,000 direct

PF-13-035-01-DMC West (PI) 01/01/13-12/31/15
American Cancer Society
Mitochondrial Dysfunction and Stress Signaling in Melanoma Pathogenesis
The goal of this Postdoctoral Fellowship was to determine how mitochondrial DNA instability and stress influence melanoma tumor growth and metastasis by enhancing pro-tumorigenic signaling and inhibiting anti-tumor immunity.
Role: PI
$150,000 direct

NATIONAL FELLOWSHIP AWARDS FOR TRAINEES:

F31HL160141 Torres Odio (PI) 09/01/21-08/12/23
NIH – NRSA
Elucidating the Roles of CMPK2 in Mitochondrial Homeostasis and Antiviral Immunity
The goal of this fellowship is to fundamentally advance our knowledge of how the novel protein CMPK2 functions in mitochondria, tissue homeostasis, and antiviral innate immunity.
Role: Primary Mentor
$111,129 direct

Grant 825908 Lei (PI) 03/01/21-03/31/22
American Heart Association – Pre-Doctoral Fellowship
A mitochondrial innate immune signaling axis contributes to the pathogenesis of doxorubicin-induced cardiotoxicity
The goal of this fellowship is to define how the innate immune system contributes to chemotherapy related cardiotoxicity.
Role: Primary Mentor
$31,250 direct

INVITED AND/OR PEER-SELECTED ORAL PRESENTATIONS:

INTERNATIONAL MEETINGS:

1. Mitochondrial DNA sensing in type I interferon responses and disease – Nucleic Acid Immunity Meeting, Edinburgh, UK 09/2022
2. Mitochondria DNA stress in innate immunity and disease – 45th Annual Meeting of the Japanese Society for Immunology, Okinawa, Japan 12/2016
3. Mitochondrial DNA stress in innate immunity – 2015 MitOX Meeting, Department of Obstetrics & Gynaecology, University of Oxford, UK 12/2015

4. Mitochondrial DNA Stress engages a cell-intrinsic antiviral signaling program – Keystone Symposia on Innate Immunity, Metabolism, and Vascular Injury, Whistler, Canada 03/2014

NATIONAL MEETINGS:

1. Mitochondrial Control of Innate Immunity and Inflammation: Implications for Human Disease – 62nd Annual Society of Toxicology Annual Meeting, Nashville, TN 03/2023
2. ZBP1 sequesters cGAS in the cytoplasm and sustains type I interferon responses to mitochondrial DNA – Gordon Research Conference, Immunometabolism in Health and Disease 06/2022
3. Mitochondrial control of innate immunity and inflammation – United Mitochondrial Disease Foundation (UMDF) Annual Meeting, online webinar 06/2021
4. Mitochondrial control of innate immunity and inflammation – Society for Inherited Metabolic Diseases (SIMD) Virtual Event, online webinar 05/2021
5. Mitochondrial control of innate immune responses in disease and aging – Spring 2021 MITOtalks Series, online webinar 02/2021
6. Mitochondrial control of innate immune responses in disease and aging – United Mitochondrial Disease Foundation (UMDF) Mito Friday Seminar Series, online webinar 06/2020
7. Imbalances in type I interferon and Nrf2 signaling drive myeloid reprogramming and tissue dysfunction in a model of mitochondrial DNA disease – The New York Academy of Sciences (NYAS) Colloquium: Mitochondria in Complex Diseases, online webinar 04/2020
8. Mitochondrial control of innate immune responses – American Autoimmune Related Diseases Association (AARDA) Fall 2019 Colloquium on Metabolic Alterations/Dysfunction in Autoimmunity, Washington, DC 10/2019
9. Mitochondrial control of innate immune responses in disease and aging – 9th Regional Translational Research in Mitochondria, Aging, and Disease Symposium, Children's Hospital of Philadelphia, Philadelphia, PA 09/2019
10. Mitochondrial control of innate immunity and inflammation: implications for mitochondrial disease – United Mitochondrial Disease Foundation (UMDF) Annual Meeting, Washington, DC 06/2019
11. Mitochondrial DNA sensing in inflammatory responses and mitochondrial disease – Cell Symposium: Multifaceted Mitochondria, San Diego, CA 06/2018
12. Mitochondrial dysfunction as a trigger of innate immunity and inflammation – American Autoimmune Related Diseases Association (AARDA) Spring 2018 Colloquium on Sleep, Fatigue, and Autoimmune Disease, Washington, DC 04/2018
13. Mitochondrial control of innate immunity and inflammation – Cell Biology of ALS: Emerging Themes from Human Genetics, Banbury Center of Cold Spring Harbor 10/2017
14. Mitochondrial DNA stress in innate immunity and type I interferon responses – Inflammation and the Environment: The Role of the Mitochondrion and Energy Metabolism, National Institute of Environmental Health Sciences (NIEHS), Durham, NC 06/2016
15. Mitochondrial DNA stress primes the antiviral innate immune response – Biophysical Society Annual Meeting, Bioenergetics Subgroup, Baltimore, MD 02/2015
16. Altered mitochondrial DNA dynamics elicit a cell-intrinsic antiviral signaling program – Keystone Symposia on Mitochondrial Dynamics and Physiology, Sante Fe, NM 02/2014
17. Novel roles for mitochondria in innate immune responses – Pediatric Academic Societies Annual Meeting, Washington, DC 05/2013

INVITED SEMINARS (NATIONAL OR INTERNATIONAL):

1. Mitochondrial control of innate immunity and inflammation: implications for human disease – Dept. of Veterinary Pathobiology, Texas A&M University, College Station, TX 01/2023
2. Mitochondrial control of innate immunity and inflammation: implications for human disease – Department of Immunology, UT Southwestern Medical Center, Dallas, TX 12/2022
3. Mitochondrial control of innate immunity in metabolic and neuroinflammatory diseases – School of Neuroscience Innovator Seminar Series, Virginia Tech, Blacksburg, VA 04/2022
4. Mitochondrial control of innate immunity and inflammation: implications for human disease – Integrated Faculty of Reproductive Biology (IFRB), Texas A&M University, College Station, TX 04/2022
5. Mitochondrial control of innate immunity and inflammation: implications for human disease – The Jackson Laboratory for Mammalian Genetics, Bar Harbor, ME 04/2022
6. Mitochondrial control of innate immunity and inflammation – Department of Biological Sciences Seminar Series, Auburn University, Auburn, AL 01/2022
7. Mitochondrial control of innate immunity and inflammation – Distinguished Seminar Series, Rocky Mountain Laboratories (RML), National Institute of Allergy and Infectious Diseases, NIH, Hamilton, MT 12/2021
8. Mitochondrial control of inflammatory responses: implications for disease and aging – Summer Minicourse "Ageing: from fundamental biology to societal impact," University of Coimbra, Portugal, online webinar 07/2021
9. Mitochondrial control of innate immunity in disease and aging – Nuffield Department of Women's & Reproductive Health, Oxford University, UK, online webinar 06/2021
10. Mitochondrial control of innate immune responses in disease and aging – National Institute of Environmental Health Sciences (NIEHS) Immunity, Inflammation, & Disease Branch Seminar Series, Research Triangle Park, NC, online webinar 05/2021
11. Mitochondria-innate immune crosstalk in the pathobiology of chemotherapy-induced cardiotoxicity – Texas A&M Cancer Biology Seminar Series, College Station, TX, online webinar 10/2020
12. The mtDNA-cGAS-STING axis: new insight into signaling mechanisms and disease relevance – Boehringer Ingelheim Immunology and Respiratory Disease Seminar Series, Ridgefield, CT, online webinar 06/2020
13. Mitochondrial control of innate immunity in health and disease – Cedars-Sinai Immunology Seminar Series, Los Angeles, CA 03/2020
14. Mitochondrial control of innate immunity in health and disease – Duke University Integrated Toxicology and Environmental Health Program, Durham, NC 01/2020
15. Mitochondrial control of innate immunity and inflammation: implications for mitochondrial disease and aging – Wayne State University Center for Molecular Medicine and Genetics, Detroit, MI 12/2019
16. Mitochondrial DNA stress in innate immunity and disease – Dept. of Veterinary Pathobiology, Texas A&M University, College Station, TX 10/2019
17. Mitochondrial control of innate immunity in health and disease – Integrated Faculty of Reproductive Biology (IFRB), Texas A&M University, College Station, TX 04/2019
18. Mitochondrial DNA stress and type I interferon responses: implications for human disease – Department of Cell Biology and Pathology, Columbia University Medical Center, New York, NY 04/2019
19. Mitochondrial DNA stress and type I interferon responses: implications for human disease – Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai, New York, NY 10/2018
20. Mitochondrial DNA stress in innate immunity and disease – Dept. of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN 09/2018

21. Mitochondrial DNA instability as a driver of inflammation and disease – Dept. of Symptom Research, M.D. Anderson Cancer Center, Houston, TX 06/2018
22. Mitochondrial DNA instability as a driver of inflammation and disease – Dept. of Experimental Neuroscience, Goethe University Medical School, Frankfurt, Germany 02/2018
23. Mitochondrial DNA stress in innate immunity and disease – Dept. of Medical Physiology, Texas A&M University Health Science Center, College Station, TX 12/2017
24. Mitochondrial DNA stress in innate immunity and disease – Dept. of Biochemistry and Biophysics, Texas A&M University, College Station, TX 10/2017
25. Mitochondrial DNA stress in innate immunity and disease – Genetics and Genomics Seminar Series, Texas A&M University, College Station, TX 09/2017
26. Mitochondrial DNA stress in innate immunity and disease – Ragon Institute of MGH, MIT, and Harvard, Boston, MA 09/2017
27. Mitochondrial stress in innate immunity and disease – Leading Edge of Cell Biology Seminar Series, Department of Cell Biology, UT Southwestern Medical Center, Dallas, TX 05/2016
28. Mitochondrial stress in innate immunity and disease – Department of Biology and the South Texas Center for Emerging Infectious Diseases, UT San Antonio, San Antonio, TX 02/2016
29. Mitochondrial DNA stress in antiviral immunity and cancer – Institute of Cellular Biochemistry, University of Gottingen, Germany 11/2015
30. Mitochondrial stress in innate immunity and cancer – Department of Microbial Pathogenesis and Immunology, Texas A&M Health Science Center, College Station, TX 11/2015
31. Mitochondrial stress in innate immunity and disease – Department of Biological Sciences, Southern Methodist University, Dallas, TX 12/2014

MENTORING AND TEACHING:

MENTORING:

- **Postdoctoral Research Associates**

- Sara Milligan	PhD in Biology (Texas A&M University) Current position: Quality Control Manager, Hendrix Industries	2023
- Yi-Fan Chen	PhD in Comparative Biomedical Sciences (LSU)	2020 - 2023
- Joshua Bryant	PhD in Biochemistry (UT Austin) Current position: Research Scientist, Dept. of Microbial Pathogenesis and Immunology, Texas A&M School of Medicine	2019 – 2023
- Christine Birdwell	PhD in Virology (LSU-Shreveport) Current position: Research Scientist, Dept. of Leukemia MD Anderson Cancer Center	2017 - 2020
- Camilla Guerra Martinez	PhD in Immunology (Brazil) Current position: Assistant Professor, Dept. of Medicine Universidade Ceuma, Brazil	2017 - 2019

- **Graduate Student Trainees**

- Abigail Schoeller	PhD Candidate, Tufts@JAX Genetics PhD Program	2022 - present
- Morgan Chapman	MD/PhD candidate in Medical Sciences	2022 - 2023
- Jordyn VanPortfliet	PhD candidate in Genetics and Genomics	2020 - present
- Ashley Winters	MS candidate in Medical Sciences Current position: Assistant Professor, Dept. of Medicine	2019 – 2022
- Sylvia Torres Odio	PhD candidate in Medical Sciences	2018 - 2023

NIH NRSA F31-Diversity Pre-Doctoral Fellowship Recipient
2022 AAI Minority Scientist Award Recipient

- Yuanjiu Abby Lei	PhD candidate in Medical Sciences American Heart Association Pre-Doctoral Fellowship Recipient 2022 Texas A&M School of Medicine PhD Research Excellence Award Recipient 2021 Keystone Symposium Travel Award Current Position, Postdoctoral Associate, Deep Dixit Lab, Depts. of Pathology and Immunobiology, Yale School of Medicine	2016 - 2023
- Luiza Ferreira de Araújo	Sao Paulo FAPESP Graduate Fellowship Recipient and Visiting Scholar Current position: Medical Manager, Bispecifics (Hematology), Janssen Brasil	2015 - 2016

- **Undergraduate Trainees**

- Morgan Smith	Texas A&M University	2023
- Quinn Fan	Texas A&M University	2022 - 2023
- Sara Ali	Texas A&M University	2022 - 2023
- Grace Selner	Texas A&M University	2020 - 2023
- Mary Stalman	University of Alabama Summer Undergraduate Research Fellow	2021
- Kaysee Faas	Texas A&M University	2019 - 2022
- Akhila Reddy	Texas Tech University Summer Undergraduate Research Fellow	2019
- Serena Kang	Texas A&M University	2018 - 2020
- Sayeed Menissy	Texas A&M University	2018 - 2022
- Paige Donart	Texas A&M University	2017 - 2019
- Melissa Pineda	Texas A&M University	2016 - 2019

PHD THESIS COMMITTEES:

- Thien Phan	Rutkowski Lab, SOM Medical Sciences PhD	2022 - present
- Tatlock Lauten	Case Lab, SOM Medical Sciences PhD	2022 - present
- Daniela Ayala	Srinivasan Lab, SOM Medical Sciences PhD	2022 - present
- Sheida Hadjazi	Sitcheran and Amrein Labs, SOM Medical Sciences PhD	2021 - present
- Nancy Mize Gonzalez	Chen Lab, SOM MD/PhD	2021 - present
- Justin Keeney	Sitcheran Lab, SOM Medical Sciences PhD	2020 - 2023
- Heidi Creed	Rutkowski Lab, SOM Medical Sciences PhD	2020 - present
- Linghao Hu	Walsh Lab, Biomedical Engineering PhD	2020 - 2023
- Ramiah Vickers	Porter Lab, Genetics PhD	2020 - present
- Lauren Farris	Hyde Lab, SOM Medical Sciences PhD	2019 - present
- Haley Scott	Patrick Lab, SOM Medical Sciences PhD	2019 - present
- Lilia Sanchez	Porter Lab, Genetics PhD	2019 - present
- Angela Arabiotorre Duran	Bankaitis Lab, SOM Medical Sciences PhD	2019 - 2023
- Preston Arnold	Li Lab, SOM MD/PhD	2019 - 2022
- Hao-Yun Peng	Song Lab, Biochemistry and Biophysics PhD	2019 - 2023
- Kristin Scoggin	Threadgill and Andrews-Polymenis Labs, Genetics PhD	2018 - 2021
- Taylor Huntington	Srinivasan Lab, SOM Medical Sciences PhD	2018 - 2022

- Kelsi West	Watson Lab, Genetics PhD	2017 - 2020
- Michael Kamradt	Sitcheran Lab, SOM Medical Sciences PhD (Thesis Co-Chair)	2017 - 2020
- Sahar Eshghjoo	Alaniz Lab, SOM Medical Sciences PhD	2017 - 2020
- Saptha Vijayan	Kobayashi Lab, SOM Medical Sciences PhD	2016 - 2018

TEACHING:

- **Texas A&M School of Medicine MD Pre-Clerkship Curriculum**
  - MEID 609 | Introduction to Disease – Lecturer (175 students, 2 contact hrs.) 2022 - 2023
    Content: innate immunity and initiation of inflammatory responses
  - MEID 618 | Medical Student Grand Rounds – Mentor (5 students, 10 contact hrs.) 2022 - 2022
    Content: mentor MD students on PubMed literature searches, analysis of primary literature, preparation and delivery of a scientific talk

- **Texas A&M School of Medicine PhD Curriculum**
  - MSCI 635 | Mammalian Immunobiology – Course Director (30 students, 20 contact hrs.) 2021 - 2023
    Leadership and Content: designed a new introductory immunology course for MS and PhD students across Texas A&M and recruited faculty in 2021; deliver lectures on innate immunity, complement, initiation of inflammatory responses and immunometabolism
  - MSCI 603 | Tumor Microenvironment and Metastasis – Lecturer (10 students, 2 contact hrs.) 2020 - 2023
    Content: cancer metabolism and immunometabolism in the tumor microenvironment
  - MSCI 601 | Contemporary Topics in Advanced Cell Biology – Lecturer (15 students, 7 contact hrs.) 2017 - 2019
    Content: innate immunity, mitochondrial biology, and immunometabolism
  - MSCI 630 | Pathogenesis of Human Disease – Lecturer (8 students, 3 contact hrs.) 2017 - 2018
    Content: innate immunity, mitochondrial biology, and immunometabolism
  - MPIM 601 | Microbial Pathogenesis of Human Disease – Lecturer (12 students, 2 contact hrs.) 2017 - 2021
    Content: innate immunity to pathogens
  - MPIM 602 | Immunoregulation – Lecturer (10 students, 4 contact hrs.) 2017 - 2021
    Content: innate immunity and immunometabolism

EXTRAMURAL PROFESSIONAL SERVICE:

INTERNATIONAL/NATIONAL/REGIONAL MEETINGS:

- Texas Symposium on Critical Topics in Immunology, Co-organizer and discussion moderator 2023
- Metabolism in Host Defense Session, Gordon Research Conference on Immunometabolism in Health and Disease, Discussion moderator 2022
- Colloquium on Metabolic Defects/Alterations in Autoimmunity, Autoimmune Association, Washington, DC, Co-organizer with Dr. Noel Rose 2019

EDITORIAL POSITIONS:

- Review Editor, *Frontiers in Cell and Developmental Biology*, Epigenomics and Epigenetics 2021 - present
- Editorial Board Member, *Mitochondrion* 2019 - present
- Editorial Board Member, *International Journal of Molecular Sciences* 2018 - 2021
  Biochemistry, Molecular, and Cellular Biology Section
- Guest Editor, Commissioned Review Issue 'Mitochondria in Innate and Adaptive Immunity,' *Mitochondrion* 2017 - 2018

GRANT REVIEW PANELS:

- Ad hoc Reviewer, National Heart, Lung, and Blood Institute (NHLBI) Mentored Transition to Independence (MTI) Study Section 2022
- DoD Peer Reviewed Medical Research Program (PRMRP), Gulf War Illness Research Program (GWIRP) 2021
- DoD Peer Reviewed Medical Research Program (PRMRP), Melanoma Research Program (MRP) 2020
- DoD Peer Reviewed Medical Research Program (PRMRP), Gulf War Illness Research Program (GWIRP) 2020
- External Reviewer, Barth Syndrome Foundation 2019
- External Reviewer, Research, Science, & Society Innovation Fund, Austrian Academy of Sciences 2019
- DoD Peer Reviewed Medical Research Program (PRMRP), Gulf War Illness Research Program (GWIRP) 2017
- External Reviewer, Hoffman Program on Chemicals and Health Pilot Grant Program, Harvard T.H. Chan School of Public Health, Cambridge, MA 2017
- External Reviewer, Antimicrobial Resistance Collaborative Initiative, Medical Research Council, UK 2016
- External Reviewer, Starting Grants Program, Fondazione Cassa di Risparmio di Padova e Rovigo, University of Padova, Italy 2015

JOURNAL REVIEW:

(#)number of manuscripts reviewed since 2016

- **Microbiology and Immunology Journals:** *Immunity[2], Journal of Immunology[2], mBio[1], Nature Microbiology[1], Nature Reviews Immunology[1], PLOS Pathogens[2]*
- **Metabolism Journals:** *Cell Metabolism[2], Mitochondrion[2], Molecular Genetics and Metabolism[1], Nature Metabolism[3]*
- **Multidisciplinary Biomedical Journals:** *Biological Reviews[1], Cell[3], Cell Reports[6], Clinical and Translational Medicine[2], Current Biology[1], iScience[1], Journal of the American Chemical Society[1], Journal of Clinical Investigation[4], Journal of Molecular Biology[1], Journal of Molecular Medicine[1], Molecular Cell[2], Nature[6], Nature Cell Biology[1], Nature Communication[5], Neurobiology of Disease[1], PNAS[2], Science[2], Science Advances[2], Science Signaling[3], Scientific Reports[3], Trends in Cell Biology[1], WIREs Mechanisms of Disease[1]*

UNIVERSITY SERVICE:

INSTITUTIONAL:

- Voting Member, Institutional Animal Care and Use Committee (IACUC), Texas A&M University 2018 - 2021
- Member, Graduate Admissions Committee, Interdisciplinary Program in Genetics and Genomics, Texas A&M University 2017 - 2020

COLLEGE:

- MD/PhD Steering Committee, School of Medicine, Texas A&M University 2021 - 2023
- Search Committee Member, Medical Science Ph.D. Program Coordinator, School of Medicine, Texas A&M University 2021 - 2022
- Co-Chair, Graduate Admissions Committee, Medical Science Ph.D. Program, School of Medicine, Texas A&M University 2020 - 2022
- Member, Vivarium Advisory Group, School of Medicine, Texas A&M University Health Science Center 2019 - 2023

- Member, LCME Subcommittee on Administration and Continuous Quality Improvement, School of Medicine, Texas A&M University — 2018 - 2019
- Member, School of Medicine Analytical Cytometry Core (SMACC) Advisory Board, Texas A&M University — 2017 - 2023
- Member, Graduate Admissions Committee, Medical Science Ph.D. Program, School of Medicine, Texas A&M University — 2017 - 2023

DEPARTMENT:

- Faculty Search Committee Member, Department of Microbial Pathogenesis and Immunology, School of Medicine, Texas A&M University — 2017 - 2018