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Education

Ph.D. Molecular Virology, University of Nebraska, Lincoln, Nebraska Advisor: Dr. Fernando A. Osorio	2006-2011
M.S. Biotechnology, Indian Institute of Technology, Roorkee, Uttaranchal, India	2004-2006
BVSc & AH (DVM equivalent) Odisha University of Agriculture and Technology, Bhubaneswar, India	1998-2004

Training and Employment

Assistant Professor <i>Department of Molecular Microbiology & Immunology, Brown University, Providence, RI</i>	2019-present
Senior Research Associate with Dr. David Masopust <i>Department of Microbiology & Immunology, University of Minnesota, Minneapolis, MN</i>	2017-2019
Post-doctoral Associate with Dr. David Masopust <i>Department of Microbiology & Immunology, University of Minnesota, Minneapolis, MN</i>	2011-2017
Research Assistant with Dr. Fernando Osorio <i>School of Veterinary and Biomedical Sciences, University of Nebraska, Lincoln, NE</i>	2006-2011

Honors and awards

- 2020 AAI Early Career Faculty Travel Grant (AAI, Hawaii) Cancelled due to COVID-19
- 2020 Salomon Award, Brown University
- 2020 Searle Scholar Award, Kinship Foundation (Chicago)
- 2019 AAI-Thermo Fisher Trainee achievement Award (AAI, San Diego)
- 2017 American Association of Immunologists Travel Award (AAI, Washington DC)
- 2010 Susan Ann Smith Mills Award (SVMBS, UNL)
- 2009 Larrick/Whitmore Research Travel Award (UNL)
- 2009 Veterinary Virology club student travel Award (ASV, Vancouver)
- 2008 Widaman Trust Distinguished Graduate Assistant Award (UNL)
- 2006-07 Chancellors' Doctoral Fellowship (UNL)

Publications

Assistant Professor Publications

(* graduate students, ** Undergraduate students, # research assistant, \$ Post-doctoral trainees mentored by me)

Han, G. \$, Hasan, M. H. \$, Pacia, J. #, Vaishnava, S., Valdez, G., **Beura, L.K.** A gavage-fomite based method to generate mouse models with natural microbiota. (2026) *J. Immunol* Accepted

Han, G. \$, Yunker, R., Hasan, M. H. \$, Bruce, A., Baldaro, K., Pacia, J. #, Jarjour, N. N, **Beura, L. K**^{^^}, Vaishnava, S. ^{^^} A host-adapted commensal fungus from pet store mice drives type 2 immunity and cross-kingdom protection. (2026) *iScience* Accepted in Principle ^{^^}Co-corresponding authors

Hasan M.H. \$, Lin Y. *, Wallace J., Mithila F.J. *, Pacia J. #, Han G. \$, Dinh K., Ma C., Zhang N., **Beura L.K.** Temporal Dissection of TGF- β signaling reveals distinct impact during mucosal CD8 resident memory T cell differentiation. (2026) *Mucosal Immunol* 19(3):100324.

Lin Y. *, Ramprashad J.C. **, Hillier E.L*, **Beura L.K.** In vitro resident memory CD8 T cell differentiation using epithelial organoid-T cell co-culture system. (2026) *J Vis Exp*. (228):10.3791/69120

Ramprashad J.C. **, Lin Y. *, **Beura L.K.** Protocol for the coculture of murine vaginal epithelial organoids and T cells to induce resident memory CD8 T cell differentiation. (2025) *Star Protocols*. 6(3):104054.

Hasan, M. H. \$, **Beura, L. K.** Monocyte-derived TGF- β shapes memory CD8+ T cells. (2025) *Cellular & Molecular Immunology*. 22(8):949-950.

Ulibarri, M. R.** ^, Lin, Y.* ^, Ramprashad, J. R. **, Han, G. \$, Hasan, M. H. \$, Mithila, F. J., Ma, C., Gopinath, S., Zhang, N., Milner, J., **Beura, L.K.** Epithelial organoid supports resident memory CD8 T cell differentiation. (2024) *Cell Rep*. 43(8):114621. ^ Equal contribution

Beekman, C. N., Penumutthu, S., Peterson, R., Han, G. \$, Belenky, M., Hasan, M. H. \$, Belenky, A., **Beura, L. K.**, Belenky, P. Spatial analysis of murine microbiota and bile acid metabolism during amoxicillin treatment. (2024) *Cell Rep*. 43(8):114572.

Glick, V. J. [†], Webber, C. A. [†], Simmons, L. E., Martin, M., Ahmad, M., Kim, C. H., Adams, A., Bang, S., Chao, M. C., Howard, N. C., Fortune, S. M., Verma, M., Jost, M., **Beura, L. K.**, James, M. J., Lee, S. Y., Mitchell, C. M., Clardy, J., Kim, K. H., Gopinath, S. Vaginal lactobacilli produce anti-inflammatory β -carboline compounds. (2024) *Cell Host Microbe* 32(11):1897-1909. [†] Equal contribution

Milcah C Scott, M. C., Steier, Z., Pierson, M. J., Stolley, M. J., O'Flanagan, S. O., Soerens, A. G., Wijeyesinghe, S. P., **Beura, L. K.**, Dileepan, G., Burbach, B. J., Künzli, M., Quarnstrom, C. F., Hamilton, S. H., Vezys, V., Shalek, A. K., Masopust, D. Deep profiling deconstructs features associated with memory CD8 T cell tissue residence. (2024) *Immunity*. 58(1):162-181.

Vangay, P., Ward, T., Lucas, S., **Beura, L. K.**, Sabas, D., Abramson, M., Till, L., Hoops, S. L., Kashyap, P., Hunter, R., Masopust, D., Knights, D. Industrialized human gut microbiota increases CD8+ T cells and mucus thickness in humanized mouse gut. (2023) *Gut Microbes*. 15(2):2266627.

Rosato, P.C., Lotfi-Emran, S., Joag, V., Wijeyesinghe, S., Quarnstrom, C.F., Degefu, H.N., Nedellec, R., Schenkel, J.M., **Beura, L.K.**, Hangartner, L., Burton, D.R., Masopust, D. Tissue-resident memory T cells trigger rapid exudation and local antibody accumulation. (2023) *Mucosal Immunol* 16(1):17-26.

Beura, L.K. ^{^^}, Scott, M.C., Pierson, M.J.[#], Joag, V., Wijeyesinghe, S., Semler, M.R., Quarnstrom, C.F., Busman-Sahay, K., Estes, J.D., Hamilton, S.E., Vezys, V., O'Connor, D.H., Masopust, D. ^{^^} Novel lymphocytic choriomeningitis virus strain sustains abundant exhausted progenitor CD8 T cells without systemic viremia. (2022) *J. Immunol* 209(9):1691-1702. ^{^^}Co-corresponding authors

Ho, J., Reza Sepand, M., Najafikhoshnoo, S., Bigdelou, B., Shekarian, T., Esfandyarpour, R., Chauhan, P., Serpooshan, V., **Beura, L. K.**, Hutter, G., Zanganeh, S. The immune response to COVID-19: Does sex matter? (2022) *Immunology* 166(4):429-443.

Hasan, M. H.^{\$}, **Beura, L. K.** Cellular interactions in resident memory T cell establishment and function. (2021) *Curr Opin Immunol* 74:68-75.

Wijeyesinghe, S. P., **Beura, L. K.**, Pierson, M. J., Stolley, J. M., Adam, O. A., Rusher, R., Steinert, E.M., Rosato, P. C., Vezys, V., Masopust, D. Expansive residence decentralizes immune homeostasis. (2021) *Nature* 592(7854):457-462.

Burbach, B. J., O'Flanagan, S. D., Shao, Q., Young, K., Slaughter, J., Rollins, M. R., Granger, V., Olson, T. J., **Beura, L. K.**, Azarin, S. M., Ramadhyani, S., Forsyth, B., Bischof, J. C., Shimizu, Y. Irreversible electroporation augments checkpoint immunotherapy in prostate cancer and promotes tumor antigen-specific tissue-resident memory CD8⁺ T cells. (2021) *Nat Commun* 12(1):3862.

Hamilton, S. E., Badovinac, V. P., **Beura L. K.**, Pierson, M. J., Jameson, S. C., Masopust, D., Griffith, T. S. New insights into the immune system using dirty mice. (2020) *J Immunol* 205(1):3-11.

Stolley, J. M., Johnston, T. S., Soerens, A. G., **Beura, L. K.**, Rosato, P. C., Joag, V., Wijeyesinghe, S. P., Langlois, R. A., Osum, K. C., Mitchell, J. S., and Masopust, D. Retrograde migration supplies resident memory T cells to the lung draining lymph node after influenza infection. (2020) *J Exp Med* 217(8).

Post-doctoral Publications

Fonseca, R. F. [†], **Beura, L. K.** [†], Quarnstrom, C. Q. [†], Ghoneim, H., Fan, Y., Zebley, C. C., Scott, M. C., Fares-Frederickson, N. J., Wijeyesinghe, S., Thompson, E. A., Borges da Silva, H., Vezys, V., Youngblood, B., Masopust, D. Developmental plasticity allows outside-in immune responses by resident memory T cells. (2020) *Nature Immunology* 21(4):412-421. [†] Equal contribution

Tucker, C.G., Mitchell, J.S., Martinov, T., Burbach, B.J., **Beura, L.K.**, Wilson, J.C., Dwyer, A.J., Singh, L., Spanier, J.A., Mescher, M.F., Fife, B.T. Adoptive T-cell therapy with IL-12-preconditioned low-avidity T cells prevents exhaustion and results in enhanced T-cell activation, enhanced tumor clearance, and decreased risk for autoimmunity. (2020) *J Immunol.* 205(5):1449-1460.

Walsh, D. A., Borges da Silva, H., **Beura, L. K.**, Peng, C., Hamilton, S. E., Masopust, D., Jameson, S. C. The functional requirement for CD69 in establishment of resident memory CD8⁺ T cells varies with tissue location. (2019) *J Immunol* 203(4):946-955.

- Hirai, T., Zenke, Y., Yang, Y., Bartholin, L., **Beura, L. K.**, Masopust, D., Kaplan, D.H. Keratinocyte-mediated activation of the cytokine TGF- β maintains skin recirculating memory CD8⁺ T cells. (2019) *Immunity* 50(5):1249-1261.
- Beura, L. K.**, Fares-Frederickson, N. J., Steinert, E. M., Scott, M. C., Thompson, E. A., Fraser, K. A., Schenkel, J. M., Vezys, V., Masopust, D. CD4⁺ resident memory T cells dominate immunosurveillance and orchestrate local recall responses. (2019) *J Exp Med* 216(5):1214-1229.
- Thompson, E. A., Mitchell, J. M., **Beura, L. K.**, Mrass, P., Torres, D., Pierson, M. J., Cannon, J. L., Masopust, D., Fife, B. T., Vezys, V. Interstitial migration of CD8 $\alpha\beta$ T cells in the small intestine is dynamic and is dictated by environmental cues. (2019) *Cell Rep* 26(11):2859-2867.
- Vangay, P., Johnson, A. J., Ward, T. L., Al-Ghalith, G. A., Shields-Cutler, R. R., Hillmann, B. M., Lucas, S. K., **Beura, L. K.**, Thompson, E. A., Till, L. M., Batres, R., Paw, B., Pergament, S. L., Saenyakul, P., Xiong, M., Kim, A. D., Kim, G., Masopust, D., Martens, E. C., Angkurawaranon, C., McGready, R., Kashyap, P. C., Culhane-Pera, K. A., Knights, D. US immigration westernizes the human gut microbiome. (2018) *Cell*. 175(4):962-972.
- Borges da Silva, H., **Beura, L.K.**, Wang, H., Hanse, E., Gore, R., Scott, M., Walsh, D. A., Block, K. A., Fonseca, R., Yan, Y., Hippen, K., Blazer, B. R., Masopust, D., Kelekar, A., Vulchanova, L., Hogquist, K., Jameson, S. C. The purinergic receptor P2RX7 directs metabolic fitness of long-lived memory CD8⁺ T cells. (2018) *Nature*. 559(7713):264-268.
- Steinert, E. M. [†], Thompson, E. A. [†], **Beura, L. K.**, Adam, O. A., Mitchell, J. S., Guo, M., Breed, E. R., Sjaastad, F. V., Vezys, V., Masopust, D. Cutting Edge: Evidence for nonvascular route of visceral organ immunosurveillance by T cells. (2018) *J Immunol*. 201(2):337-342. [†] Equal contribution
- Buggert, M., Nguyen, S., Salgado-Montes de Oca, G., Bengsch, B., Darko, S., Ransier, A., Roberts, E. R., Del Alcazar, D., Brody, I. B., Vella, L. A., **Beura, L. K.**, Wijeyesinghe, S., Herati, R. S., Del Rio, Estrada. P. M., Ablanado-Terrazas, Y., Kuri-Cervantes, L., Sada Japp, A., Manne, S., Vartanian, S., Huffman, A., Sandberg, J. K., Gostick, E., Nadolski, G., Silvestri, G., Canaday, D. H., Price, D. A., Petrovas, C., Su, L. F., Vahedi, G., Dori, Y., Frank, I., Itkin, M. G., Wherry, E. J., Deeks, S. G., Naji, A., Reyes-Terán, G., Masopust, D., Douek, D. C., Betts, M. R. Identification and characterization of HIV-specific resident memory CD8⁺ T cells in human lymphoid tissue. (2018) *Sci Immunol*.1;3(24).
- Beura, L. K.**, Wijeyesinghe, S., Thompson, E. A., Macchietto, M. G., Rosato, P. C., Pierson, M. J., Schenkel, J. M., Mitchell, J. M., Vezys, V., Fife, B. T., Shen, S., Masopust, D. T cells in non-lymphoid tissues give rise to lymph node resident memory T cells. (2018) *Immunity* 48(2):327-338.
- Beura, L. K.**, Mitchell, J. M., Thompson, E. A., Schenkel, J. M., Mohammed, J., Wijeyesinghe, S., Fonseca, R. F., Burbach, B. J., Hickman, H. D., Vezys, V., Fife, B. T., Masopust, D. Intravital mucosal imaging of resident memory CD8⁺ T cell shows tissue-autonomous recall responses that amplify secondary memory. (2018) *Nature Immunology* 19(2):173-182.
- Beura, L. K.**, Jameson, S. C., Masopust, D. Is a human CD8 T-cell vaccine possible, and if so what would it take? CD8 T cell vaccines: To B or not to B? (2018) *Cold Spring Harbor Perspectives in Biology*. 10(9).

Staley, C., Kaiser, T., **Beura, L. K.**, Hamilton, M. J., Weingarden, A. R., Bobr, A., Kang, J., Masopust, D., Sadowsky, M. J., Khoruts, A. Stable engraftment of human microbiota into mice with a single oral gavage following antibiotic conditioning. (2017) *Microbiome*. 1;5(1):87.

Beura, L. K., Rosato, P. C., Masopust, D. Implications of resident memory T cells for transplantation. (2017) *Am J Transplant*. 17(5): 1167-1175.

Rosato, P. C., **Beura, L. K.**, Masopust, D. Tissue resident memory T cells and viral immunity. (2017) *Curr Opin Virol*. 22:44-50.

Fiege, J., **Beura L. K.**, Burbach, B. J., Shimizu, Y. Adhesion and degranulation promoting adapter protein (ADAP) promotes CD8 T cell differentiation and resident memory formation and function during an acute infection. (2016) *J Immunol*. 197(6): 2079-89.

Reese, T. A, Bi, K., Kambal, A., Filali-Mouhim, A., **Beura, L. K.**, Bürger, M. C., Pulendran, B., Sekaly, R. P., Jameson, S. C., Masopust, D., Haining, W. N., Virgin H. W. Sequential Infection with Common Pathogens Promotes Human-like Immune Gene Expression and Altered Vaccine Response. (2016) *Cell Host Microbe*. 11; 19 (5): 713-9.

Beura, L. K., Hamilton, S. E., Bi, K., Schenkel, J. M., Odumade, O., Casey, K. A., Thompson, E. A., Fraser, K. A., Rosato, P. C., Filali-Mouhim, A., Sekaly, R. P., Jenkins, M. K., Vezys, V., Haining, W. N., Jameson, S., Masopust, D. Recapitulating adult human immune traits in laboratory mice by normalizing environment. (2016) *Nature*. 532 (7600): 512-6.

Schenkel, J. M[†], Fraser, K. A[†], Casey, K. A., **Beura, L. K.**, Vezys, V., Masopust, D. IL-15 independent maintenance of tissue resident and boosted effector memory CD8 T cells. (2016) *J Immunol* 196 (9): 3920-26. [†] Equal contribution

Thompson, E. A., **Beura, L. K.**, Nelson, C. E., Anderson, K. G., Vezys, V. Shortened intervals during heterologous boosting preserve memory CD8 T cell function but compromise longevity. (2016) *J Immunol* 196 (7): 3054-63.

Mohammed, J., **Beura, L. K.**, Bobr, A., Astry, B., Chicoine, B., Kashem, S. K., Igyártó, B. Z., Matte, C., Bartholin, L., Kaplan, A., Sheppard, D., Bridges, A. G., Shlomchik, W. D., Masopust, D., Kaplan, D. H. Stromal cells control epithelial residence of DC and memory T cells by regulated activation of TGF- β . (2016) *Nature Immunology* 17(4): 414-21.

Steinert, E. M. [†], Schenkel, J. M. [†], Fraser, K. A., **Beura, L. K.**, Manlove, L. S., Igyártó, B. Z., Southern, P. J., Masopust, D. Quantifying memory CD8 T cells reveals regionalization of immunosurveillance. (2015) *Cell* 161(4): 737-49. [†] Equal contribution

Beura, L. K., Masopust D. Infected cells call their killers to the scene of the crime. (2015) *Immunity* 42(3): 399-401.

Beura, L. K., Anderson, K. G., Schenkel, J. M., Locquiao, J. J., Fraser, K. A., Vezys, V., Pepper, M., and Masopust, D. Lymphocytic choriomeningitis virus persistence promotes effector like memory differentiation and enhances mucosal T cell distribution. (2015) *J Leukoc Biol* 97(2): 217-25.

Schenkel, J. M., Fraser, K. A., **Beura, L. K.**, Pauken, K. E., Vezys, V., Masopust, D. T cell memory. Resident memory CD8 T cells trigger protective innate and adaptive immune responses. (2014) *Science* 346(6205):98-101.

Beura, L. K., Masopust D. SnapShot: resident memory T cells. (2014) *Cell*. 157(6):1488-1488.

Anderson, K. G., Mayer-Barber, K., Sung, H., **Beura, L. K.**, James. B. R., Taylor, J. J., Qunaj, L., Griffith, T. S., Vezys, V., Barber, D. L., Masopust, D. Intravascular staining for discrimination of vascular and tissue leukocytes. (2014) *Nat Protoc* 9(1):209-22.

Casey, K. A. [†], Fraser, K. A. [†], Schenkel, J. M. [†], Moran, A., Abt, M. C., **Beura, L. K.**, Lucas, P. J., Artis, D., Wherry, E. J., Hogquist, K., Vezys, V., Masopust, D. Antigen-independent differentiation and maintenance of effector-like resident memory T cells in tissues. (2012) *J. Immunology* 88(10): 4866-75. [†] Equal contribution

Graduate student Publications

Dinh, P. X., **Beura, L. K.**, Das, P. B., Panda, D., Das, A., and Pattnaik, A. K. Induction of stress granule (sg)-like structures in vesicular stomatitis virus-infected cells. (2012) *J. Virology* 87(1): 372-83.

Beura, L. K., Subramaniam, S., Vu, H. L., Kwon, B. J., Pattnaik, A. K., and Osorio, F. A. Identification of amino acid residues important for anti-IFN activity of porcine reproductive and respiratory syndrome virus non-structural protein 1. (2012) *Virology* 433 (2): 431-9.

Subramaniam, S., **Beura, L. K.**, Kwon, B. J., Pattnaik, A. K., and Osorio, F. A. Amino acid residues in the non-structural protein 1 of porcine reproductive and respiratory syndrome virus involved in down-regulation of TNF- α expression in vitro and attenuation in vivo. (2012) *Virology* 432(2): 241-9.

Beura, L. K., Dinh, P. X., Pattnaik, A. K., and Osorio, F. A. Cellular poly(C) binding protein 1 and 2 interact with porcine reproductive and respiratory syndrome virus non-structural protein 1 β and support viral replication. (2011) *J. Virology* 85:12939–12949.

Dinh, P. X., **Beura, L. K.**, Panda, D., Das, A., and Pattnaik, A. K. Antagonistic effects of cellular poly(c) binding proteins on vesicular stomatitis virus gene expression. (2011) *J. Virology* 85:9459-71.

Subramaniam, S., Kwon, B. J., **Beura, L. K.**, Kuszynski, C. A., Pattnaik, A. K., and Osorio, F. A. Porcine reproductive and respiratory syndrome virus non-structural protein 1 suppresses tumor necrosis factor- α promoter activation by inhibiting NF- κ B and Sp1. (2010) *Virology* 406(2): 270-9.

Panda, D., Dinh, P. X., **Beura, L. K.**, and Pattnaik, A. K. Induction of interferon and interferon signaling pathways by replication of defective interfering particle RNA in cells constitutively expressing vesicular stomatitis virus replication proteins. (2010) *J. Virology* 84:4826-4831.

Beura, L. K., Sarkar, S. N., Kwon, B. J., Subramaniam, S., Jones, C., Pattnaik, A. K., and Osorio, F. A. Porcine reproductive and respiratory syndrome virus nonstructural protein 1 β modulates host innate immune response by antagonizing IRF3 activation. (2010) *J. Virology* 84: 1574-1584.

Manuscript under review

Rejani, C.T ^{\$}, **Beura, L.K.** Immune cell incorporation in organoids: A tissue-specific perspective on engineering immunocompetent barrier tissue organoids.

Select Invited lectures

- 2026 New England Immunology Conference, Woods Hole, MA

- 2025 University of Washington, Seattle, WA
- 2025 Dartmouth College, Hanover, NH
- 2023 Albert Einstein College of Medicine, Bronx, NY
- 2022 Center for Translational Neuroscience retreat, Providence, RI
- 2021 Ashoka University, Biology colloquium, New Delhi, India (remote)
- 2021 Nebraska Center for Virology symposium Keynote, Lincoln, NE
- 2020 University of Montreal, Montreal, QC
- 2020 Women & Infant's Hospital, Providence, RI
- 2019 Laboratory of Infectious Diseases-NIH, Bethesda, Washington DC
- 2019 University of Kansas Medical Center, Kansas City, KS
- 2019 University of Utah, Salt Lake City, UT
- 2019 Brown University, Providence, RI
- 2019 Laboratory of Viral Diseases, NIH, Bethesda, Washington DC
- 2018 Autoimmune Related Disease Association (AARDA) colloquium, Washington DC
- 2018 Ohio state University, Columbus, OH
- 2018 University of Washington, Seattle, WA
- 2018 University of Massachusetts Medical School, Worcester, MA
- 2018 Mucosal Systems Meeting, Santa Rosa, CA
- 2016 Basic Science in Transplantation (BeST) Meeting, Ft. Lauderdale, FL

Funding (Active)

1. R01AI177704-01A1 04/10/24-02/28/29
"T lymphocyte-mediated protection of the reproductive mucosa"
NIH-NIAID, Role: PI
2. R21AI183017-01 05/21/24-03/31/27
"Interrogating mucosal resident memory CD8 T cell biology with 3D organoids"
NIH- NIAID/NIBIB, Role: PI
3. P30AI042853-28 05/01/25-11/31/26
"Deciphering Microbiome-Epithelial-Immune Interactions in the Vaginal Mucosa: Implications for HIV Susceptibility".
Providence-Boston Center for AIDS Research Developmental award, Role: sub award PI
4. F31AI186444 09/01/25-03/31/28
"The impact of the commensal vaginal microbiome on resident memory T cell differentiation and function"
NIH-NIAID Role: Mentor (PI-Ying Lin, 5th year graduate student in lab)

Funding (Completed)

1. Pathology Department Pilot grant 05/01/24-12/31/25
"Impact of microbiome on anti-HPV functions of CD8 T cells using human cervical organoids"
Department of Lab Medicine & pathology, Brown University Role: co-PI (PI- Barak)

2. OVPR Seed grant 03/01/24-03/31/26
 "Organoids to assess resident memory T cell differentiation"
 OVPR, Brown University (\$50,000) Role: PI

3. P20GM109035 08/01/21-07/31/24
 "Local regulation of T cell differentiation and function in the reproductive mucosa"
 NIGMS Computational biology of human disease Phase-II. Role: sub award PI

4. R21AG079550-01 06/01/23- 02/28/25
 "Development of a microbial-rich exposure regimen to accelerate translational research using mouse models of Alzheimer's Disease to humans"
 NIA Role: Co-I (PI-Valdez)

5. Rhode Island Foundation Medical Research grant 04/12/23- 04/11/24
 "Developmental origin and function of antiviral CD8 T cells in the female reproductive mucosa"
 RIF Role: PI

6. Searle Scholars award 07/01/20-06/30/23
 "Adaptation of resident memory CD8 T lymphocytes in the reproductive mucosa"
 Searle scholars' program, Chicago, IL Role: PI

7. Carney Institute of Brain Science 01/01/22-12/31/22
 "Optimizing housing conditions to accelerate the translation of research using mouse models of Alzheimer's Disease"
 CIBS Role: Co-PI with Greg Valdez, Brown University

8. P20GM109035 01/01/20-12/31/20
 "Transcriptional diversity of female reproductive tract resident memory T cells"
 NIGMS Center for computational biology of human disease pilot award Role: subaward PI

9. P20GM121298 12/01/20-07/30/21
 "Influence of sex-steroid and microbiome on female genital resident memory T cell development"
 NIGMS COBRE Women and Infants Hospital Role: sub award PI

10. Salomon award 07/01/20-06/30/22
 "Promoting immunity against ovarian cancer by stimulating intratumoral pathogen-specific resident memory T cells"
 OVPR, Brown University Role: PI

11. COVID-19 seed award 07/01/20-06/30/22
 "Using androgen to dampen immune mediated pathogenesis in coronavirus infected males"
 OVPR, Brown University Role: PI

Teaching

University Teaching

Overall course rating: (scale: 1=low, 5=high)

Primary lecturer

Biol 1600: Development of Vaccines to Infectious Diseases	2021-present
Spring 2021 (53 students): 4.43	
Spring 2022 (44 students): 4.6	
Spring 2023 (18 students): 4.55	
Spring 2024 (27 students): 4.54	
Spring 2025 : Sabbatical	
Spring 2026 (22 students): 4.69	

Guest lecturer

Biol 1600: Development of Vaccines to Infectious Diseases	2020 Spring
Biol 0530: Principles of Immunology	2020-present
Biol 1520: Innate Immunity	2022-present
Biol 2050: Biology of the Eukaryotic Cell	2026

Research Mentoring

Current Graduate Students

- Ying Lin (2021), Pathobiology graduate program student.
Accomplishments: Awarded NIAID F31 training grant. Invited for podium talk at 2026 American Society of Reproductive Immunology conference
- Elizabeth Hillier (2025), Pathobiology graduate program student.

Past Graduate Student

- Farha J. Mithila (2019), MCB graduate program student. (currently Post doc at NIH-Bethesda)
Accomplishments: Supported by MCB and BRRTP T32 training grant. Invited to present podium talk in 2023 American Association of Immunology, DC.

Rotating Graduate Students

- 2019 Ola Hasan, Pathobiology graduate program student.
Farha J. Mithila, MCB graduate program student.
- 2020 Rebecca Yunker, Pathobiology graduate program student.
- 2021 Titus K. Maina, Pathobiology graduate program student.
- 2022 Ying Lin, Pathobiology graduate program student.
Melanie Ortiz, Pathobiology graduate program student
Fernando Garcia, Pathobiology graduate program student
- 2023 Andrew Karam, MCB graduate program student.
- 2024 Khanhlinh Dinh, Pathobiology graduate program student
Arian Taboada, Pathobiology graduate program student
Elizabeth Hillier, Pathobiology graduate program student

Ph.D. Thesis Committee (current)

- Madison Smith, Pathobiology graduate program student. Advisor: Laurent Brossay, 2024-present.
- Carmelissa Norburn, Therapeutic Science graduate program student. Advisor: Yang Zhou, 2023-present.

- Breanna Demestichas, MCB graduate program student. Advisor: Sendurai A. Mani, 2023-present.
- Simone Duran-Nyers, Chemistry graduate student. Advisor: Megan Kizer, 2024-present.

Post-doctoral trainee

- Mohammad H. Hasan (2020-present)
Accomplishments: Invited to present posters in 2025 American Association of Immunology Annual Meeting. Received travel awards from Office of Postdoctoral Affairs.
- Geongoo Han (2022-2024)
Accomplishments: American Association of Immunology “Career in Immunology Fellowship”
- Chalikkaran Thilakan Rejani (2025-present)

Undergraduate Students (Brown University)

- Elena Jin, Undergraduate Researcher, 2019-2021 (Certified Medical Assistant, California)
- Bryan Kwon, Undergraduate Researcher, 2020-2022 (MD student, George Washington University)
- Max Ulibarri *, Undergraduate Researcher, 2021-2023 (MD student, Columbia University)
Accomplishments: Received Biology Senior Prize. Invited to present podium talk in 2023 American Association of Immunology, DC.
- Zoey Fisher, Undergraduate Researcher, 2023-2024 (MD student, Mount Sinai school of medicine)
- Julian Ramprashad *, Undergraduate Researcher, 2023-2025 (MD/PhD student, University of California, San Francisco)
Accomplishments: Received Elizabeth Leduc Prize in Cell and Molecular Biology. Invited to present poster in 2025 American Association of Immunology, DC.
- Yousuf Suleman, Undergraduate Researcher, 2024 (PLME, Brown)
- Olumide Adesioye *, Undergraduate Researcher, 2024-2026 (Damon Runyon SPARK Postbac, MIT)
- Joshua Williamson, Undergraduate Researcher, 2025-present

*Senior thesis

Summer Undergraduate Students (Others)

- Morgan Woolridge, Summer 2021 Leadership alliance internship (PhD student, Arizona State University)
- Ashley Abrego-Gonzalez, Summer 2024 Leadership alliance internship (Final year, University of Texas Rio Grande Valley BS student)

Undergraduate and Master Thesis committee

- Arianna Fang, 2022
- Camille Hebert, 2024
- Gabrielle Derrick, 2024

- Hsien Yao Chee, 2025 (Biotechnology Masters)
- Phoebe Maranjian, 2026 (Biotechnology Masters)
- Bingyue Zhou, 2026 (Biotechnology Masters)

Research Technicians

- Corrine Perloski, 2019-2020
- Maria Armillei, 2020-2021
- Jessica Pacia, 2021-2023
- Delia Demers, 2021-now

PhD Thesis committee (graduated)

- Kenneth Callahan, MCB graduate program. Advisor: Arthur Salomon
- Titus K. Maina, Pathobiology graduate program. Advisor: Jeffrey Bailey
- Melanie Ortiz, Pathobiology graduate program. Advisor: Peter Belenky
- Noelle Curtis-Joseph, MCB graduate program. Advisor: Peter Belenky
- John Im, University of Texas Health Science Center. Advisor: Nu Zhang (External Thesis committee member)
- Samantha Borys, Pathobiology graduate program. Advisor: Laurent Brossay.
- Shanelle Reilly, MCB graduate program. Advisor: Laurent Brossay.
- Alex Jordon, Pathobiology graduate program. Advisor: Laurent Brossay.
- Maryam Bonakdar, Pathobiology graduate program. Advisor: Shipra Vaishnava.
- Payton De La Cruz, Pathobiology graduate program. Advisor: Kathryn Grive.
- Dillon Shapiro, MCB graduate program. Advisor: Gregorio Valdez.

Service

To the University

Advising:

- Concentration Advisor, 20 students, 2022-present
- Freshman/Sophomore Advisor, 12 students, 2022-present

University Committees:

- Chair, MMI seminar committee, 2026-present
- Member, MMI DIAP committee, 2023-present
- Member, University Advisory committee on Honorary Degrees, 2023-2026
- Reviewer, Summer SPRINT|UTRA applications, 2022
- Chair, MCB retreat organizing committee, 2021
- Vice-Chair, MCB retreat organizing committee, 2021
- Member, Pathobiology graduate student Admissions committee 2021, 2022, 2025
- Member, Pathobiology Seminar Committee, 2021
- Member, MCB graduate student Admissions committee 2021

To the Profession

Ad hoc Grant Reviewer:

- National Environmental Research Council (UK), 2019
- Cancer Research UK, 2020
- National Science Foundation, 2020
- American Heart Association, 2021
- Brown Salomon Award, 2021-present
- NIH-Viral Pathogenesis and Immunity study section, 2023
- NIH-NCI Special Emphasis Panel (13), 2024
- NIH- Special Emphasis Panel, Topics in Immunology and Infectious Diseases, 2024
- Brown Seed Award, 2025-present
- European Research Council reviewer, 2025
- NIH- Integrative and Clinical Endocrinology and Reproduction study section, 2025
- NIH- HIV Immunopathogenesis and Vaccine Development study section, 2026

Ad hoc Journal reviewer:

Science Immunology, Cell Host and Microbe, Nature Communications, Frontiers Immunology, Mucosal Immunology, Reviews in Medical Virology, Immunology and Cell Biology, Cell Reports, Journal of Hepatology, iScience, Immunity, Journal of Immunology, Journal of Virology, Cellular and Molecular Life Sciences, Cellular and Molecular Immunology, Immunometabolism (2019-present)

To the Community

- 2026: Abstract Reviewer, International Meeting of Society of Mucosal Immunology, Montreal
- 2024: Global Immunocourse Instructor/Participant (New Delhi, remote)
- 2023: Session Chair (Technology Development), American Association of Immunology Annual Meeting, Washington DC
- 2019-present: Member, Society of Mucosal Immunology
- 2013-present: Member, American Association of Immunology