

**MEGAN L. BURGER, Ph.D.**

Assistant Professor  
Oregon Health & Science University  
Dept of Cell, Developmental & Cancer Biology  
Dept of Hematology and Oncology  
Member, Knight Cancer Institute

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Portland, OR 97201  
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**EDUCATION AND TRAINING**

- 2015 – 2022 **Massachusetts Institute of Technology, Cambridge, MA**  
Koch Institute for Integrative Cancer Research  
Postdoctoral fellow
- 2008 – 2014 **University of California, Berkeley, CA**  
Department of Molecular and Cell Biology, Immunology Division  
Ph.D. in Molecular and Cell Biology
- 2002 – 2006 **University of Washington, Seattle, WA**  
Department of Chemistry  
B.S. in Biochemistry

**RESEARCH POSITIONS**

- Sep. 2022 – **Knight Cancer Institute, Department of Cell, Developmental and Cancer Biology and Department of Hematology and Oncology**  
Assistant professor and principal investigator of the Burger Lab
- 2015 – 2022 **Koch Institute for Integrative Cancer Research – MIT, Cambridge, MA**  
Postdoctoral fellow in the lab of Dr. Tyler Jacks  
*Mechanisms regulating anti-tumor T cell responses in lung cancer.*
- 2015 **University of California, Berkeley, CA**  
Postdoctoral fellow in the lab of Dr. Astar Winoto  
*Nr4a-mediated mitochondrial apoptosis during thymocyte negative selection.*
- 2008 – 2014 **University of California, Berkeley, CA**  
Department of Molecular and Cell Biology, Immunology Division  
Ph.D. in Molecular and Cell Biology with Dr. Astar Winoto  
*Aberrant signaling in developing T cells driving cancer and autoimmune pathology.*
- 2006 – 2008 **Seattle Children's Hospital Research Institute, Seattle, WA**  
Research Technician II with Dr. Allison Eddy, Nephrology  
*The role of vascular endothelial cadherin in chronic kidney disease progression.*
- 2005 – 2006 **University of Washington, Seattle, WA**  
Department of Biology  
Undergraduate Researcher with Dr. Rose Ann Cattolico  
*Light/dark cycle in the regulation of chloroplast DNA replication and gene expression.*
- 2005 – 2006 **University of Washington Genome Center, Seattle, WA**  
Research Assistant  
*Creation and screening of fosmid libraries for targeted genome resequencing projects.*

## HONORS AND AWARDS

- 2023 Invited Participant, Society for Immunotherapy of Cancer (SITC), Women in Cancer Immunotherapy Network (WIN) Leadership Institute
- 2023 Invited Participant, Arthur and Sandra Irving Cancer Immunology Symposium
- 2020 Margaret A. Cunningham Immune Mechanisms of Cancer Postdoctoral Fellowship
- 2020 Ludwig Center for Molecular Oncology at MIT Postdoctoral Fellowship
- 2019 Koch Institute Marlena Felter Bradford Travel Award
- 2016 Jane Coffin Childs Memorial Fund Postdoctoral Fellowship
- 2013 Ruth L. Kirschstein NRSA Predoctoral Fellowship, NIH NCI F31 Predoctoral Fellowship
- 2013 American Association of Immunologists Trainee Abstract Travel Award
- 2013 UC Berkeley Graduate Division Travel Grant
- 2010 UC Cancer Coordinating Committee Predoctoral Fellowship
- 2006 Washington Sea Grant, Summer Research Grant

## INVITED PRESENTATIONS

- 2023 **Invited Speaker**, Genentech, Cancer Immunology Program, San Francisco, CA
- 2023 **Invited Speaker**, Hamon Center for Therapeutic Oncology Research, UT Southwestern
- 2023 **Invited Speaker**, Loyola University, Integrative Cell Biology Department, Chicago, IL
- 2023 **Poster**, AACR Annual Meeting, Orlando, FL
- 2022 **Proffered Talk**, Keystone: Cancer Neoantigens, Vaccines and Viruses, Banff AB, Canada
- 2022 **Plenary Speaker**, CIMT Annual Meeting, Mainz, Germany
- 2022 **Invited Speaker**, Ludwig Tumor Atlas webinar
- 2022 **Invited Speaker**, worldwide Public Journal Club (PJC)
- 2021 **Poster**, AACR Tumor Immunology and Immunotherapy, Virtual
- 2020 **Proffered Talk**, CSHL Gene Expression and Signaling in the Immune System, Cold Spring Harbor, NY
- 2019 **Proffered Talk and Poster**, AACR Tumor Immunology and Immunotherapy, Boston, MA
- 2018 **Poster**, Jane Coffin Childs Memorial Fund Symposium, Boston, MA
- 2017 **Poster**, Keystone: Cancer Immunology and Immunotherapy, Taking a Place in Mainstream Oncology, Whistler, BC, Canada
- 2013 **Proffered Talk**, American Association of Immunologists Conference, Honolulu, HI
- 2010 **Poster**, American Pediatric Society Annual Meeting, Vancouver, BC, Canada
- 2007 **Poster**, American Society of Nephrology Renal Week, San Francisco, CA
- 2006 **Poster**, Northwest Algal Symposium and Phycological Society of America Meeting, Juneau, AK

## ADDITIONAL TRAINING

- 2023 **OHSU Mentorship Academy**  
Series of mentorship workshops for faculty
- 2022 – 2023 **OHSU Early Career Advancement Program**  
Training sessions in lab management, grant writing, budgeting and leadership
- 2021 **MIT Path of Professorship workshop**  
Preparation for faculty job search and starting an independent research career

## TEACHING AND SERVICE

- 2023 **Ad Hoc Reviewer**, Immunity and Journal for ImmunoTherapy of Cancer (JITC)
- 2023 **Oral Qualifying Exam Committee Member**, OHSU, trainees Ravina Pandita and Jackie Phipps
- 2023 **Oral Examination Committee Member**, OHSU, Ph.D. Thesis, Breanna Caruso
- 2023 **Affiliated Faculty Member**, OHSU Postbaccalaureate Research Education Program
- 2023 **Review Panelist**, OHSU Center for Experimental Therapeutics PHACET grant
- 2023 **Review Panelist and Faculty Mentor**, OHSU Cell, Developmental & Cancer Biology Summer Internship Program
- 2022 – 2023 **Affiliated Faculty Member**, OHSU Graduate Program in Biomedical Sciences (PBMS)
- 2022 **Panelist**, OHSU KnightWalks Career Development Workshops
- 2017 – 2020 **Undergraduate Research Mentor and Thesis Advisor**, 2 students, Jacks Laboratory Massachusetts Institute of Technology, Department of Biology
- 2016 – 2022 **Research Supervisor**, 3 Research Technicians, Jacks Laboratory, Koch Institute for Cancer Research, MIT
- 2015 – 2016 **Rotating Graduate Student Mentor**, Jacks Laboratory, Massachusetts Institute of Technology, Department of Biology
- 2013 – 2014 **Rotating Graduate Student Mentor**, Winoto Laboratory, University of California, Berkeley, Department of Molecular and Cell Biology
- 2011 – 2012 **Graduate Student Divisional Representative**, Department of Molecular and Cell Biology, Immunology Division, University of California, Berkeley
- 2010 – 2013 **Undergraduate Research Mentor and Thesis Advisor**, 4 students, Winoto Laboratory University of California, Berkeley, Department of Molecular and Cell Biology
- 2010 – 2011 **Graduate Admissions Student Representative**, Department of Molecular and Cell Biology, Immunology Division, University of California, Berkeley
- 2010 **Graduate Student Instructor**, Molecular Immunology Lab, University of California, Berkeley, evaluation 6.33/7

- 2009 **Graduate Student Instructor**, Molecular Immunology Lecture, University of California, Berkeley, evaluation 6.58/7
- 2007 – 2008 **Laboratory Instructor**, Eddy Lab, Seattle Children's Hospital Research Institute

## TRAINEES

- 2023 Ricardo Mercado, Rotating Postbac Student, Burger Lab, OHSU
- 2023 Ariana de Jesus-Carrasquillo, Summer Intern, Burger Lab, OHSU
- 2023 Peter Matulich, Graduate Student, Burger Lab, OHSU
- 2023 Matthew Stern, Rotating Graduate Student, Burger Lab, OHSU
- 2022-2023 Madison Harris, Research Technician, Burger Lab, OHSU
- 2020-2022 Sara Tavana, Research Technician, MIT (MIT PhD student)
- 2018-2020 Andrea Garmilla, Undergraduate Researcher, MIT (Harvard MD/PhD student)
- 2018-2020 Grace Crossland, Research Technician, MIT (Dartmouth MD/PhD student)
- 2017-2018 Izumi de los Rios Kobara, Undergraduate Researcher, MIT (Stanford PhD student)
- 2016-2018 Tamina Kienka, Research Technician, MIT (Harvard MD/PhD student)
- 2012-2013 Nadia Kurd, Undergraduate Researcher, UC Berkeley (Senior Scientist, Pfizer)
- 2011-2012 April Choi, Undergraduate Researcher, UC Berkeley (Hem-Onc Fellow, Tufts)
- 2010-2011 Kenneth Leung, Undergraduate Researcher, UC Berkeley (Clinical Assistant Professor, Neurology, Stanford)

## PROFESSIONAL ORGANIZATIONS

- American Association for Cancer Research, Member
- Society for Immunotherapy of Cancer, Member

## PUBLICATIONS

Gaglia, G.\*, **Burger, M.L.\***, Ritch, C.C., Rammos, D., Yang, D., Crossland, G.E., Tavana, S.Z., Warchol, S., Jaeger, A.M., Coy, S., Johnson, A., Krueger, R., Lin, J.R., Pfister, H., Sorger, P., Jacks, T., Santagata, S. Lymphocyte networks are dynamic cellular communities in the immunoregulatory landscape of lung adenocarcinoma. *Cancer Cell* doi: 10.1016/j.ccell.2023.03.015 (2023).

- Commentary by Karina Silina, B cell-rich niches support stem-like CD8+ T cells in cancer microenvironment, *Cancer Cell Preview*, May 2023

Warchol, S., Krueger, R., Nirmal, A.J., Gaglia, G., Jessup, J., Ritch, C.C., Hoffer, J., Muhlich, J., **Burger, M.L.**, Jacks, T., Santagata, S., Sorger, P.K., Pfister, H. Visinity: Visual Spatial Neighborhood Analysis for Multiplexed Tissue Imaging Data. *IEEE Trans Vis Comput Graph* 29(1):106-116. doi: 10.1109/TVCG.2022.3209378 (2023).

Patel, R., Romero, R., Liang, A., Watson, E., **Burger, M.L.**, Westcott, P.M.K., Mercer, K., Bronson, R., Wooten, E., Bhutkar, A., Jacks, T., Elledge, S. A GATA4-regulated secretory program suppresses

tumors through recruitment of cytotoxic CD8 T cells. *Nat Communications* 13(1):256. doi: 10.1038/s41467-021-27731-5 (2022).

Hamza, B., Miller, A.B., Meier, L., Stockslager, M., Ng, S.R., King, E.M., DeGouveia, K.L., Mulugeta, N., Calistri, N.L., Strouf, H., Lin, L., Chin, C.R., Bray, C., Rodriguez, F., Freed-Pastor, W.A., Jaramillo, G.C., **Burger, M.L.**, Weinberg, R.A., Shalek, A.K., Jacks, T., Manalis, S. Measuring kinetics and metastatic propensity of CTCs by blood exchange between mice. *Nat Communications* 12(1):5680. doi:10.1038/s41467-021-25917-5 (2021).

**Burger, M.L.**, Cruz, A.M., Crossland, G.E., Gaglia, G., Ritch, C.C., Blatt, S.E., Bhutkar, A., Canner, D., Kienka, T., Tavana, S., Garmilla, A., Schenkel, J.M., Hillman, M., de los Rios Kobara, I., Li, A., Hwang, W.L., Westcott, P.M.K., Regev, A., Santagata, S., Jacks, T. Antigen dominance hierarchies shape TCF1+ CD8 T cell phenotypes in tumors. *Cell* 184(19):4996-5014. doi:10.1016/j.cell.2021.08.020 (2021).

- Highlighted in the NIH Director's Blog, November 2021.
- Commentary by Sonia Ghilas and Lisa A. Mielke, Dendritic cells shape TCF1+CD8+ progenitor T cell heterogeneity, *Trends in Immunology*, November 2021

Schenkel, J.M., Herbst, R.H., Canner, D.A., Li, A., Hillman, M., Shanahan, S., Gibbons, G., Smith, O.C., Kim, J.Y., Westcott, P., Hwang, W., Freed-Pastor, W., Eng, G., Cucco, M.S., Rogers, P., Park, J.K., **Burger, M.L.**, Rozenblatt-Rosen, O., Cong, L., Pauken, K.E., Regev, A., Jacks, T. Conventional type I dendritic cells maintain a reservoir of proliferative tumor-antigen specific TCF-1+ CD8+ T cells in tumor draining lymph nodes. *Immunity* 54(10):2338-2353.e6. doi:10.1016/j.immuni.2021.08.026 (2021).

**Burger, M.L.**, Leung, K.K., Bennett, M.J., Winoto, A. T cell-specific inhibition of multiple apoptotic pathways blocks negative selection and causes autoimmunity. *eLIFE*3:e03468. doi: 10.7554/eLife.03468 (2014).

**Burger, M.L.\***, Xue, L. \*, Sun, Y., Kang, C., Winoto, A. Premalignant PTEN-deficient thymocytes activate miR-146a and miR-146b as a cellular defense against malignant transformation. *Blood* 123(26):4089-4100. doi: 10.1182/blood-2013-11-539411 (2014).

Thompson, J., **Burger, M.L.**, Whang, H., Winoto, A. Protein kinase C regulates mitochondrial targeting of Nur77 and its family member Nor-1 in thymocytes undergoing apoptosis. *Eur J Immunol* 40(7):2041-2049. doi: 10.1002/eji.200940231 (2010).

Yamaguchi, I., Tchao, B.N., **Burger, M.L.**, Yamada, M., Hyodo, T., Giampietro, C., Eddy, A.A. Vascular endothelial cadherin modulates renal interstitial fibrosis. *Nephron Exp Nephrol* 120(1):e20-31. doi: 10.1159/000332026 (2010).

## RESEARCH GRANTS

### Current

Lung Cancer Discovery Award (PI: Burger) 07/01/2023-06/30/2025  
Source: American Lung Association \$100,000/yr  
Title: *Promoting cooperative T cell responses against lung cancer*  
Investigation of antigen clonality in regulating T cell competition in tumors and response to vaccination.

CEDAR Pilot Grant (PI: Burger, Emili, Nikolova) 06/28/2023-06/27/2025  
Source: OHSU Center for Early Detection Advanced Research Center (CEDAR) \$100,000/yr  
Title: *Identifying tumor-intrinsic factors regulating early onset immunosuppression in lung cancer*  
Pilot grant to identify mechanisms of early immune suppression in a mouse model of lung cancer.

## Completed

Margaret A. Cunningham Immune Mechanisms of Cancer Fellowship (PI: Burger) 11/01/2020-10/31/2021  
Source: Margaret A. Cunningham Immune Mechanisms of Cancer Fund \$10,000

Title: *The role of antigen dominance hierarchies in shaping anti-tumor T cell phenotypes and immunotherapy responses.*

Investigated a role for antigen dominance hierarchies in shaping CD8 T cell phenotypes and immunotherapy response in a mouse model of lung cancer.

Ludwig Center for Molecular Oncology Postdoctoral Fellowship (PI: Burger) 03/01/2020-02/28/2021  
Source: Ludwig Center for Molecular Oncology at MIT \$65,000/yr

Title: *Elucidating the role of interferon gamma signaling in lung cancer progression and metastasis.*

Investigated a role for interferon gamma receptor signaling in regulating immunosurveillance of lung cancer and response to checkpoint blockade immunotherapies.

Jane Coffin Childs Memorial Fund Postdoctoral Fellowship (PI: Burger) 08/01/2016-07/31/2019  
Source: Jane Coffin Childs Memorial Fund for Cancer Research \$53,500/yr

Title: *Investigating mechanisms of immune evasion in autochthonous lung tumors.*

Developed a CRISPR/Cas9-based approach to investigate tumor-mediated immune evasion mechanisms in lung cancer.

F31CA168007 (PI: Burger) 01/01/2013-12/31/2015  
Source: NIH National Cancer Institute \$36,818/yr

Title: *The Mechanisms of Nur77 and Nor1 Induced Apoptosis Through Interaction with Bcl2*

Investigation of Nur77/Nor1-dependent apoptosis in thymocytes and cancer.

UC Cancer Coordinating Committee Predoctoral Fellowship 2010-2011  
(Role: Graduate Student) not recorded  
Title: N/A

Predoctoral fellowship supporting investigation of miRNA regulation of T cell malignant transformation.