

Assistant Professor Updated: Nov. 18, 2020
 Dept. of Microbiology, Immunology, and Cell Biology
 West Virginia University School of Medicine
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Education

Bachelor of Science in Biology (Molecular Biology Emphasis), Minor in Chemistry 2006-2010

Doctor of Philosophy in Anatomy and Cell Biology 2011-2015
 East Carolina University, Brody School of Medicine, Greenville, NC
 Mentor: Christopher B. Geyer, Ph.D.
 Dissertation: "The role of retinoic acid in directing initiation of spermatogenesis in the mouse"

Postdoctoral Training

National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC 2015-2020
 Signal Transduction Laboratory (STL)
 Mentor: John A. Cidlowski, Ph.D.

Current Position

Assistant Professor-Tenure Track April 2020-present
 West Virginia University, School of Medicine, Morgantown, WV
 Department of Microbiology, Immunology, and Cell Biology

Honors and Awards

Commonwealth of Pennsylvania University Biologist student research grant. *High levels of the receptor tyrosine kinase EPHA2 lead to increased cell metastasis through increased activity of RAC1 and RHOA GTPases.* 2009

Pennsylvania Academy of Science student research grant. *High levels of EPHA2 expression correlates with increased migration in human melanoma.* 2010

Commonwealth of Pennsylvania University Biologist student research grant. *High levels of the receptor tyrosine kinase EPHA2 leads to increased melanoma tumor cell invasion and vasculogenic mimicry in the presence of Ephrin-A1.* 2011

Lalor Foundation Merit Award, Society for the Study of Reproduction Annual Meeting 2014

Trainee Platform Competition, Society for the Study of Reproduction Annual Meeting 2014

Fellows Award for Research Excellence (FARE) Award, NIEHS 2016

American Gastroenterological Association travel award, Digestive Disease Week 2018

Fellows Award for Research Excellence (FARE) Award, NIEHS 2018

NIEHS Sciences Days Best Presentation 2019

FASEB Young Investigator Award 2019

Society and Professional Memberships

Brody Graduate Student Association 2012-2015

Trainee Member, Society for the Study of Reproduction 2013-2015

Trainee Member, The American Association of Immunologists 2019-2020

Trainee Member, American Gastroenterological Association 2018-2020

Editorial Board Service

Review Editor: *Frontiers in Immunology* 2019-present

Ad hoc Reviewer

Clinical Nutrition 2019
Cellular and Molecular Gastroenterology and Hepatology 2019-2020
Neuroscience 2020
Frontiers in Immunology 2021

Study Sections

Member, WVU CTSI Pilot Grant Nov. 16, 2020

Professional Service

Society for the Study of Reproduction–Trainee Volunteer 2013
 Society for the Study of Reproduction–Trainee Volunteer 2014
 Bloomsburg University College of Science and Technology Career Day–Invited Panelist 2015
 NIEHS Fellows Grant Writing Group–Reviewer 2018
 22nd Annual NIEHS Biomedical Career Symposium–Volunteer 2019
 Fellows Award for Research Excellence (FARE) –Abstract Judge 2019
 Triangle Consortium for Reproductive Biology–Volunteer 2019
 Postdoctoral Research Associate Training (PRAT) annual symposium planning committee 2020
 Microbiology Immunology and Cell Biology Faculty Search Committee 2021
 Undergraduate Research Program Coordinator 2021-present
 Undergraduate Scholarship Committee 2021-present

Grant Activity

Pending/Active

NIH/NIGMS—1P20GM121322-01A1 Awarded: July 2021
 Title: “*Immune Regulation of Gastric Cancer*”
 Amount: \$175,000/year
 Role: PI

Completed

NIH/NIGMS—1Fi2GM123974 Awarded: Sept., 2017-Aug., 2020
 Title: “*The role of glucocorticoids in preserving stomach health*”
 Role: PI

NIH/NIGMS—1P20GM121322-01A1 (TME Pilot) Awarded: Jan., 2021 - June 2021
 Title: “*Immune Regulation of Gastric Cancer*”
 Amount: \$50,000
 Role: PI

Teaching

Tutor: “General Biology”, Bloomsburg University Spring, 2010
 Graduate Teaching Assistant: “Gross Anatomy for the Health Professional”; ECU Summer, 2012
 Tutor: “Medical Gross Anatomy and Embryology”; ECU Fall, 2012
 Lecturer: “Fellows Grant Writing Group”; NIEHS Spring, 2019
 Instructor: “Experiential Learning”—Course Number: BMS 707; WVU Fall, 2020
 Course Director: Immunology Colloquium I—Course Number: IMMB 200; WVU Spring, 2021

Mentorship

Kate McPherson—undergraduate researcher	2013
Evelyn Kaye—undergraduate researcher	2013-2014
Kenneth Cook—undergraduate researcher	2014-2015
Kylie Peterson—undergraduate researcher	2019-2020
Alex Chervenick—undergraduate researcher	2020-present
Maeve Morris—undergraduate researcher	2020-present
Stuti Khadka—graduate student	2020-present
Sara Druffner—graduate student	2020-present
Michael Willis—undergraduate researcher	2021-present
Emily Peeles—undergraduate researcher	2021-present

Student Committee Service

Chair, Graduate Student Committee—Stuti Khadka, WVU, IMMP Ph.D. Program	2020-present
Chair, Graduate Student Committee—Sara Druffner, WVU, IMMP Ph.D. Program	2021-present
Member, Graduate Student Committee—Sarah Milne, WVU, IMMP Ph.D. Program	2021-present
Member, Graduate Student Committee—Ashley Divens, WVU, IMMP Ph.D. Program	2021-present
Member, Graduate Student Committee—Leland Earp, WVU, CCB Ph.D. Program	2021-present

Conference Presentations

1. *Overexpression of EPHA2 correlates with increased tumor cell migration.* Pennsylvania Academy of Science Annual Meeting, Camp Hill, PA (2010)
2. *A high level of the receptor tyrosine kinase EPHA2 leads to increased cell migration through increased activity of RAC1 and RHOA GTPases.* Commonwealth of Pennsylvania University Biologist Annual Meeting, Stroudsburg, PA (2010)
3. *Investigating the effects of EphA2/ephrin-A1 signaling on aggressive melanoma metastatic characteristics.* Commonwealth of Pennsylvania University Biologist Annual Meeting, Altoona, PA (2011)
4. *Retinoic acid stimulates translation in the neonatal testis.* The Triangle Consortium for Reproductive Biology Annual Meeting, Durham, NC (2013)
5. *Retinoic acid induces multiple hallmarks of the prospermatogonia-to-spermatogonia transition in the neonatal mouse.* ECU Research and Creative Achievement Week (2014)
6. *Retinoic acid (RA) regulates Kit translation in prospermatogonia in the neonatal testis: a novel non-genomic mechanism of RA-regulated gene expression.* The Triangle Consortium for Reproductive Biology Annual Meeting, Research Triangle Park, NC (2014)
7. *Retinoic acid (RA) regulates Kit translation in prospermatogonia in the neonatal testis: a novel non-genomic mechanism of RA-regulated gene expression.* The Society for the Study of Reproduction Annual Meeting, Grand Rapids, MI (2014)
8. *Retinoic acid (RA) regulates Kit translation in prospermatogonia in the neonatal testis: a novel non-genomic mechanism of RA-regulated gene expression.* ECU Research and Creative Achievement Week (2015)
9. *Endogenous glucocorticoids are required to suppress spontaneous gastric inflammation and metaplasia in the mouse.* Digestive Disease Week, Washington, DC (2018)
10. *Stress and sex regulation of gastric inflammation.* The Gastrointestinal Tract XVIII Conference: Integrated Biology of the GI Super-Organ. FASEB. Steamboat Springs, CO (2019)
11. *Stress and sex regulation of gastric inflammation.* NIEHS Science Days. EPA, Research Triangle Park, NC (2019)

12. *The Good, the Bad, and the Ugly: How Immune Dysregulation Promotes Gastric Cancer Development*. PRAT Symposium. NIGMS, Bethesda, MD (2020)

University Seminars

1. *PI3K/AKT/MTOR is Required for Spermatogonial Differentiation in the Mouse*. Bloomsburg University, Bloomsburg, PA (2015)
2. *Endogenous glucocorticoids are required to suppress spontaneous gastric inflammation and metaplasia*. Bloomsburg University, Bloomsburg, PA (2017)
3. *Stress and sex regulation of gastric inflammation*. West Virginia University, Morgantown, WV (2019)
4. *Stress and sex regulation of gastric inflammation*. NIEHS/NIH, Reproductive Developmental Biology Laboratory, RTP, NC (2020)
5. *The Good, the Bad, and the Ugly: How Immune Dysregulation Promotes Gastric Cancer Development*. Science Exchange. WVU, Morgantown, WV (2020)

Presented Abstracts (Posters)

1. **Busada JT**, Chappell VA, Keiper BD, Geyer CB. *Retinoic acid stimulates translation in the neonatal testis*. Society for the Study of Reproduction Annual Meeting, Montreal, CA (2013)
2. **Busada JT**, Cook KK, Willis WD, Goulding EH, Eddy M, Geyer CB. *RHOX13 is required for normal spermatogenesis and fertility in male mice*. The Triangle Consortium for Reproductive Biology Annual Meeting, Research Triangle Park, NC (2015)
3. **Busada JT**, Cook KK, Willis WD, Goulding EH, Eddy M, Geyer CB. *RHOX13 is required for normal spermatogenesis and fertility in male mice*. Society for the Study of Reproduction Annual Meeting, San Juan, PR (2015)
4. **Busada JT**, Ramamoorthy S, Cain DW, Cidlowski JA. *Glucocorticoids are required for normal stomach function in the mouse*. NIEHS Science Days, Research Triangle Park, NC (2016)
5. **Busada JT**, Ramamoorthy S, Cain DW, Xu X, Cidlowski JA. *Corticosteroids are required for gastric health in the mouse*. The Gastrointestinal Tract XVII Conference: Current Biology of the GI Tract, Mucosa, Microbiota, and Beyond. FASEB. Steamboat Springs, CO (2017)
6. **Busada JT**, Cook DN, Cidlowski JA. *Non-classical monocytes are pathogenic drivers of spasmodic polypeptide expressing metaplasia*. Cellular Plasticity: Reprogramming, Regeneration and Metaplasia. Keystone Conference. Keystone, CO (2019)

Original Published Peer-Reviewed Articles

1. Chappell VA, **Busada JT**, Keiper BD, and Geyer CB. Translational activation of developmental mRNAs during neonatal testis development. *Biol Reprod* 89(3): 61-71. 2013.
2. **Busada JT**, Kaye EP, Renegar RH, and Geyer CB. Retinoic acid induces multiple hallmarks of the prospermatogonia-to-spermatogonia transition in the neonatal mouse. *Biol Reprod*, 90(3): 64-75. 2014.
3. * **Busada JT**, Chappell VA, Niedenberger BA, Kaye EP, Keiper BD, Hogarth CA, and Geyer CB. Retinoic acid regulates *Kit* translation during spermatogonial differentiation in the mouse. *Dev Biol*, 397(1): 140-149. 2015.
**F1000Prime: K. Loveland, April, 2016.*
4. Niedenberger BA, **Busada JT**, Geyer CB. Marker expression reveals heterogeneity of spermatogonia in the neonatal mouse testis. *Reproduction*, 149(4): 329-338. 2015.
5. * **Busada JT**, Niedenberger BA, Velte EK, Keiper BD, Geyer CG. Mammalian target of rapamycin complex1 (mTORC1) is required for spermatogonial differentiation in vivo. *Dev Biol*, 407(1): 90-102. 2015.

*F1000Prime: K. Orwig, December, 2016.

6. **Busada JT**, Geyer CG. The role of retinoic acid (RA) in spermatogonial differentiation. *Biol Reprod*, 94(1): 10-20. 2016.
7. **Busada JT**, Velte EK, Serra ND, Cook KK, Niedenberger BA, Willis WD, Goulding EH, Eddy EM, Geyer CB. Rhox13 is required for quantitatively normal first wave of spermatogenesis in mice. *Reproduction*. 152(5): 379-388. 2016.
8. **Busada JT** and Cidlowski JA. Mechanisms of glucocorticoid action during development. *Curr Top in Dev Biol*. 125:147-170. 2017.
9. Oakley RH, Ramamoorthy S, Foley JF, **Busada JT**, Lu NZ, Cidlowski JA. (2018) Glucocorticoid receptor isoform-specific regulation of development, circadian rhythm, and inflammation in mice. *FASEB J*. 32(10):5258-5271. 2018.
10. **Busada JT**, Ramamoorthy S, Cain, DW, Xu X, Cook DN, Cidlowski JA. (2019) Endogenous glucocorticoids prevent gastric metaplasia by suppressing spontaneous inflammation. *J Clin Invest*. 129(3): 1345-1358. 2019.
11. Diaz-Jimenez DO, Petrillo MG, **Busada JT**, Hermosa MA, Cidlowski JA. Glucocorticoids mobilize macrophages by transcriptionally up-regulating the exopeptidase DPP4. *J Biol Chem*. 295(10): 3213-3227. 2020.
12. Chung Nien Chin S, O'Connor L, Scurr M, **Busada JT**, Graham A, Alipour Talesh G, Tran C, Sarkar S, Minamoto M, Giraud A, Cidlowski J, Sutton P, and Menheniott T. Coordinate expression loss of GKN1 and GKN2 in gastric cancer via impairment of a glucocorticoid-responsive enhancer. *Am J Physiol Gastrointest Liver Physiol*. 319(2): G175-188. 2020.
13. Kirsanova O, Renegar RH, **Busada JT**, Serra ND, Harrington EV, Johnson TA, Geyer CB. The rapamycin analog Everolimus reversibly impairs male germ cell differentiation and fertility in the mouse. *Biol Reprod*. 103(5):1132-1143. 2020.
14. **Busada JT***, Kadka S, Peterson KN, Stumpo DJ, Zhou L, Cidlowski JA, Blackshear PJ. Tristetraprolin prevents gastric metaplasia in mice by suppressing pathogenic inflammation. bioRxiv. [Preprint] 2021:2021.01.21.427435. 2021.

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15. **Busada JT***, Peterson KN, Khadka S, Xu X, Oakley RH, Cook DN, Cidlowski JA*. Glucocorticoids and Androgens Protect from Gastric Metaplasia by Suppressing Group 2 Innate Lymphoid Cell Activation. *Gastroenterology*. DOI: 10.1053/j.gastro.2021.04.075. 2021.

*Co-corresponding authors

Commentary: Noto CN, DiPaolo RJ. More testosterone less aggression...At least in the stomach. *Gastroenterology*. DOI: 10.1053/j.gastro.2021.05.046. 2021.