

## Gamze B. Bulut, PhD

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### EDUCATION

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- PhD, Genetics and Development** 2014  
University of Texas (UT) Southwestern Medical Center Dallas, TX  
Dissertation: *Ubiquitination of EpoR and p85 in Ligand Induced EpoR Down-Regulation*
- B.Sc., Molecular Biology and Genetics** 2007  
Bilkent University, Turkey

### PROFESSIONAL APPOINTMENTS

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- Research Associate** 2021 - Present  
Pediatrics, Virginia Commonwealth University  
Advisor: Judith Voynow, M.D.
- Postdoctoral Fellow** 2017 - 2021  
Cardiovascular Research Center, University of Virginia  
Advisor: Gary K. Owens, Ph.D.
- Postdoctoral Researcher** 2015 - 2017  
Biochemistry and Molecular Biology, Virginia Commonwealth University  
Advisor: Charles Chalfant, Ph.D.

### AWARDS AND HONORS

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- Children's Hospital Research Initiative Grant (\$7000) 2022
- District of Columbia Women's Board Postdoctoral Fellow 2020
- American Heart Association Postdoctoral Fellowship 2019 – 2020
- Cardiovascular Research Center T32 Fellowship 2017 – 2019
- American Heart Association Predoctoral Fellowship (\$50,000) 2012 – 2014
- UT Southwestern Medical Center Graduate Student Organization Travel Award (\$750) 2013
- UT Southwestern Medical Center GSO Poster Session 2010 – Top 5 Poster Award (\$250) 2010
- Full Undergraduate/Graduate Scholarship 2003-2014
- Ranked 1st among graduating students, Antalya Science High School 2003

### TEACHING AND MENTORING EXPERIENCE

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#### Mentoring Experience

- *Melissa Luse (2019)*. Melissa performed scRNAseq experiments using mesenteric adipose tissue samples from endothelial cell lineage tracing mouse model. This was a collaboration with Dr. Brant Isakson's laboratory.
- *Lillian Waller M.D. (2018)*. Lillian Waller worked with me for one year when she was on a break from Medical School. Lillian learned mouse breeding, tamoxifen injections, genotyping, metabolic tests, harvesting mouse tissues for flow cytometry, RT-PCR and adipocyte size analysis and earned authorship on our recent journal article.

- *Ana Tsiskarishvilli (2019)*. Ana Tsiskarishvilli, who was an undergraduate researcher, performed genotyping, immunofluorescence staining, atherosclerotic lesion composition analysis and adipocyte size measurements.
- *Sophia Kirmani (2019)*. Sophia Kirmani, also an undergraduate, did atherosclerotic lesion analysis and genotyping.

## Teaching Demonstration

2019

*John Tyler Community College*

- Interviewed for an Adjunct Professor position to teach Introductory Biology course with labs and received an offer.

## PROFESSIONAL DEVELOPMENT

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- RStudio workshops at the University of Virginia 2019
  - How to analyze RNA sequencing datasets?
  - How to analyze single cell RNA sequencing datasets?
- Self-learning: coding in Python 2020

## PUBLICATIONS

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1. **Bulut, G. B.**, Alencar, G. F., Owsiany, K. M., Nguyen, A. T., Karnewar, S., Haskins, R. M., Waller, L. K., Cherepanova, O. A., Deaton, R. A., Shankman, L. S., Keller, S. R., & Owens, G. K. (2020). KLF4 (Kruppel-Like Factor 4)-Dependent Perivascular Plasticity Contributes to Adipose Tissue inflammation. *Arteriosclerosis, Thrombosis, and Vascular Biology*.
2. Craig, J. E., Miller, J. N., Rayavarapu, R. R., Hong, Z., **Bulut, G.B.**, Zhuang W., Sakurada, S.M., Temirov, J., Low, J.A., Chen, T., Pruett-Miller, S.M., Huang, L.J., and Potts, M.B. MEKK3-MEK5-ERK5 signaling promotes mitochondrial degradation. *Cell Death Discov.* 6, 107 (2020).
3. Shin, J., S. Tkachenko, M. Chaklader, C. Pletz, K. Singh, **G. B. Bulut**, Y. M. Han, K. Mitchell, R. A. Baylis, A. A. Kuzmin, B. Hu, J. D. Lathia, O. Stenina-Adognravi, E. Podrez, T. Byzova, G. K. Owens and O. A. Cherepanova (2022). "Endothelial OCT4 is atheroprotective by preventing metabolic and phenotypic dysfunction." *Cardiovasc Res*.
4. Kim, M., N. T. Vu, X. Wang, **G. B. Bulut**, M. H. Wang, C. Uram-Tuculescu, R. Pillappa, S. Kim and C. E. Chalfant (2022). "Caspase-9b drives cellular transformation, lung inflammation, and lung tumorigenesis." *Mol Cancer Res*.
5. Vu NT, Park MA, Shultz MD, **Bulut, G.B.**, Ladd AC, Chalfant CE. (2016) Caspase-9b Interacts directly with cIAP1 to Drive Agonist-Independent Activation of NF-κB and Lung Tumorigenesis. *Cancer Res.* 76(10):2977-89
6. Dutchak PA, Laxman S, Estill SJ, Wang C, Wang Y, Wang Y, **Bulut, G.B.**, Gao J, Huang LJ, Tu BP. (2015) Regulation of Hematopoiesis and Amino Acid Homeostasis by mTORC1 Inhibitor NPRL2. *Cell Reports*, 12(3):371-9
7. Potts, M. B., H. S. Kim, K. W. Fisher, Y. Hu, Y. P. Carrasco, **Bulut, G.B.**, Y. H. Ou, M. L. Herrera-Herrera, F. Cubillos, S. Mendiratta, G. Xiao, M. Hofree, T. Ideker, Y. Xie, L. J. Huang, R. E. Lewis, J. B. MacMillan & M. A. White (2013) Using functional signature ontology (FUSION) to identify mechanisms of action for natural products. *Sci Signal*, 6, ra90.
8. **Bulut, G.B.**, R. Sulahian, H. Yao & L. J. Huang (2013) Cbl ubiquitination of p85 is essential for Epo-induced EpoR endocytosis. *Blood*, 122, 3964-72.

9. **Bulut, G.B.**, R. Sulahian, Y. Ma, N. W. Chi & L. J. Huang (2011) Ubiquitination regulates the internalization, endolysosomal sorting, and signaling of the erythropoietin receptor. *J Biol Chem*, 286, 6449-57.
10. Huang, L. J., Shen Y. M., **Bulut, G.B.** (2010) Advances in understanding the pathogenesis of primary familial and congenital polycythaemia. *Br J Haematol*, 148, 844-52.

#### **PUBLICATIONS** (in preparation)

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1. **Bulut, G. B.**, Zheng, S., Kummarapurugu, A., Voynow, J. Neutrophil elastase degrades HDAC family proteins to reprogram human blood monocyte derived macrophages.
2. Karnewar, S, **Bulut, G. B.**, Karnewar, V, Shankman, L. S., Owens, G. K. SMC specific Conditional KO of IKK $\beta$  shows smaller atherosclerotic lesions and more stable plaques.
3. Luse, M., **Bulut, G.B.**, Isakson, B. Endothelial cell scRNAseq in mesenteric adipose tissue.
4. Karnewar, S., Karnewar, V., Bradley, X., Alencar, G.F., **Bulut, G.B.**, Shankman, L.S., Owens, G.K. Regression of advanced atherosclerotic lesions in response to long term chow diet feeding is associated with increased IL1 $\beta$ -dependent Endo-MT.
5. Abebayahu, D., **Bulut, G.B.**, Owsiany K., Owens, G., Barker T. Bleomycin injury impacts smooth muscle cell transitions in the lung.
6. Deaton, R., **Bulut, G.B.**, Owens, G., Generation of a new Myh11 Cre ERT2 mouse model that is also expressed in female mice.

#### **Abstracts/Poster Presentations**

1. Neutrophil elastase (NE) mediated degradation of histone deacetylases in macrophages promotes High Mobility Group Box1 export from nucleus to cytosol. NACFC 2022.
2. Klf4 dependent plasticity of perivascular cells regulates obesity induced inflammation and endothelial cell polarization in adipose tissue. Arteriosclerosis, Thrombosis, and Vascular Biology (ATVB) Vascular Discovery Meeting 2020. (Invited talk)
3. Lineage tracing and scRNA sequencing reveals Klf4 dependent perivascular cell phenotypes within epididymal adipose tissue associated with diet induced obesity, Cedars Sinai Medical Center, Los Angeles (Host Dr. Moshe Arditi), March 9th, 2020 (Canceled due to Covid-19). (Invited talk)
4. Klf4 dependent plasticity of perivascular cells is detrimental for diet induced obesity associated adipose tissue inflammation and fibrosis. American Heart Association (AHA) Scientific Sessions 2019. (Poster)
5. Single cell RNA sequencing of Smooth Muscle and Pericyte derived macrophage-like cells within epididymal fat. Gordon Research Conference, Vascular Biology 2019 (Poster)
6. Identification of smooth muscle derived macrophages as a novel potential source of tissue resident macrophages. Arteriosclerosis, Thrombosis, and Vascular Biology (ATVB) 2018 (Poster)
7. Cbl ubiquitination of p85 is essential for Epo-induced EpoR endocytosis. Annual American Association of Cancer Research Meeting 2013. (Invited talk)

#### **PROFESSIONAL AFFILIATIONS**

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American Heart Association

2018 - Present

## REVIEWING ACTIVITIES

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### Peer-reviewed Journals:

- Arteriosclerosis, Thrombosis, and Vascular Biology.
- Molecular Cancer Research

### Awards and Grants:

- Gordon Research Conference Best Graduate Student poster award (2019)

## SERVICE AND COMMUNITY OUTREACH

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### American Heart Association DC Women's Board 2020

- *Attended Fundraiser Fashion Show in Washington, DC. Represented the researchers in a broad audience supporting vascular biology research. Communicated research data and impact with donors from public.*

### Session Co-chair 2019

- Gordon Research Conference on Vascular Biology, Ventura CA

### Career Development Talk Series Panelist 2019

- *Panel discussion about balancing family and science*