

Andrea Nicole Walens

Home Address: 1427 Holly Hill Dr, Durham, NC 27713

Cell: 734-904-2862 • **Email:** awalens@email.unc.edu/andrea.walens@gmail.com

EDUCATION

University of North Carolina, Chapel Hill, NC

Postdoctoral Fellow in Cancer Control Education, July 2019-July 2022

Coursework includes: Cancer Pathobiology, Cancer Epidemiology and Pathogenesis, Cancer Epidemiology Methods, Advance Cancer Epidemiology, Social and Behavioral Sciences in Public Health

Availability; 9AM-5PM or any other 8 hour chunk of time until 4/16 at least unless Work From Home extended

Duke University, Durham, NC

PhD Candidate in Molecular Cancer Biology, June 2019, GPA 3.812

Chancellor's Scholarship Recipient

Nominated for the Jo Rae Wright Fellowship for Outstanding Women in Science 2018

Coursework includes: Cellular Signaling, Oncogenesis, Biostatistics, Computational Statistics, Cellular Biology, Pharmacology

University of Georgia, Athens, GA

B.S. Genetics and B.S. Biology accepted May 2014, GPA 3.78, *Magna cum laude*

Coursework includes: Genetics, Biochemistry, Evolutionary Biology, Bioinformatics, Advanced Genetics, Epigenetics of Learning and Memory, Cellular Biology, Neurobiology

POST-DOCTORAL RESEARCH

Dr. Melissa Troester's group, University of North Carolina Department of Epidemiology and Lineberger Cancer Center

Chapel Hill, NC

Postdoctoral Fellow

July 2019-July 2022

- Uncovering differences in tumor infiltrating lymphocytes in relation to breast cancer subtype, race, and survivorship
- Analyzing stromal content in benign breast tissue and correlation with breast cancer risk
- Collaborating with Dr. Stephen Hursting on questions of obesity and aging and breast cancer risk

PRE-DOCTORAL RESEARCH

Dr. James Alvarez's Lab, Duke Department of Pharmacology & Cancer Biology

Durham, NC

Thesis Lab

November 2014-June 2019

- Identifying the role of the tumor microenvironment in breast cancer dormancy and recurrence; Manuscript in review at *eLife*
- Single cell barcoding to track the clonal evolution of primary tumors, residual disease, and recurrent tumors in an inducible Her2+ mouse model; Manuscript in review at *Nature Cell Biology*
- Studying the effect of endocrine treatment of ER+ breast cancer on Par-4 tumor suppressor levels; co-author on paper in *Molecular Cancer Research*

Duke Scholars in Molecular Medicine, Duke Medical School

Durham, NC

Oncology and Regenerative Medicine

September 2017-May 2018

- Shadowed clinicians in the various oncology departments in the Duke Cancer Center
- Gave scholarly presentations on my work to peers and also at Grand Rounds for Hematology/Oncology
- Traveled to the American Society of Clinical Oncology conference in Chicago, IL

Dr. Jeremy Force, Duke Cancer Institute
Durham, NC

Volunteer Clinical Trial Protocol Writer

August 2017-January 2018

- Assisted Dr. Force in writing consent forms for a prospective clinical trial
- Aided in design and writing of a retrospective clinical trial for inflammatory breast cancer
- Wrote and edited introductory material for a prospective clinical trial for immunotherapy in the breast cancer group

Dr. Neil Spector's Lab, Duke Oncology, Pharmacology & Cancer Biology
Durham, NC

Rotation Project

September-November 2014

- Studied the mechanism of resistance to lapatinib in Her2+ breast cancer
- Studied the interaction of heat shock proteins, specifically Hsp72, in tumorigenesis of Her2+ breast cancer

Dr. David Kirsch's Lab, Duke Radiation Oncology, Pharmacology & Cancer Biology
Durham, NC

Rotation Project

March-May 2015

- Generated a CRISPR sarcoma model mouse (LSL-Kras with sgRNA for mouse p53); co-author on paper in *Nature Communications*
- Studied the effect of protease inhibitors on Lumicell technology activation, specifically LUM015 and LUM033

ADVOCACY WORK

American Cancer Society Cancer Action Network,
Durham, NC

ACT! Lead for District 1 NC

September 2015-present

- Lobby for cancer related bills on the local, state, and federal level
- Advocate for patients and cancer researchers through speaking at events and with survivors
- Maintain a working relationship with District 1 representatives for North Carolina and North Carolina senators

DetermiNation Team, American Cancer Society
Durham, NC

Volunteer

December 2017-present

- Raise money for the American Cancer Society through running national races
- Successfully raised \$2200 for the American Cancer Society for the Raleigh Rock N' Roll Half in April 2018
- Currently raising \$2500 for the American Cancer Society for the Walt Disney World Marathon in January 2019

Duke Breast Risk Assessment Clinic, Dr. Plichta, Duke Cancer Center
Durham, NC

Volunteer

February 2018-present

- Aide in the planning and execution of breast education sessions for the Durham community
- Provide information during breast education sessions on cancer research at Duke university
- Maintain social media interactions with the Durham community for the clinic

UNDERGRADUATE RESEARCH

Dr. Mark Farmer's Lab, Chairman of Biological Sciences/UGA
Athens, GA

Laboratory Technician

January 2011–August 2014

- Single cell eukaryote sterile cell culture, media production, cell state analysis
- Dish washing, organization of chemicals, autoclaving, sterilizing, and other basic lab maintenance

Dr. Melissa Davis's Lab, Genetics Department/UGA
Athens, GA

Undergraduate Researcher

January 2013-May 2014

- Analyzing the association of polymorphisms in the CARM1 gene to breast cancer in African American women
- Analyzing possible functional significance of these polymorphisms in cancer
- Expression primers created to amplify regions of CARM1 with missense and frameshift SNPs

Memorial Sloan Kettering Cancer Center – Dr. Kenneth Offit’s lab

New York, NY

Gerstner Sloan Kettering SURP

Summer 2013

- Analyzed the promoter region of *hTERT* for variants and SNPs associated with six different cancer cohorts
- Sequenced 1454 samples from AJ (Ashkenazi Jewish) and non AJ prostate cancer samples, AJ and non AJ high risk breast cancer samples, Breast and Ovarian cancer samples, urothelial cancer samples, lung cancer samples, and testicular melanoma cancer samples
- Discovered four unknown germline variants, one of which has been characterized in bladder, glioma, and melanoma cancer cases as a somatic mutation

Georgia Regents University – Dr. Khleif’s lab, Cancer Center Director

Augusta, GA

STAR program

Summer 2012

- Analyzed the effect of PI3K/AKT pathway inhibitors on Treg proliferation and homeostasis *in vitro* and *in vivo*.
- Mice were treated on a schedule with titrated doses of inhibitors, then sacrificed and spleens were removed.
- T cell populations were then isolated and analyzed via flow cytometry for Treg population percentage per mouse spleen

Dr. Mark Farmer’s Lab, Chairman of Biological Sciences/UGA

Athens, GA

Undergraduate Researcher

August 2011-December 2012

- Sequenced the coding gene for Trypanin in Euglenid and Euglenid-like organisms.
- Thoroughly examined the genetic makeup of euglenid flagellates, looking at the evolutionary relationships between euglenids and other euglenozoan protists

Lankenau Institute for Medical Research – Dr. Gilmour’s Lab

Wynnewood, PA

Research Bench Intern

Summer 2011

- UVB experiment in which mice were UVB irradiated for a certain period of time, then sacrificed and skin grafts were taken
- Skin grafts were tested for DNA damage via Soutwestern blot

SKILLS&INTERESTS

Molecular:

Expression primer design, RT-PCR, qPCR, Sanger Sequencing, PCR clean-up, Gel extraction, TaqMan Genotyping Assay, Human cancer cell culture, Mouse cancer cell culture, single cell eukaryote culture, Lentiviral transduction, Western Blots, splenocyte prep, keratinocyte prep, macrophage prep, MACS magnetic separation, mouse handling (wean, genotype, weigh, tail vein injections, leg muscle injections, MEF prep, mammary gland injections, shaving), Elispots, Southwestern blots, IHC, UVB irradiation, Antibody staining, Flow Cytometry on FACSCanto, ChIP, Maxi Prep, cytokine array, ELISA, FACS

Technical/Bioinformatics:

Sequencher Analysis, TCGA, Cosmic, Haploreg, TFSearch, ConSite, Jaspar, 1000 genomes, rVista, R, Cluster, Java TreeView

FELLOWSHIPS

Training Program in Cancer Control Education – UNC CH Lineberger Comprehensive Cancer Center. PI: Kurt Ribisl, T32-CA057726-28 July 2019-June 2020

“Awakening the dormant tumor: the role of the tumor microenvironment in breast cancer recurrence” F31 CA220957 August 2017-July 2021

Molecular Cancer Biology training grant: PI: WANG, XIAO-FAN, Grant: 5T32CA059365-20, awarded September 2014-July 2015

PUBLICATIONS

Walens A*, Lin J*, Damrauer JS*, Lupo R, Newcomb R, Fox DB, Mabe NW, Gresham J, De Buysscher T, Kelkar H, Mieczkowski PA, Owzar K, Alveraz JV. (2018) Adaptation and Selection Shape Clonal Evolution During Residual Disease and Recurrence, *In Review Nature Cell Biology*

Walens A, DiMarco AV, Kroger BR, Damrauer JS, Lupo R, Alvarez JV. (2019) CCL5 promotes breast cancer recurrence through macrophage recruitment in residual tumors. *eLife*.

Damrauer JS*, Phelps SN*, Amuchastegui K, Lupo R, Mabe NW, **Walens A**, Kroger BR, Alvarez JV, (2018) Foxo-dependent Par-4 upregulation prevents the long-term survival of residual cells following inhibition of the PI3K-Akt pathway. *Molecular Cancer Research*. 16(4):599-609

Huang J, Chen M, Whitley MJ, Kuo HC, **Walens A**, et al., (2017) Generation and comparison of CRISPR-Cas9 and Cre-mediated genetically engineered mouse models of sarcoma. *Nature Communications* 9:15999

Eid RA, Friendman KM, Mkrtichyan M, **Walens A**, King W, Janik J, Khleif SN, (2015) Akt1 and -2 inhibition diminishes terminal differentiation and enhances central memory CD8+ T-cell proliferation and survival. *Oncoimmunology* 4(5): e1005448

Davis MB, **Walens A**, Hire R, Mumin K, Brown AM, Ford D, Howerth EW, Monteil M, (2015) Distinct Transcript Isoforms of the Atypical Chemokine Receptor 1 (ACKR1)/Duffy Antigen Receptor for Chemokines (DARC) Gene Are Expressed in Lymphoblasts and Altered Isoform Levels Are Associated with Genetic Ancestry and Duffy-Null Allele. *PLoS One* 10(10): e0140098

*Authors contributed equally

SCHOLARLY PRESENTATIONS

Walens A[§], DiMarco AV, Kroger B, Damraeur JS, Lupo R, Alvarez J, “Awakening the dormant tumor: the role of CCL5 and macrophages in breast cancer recurrence,” Duke University Pharmacology and Cancer Biology Department Retreat, Durham, NC, September 2018 *Poster Presentation*

Walens A[§], “The role of the tumor microenvironment in breast cancer dormancy and recurrence,” AACR Special Conference on Cancer Dormancy and Residual Disease, Montreal, CA, June 2018 *Selected Talk/Poster Presentation*

Walens A[§], Damraeur JS, Kroger B, Williams N, Shinder E, Lupo R, Phelps A, Alvarez J, “Awakening the dormant tumor: the role of CCL5 and macrophages in breast cancer recurrence,” Duke Cancer Institute Scientific Retreat, Durham, NC, October 2017 *Poster Presentation*

Walens A[§], Damraeur JS, Kroger B, Williams N, Shinder E, Lupo R, Phelps S,

Alvarez J, "Awakening the dormant tumor: the role of CCL5 and macrophages in breast cancer recurrence," Duke University Pharmacology and Cancer Biology Department Retreat, Wrightsville, NC, September 2017 *Poster Presentation*

Walens A[§], Damrauer JS, Kroger B, Phelps A, Alvarez J, "The Role of the Tumor Microenvironment in Breast Cancer Dormancy," Keystone Symposia, Cell Plasticity within the Tumor Microenvironment, Big Sky, MT, January 2017 *Poster Presentation*

Walens A[§], Damrauer JS, Kroger B, Phelps S, Alvarez J, "The Role of the Tumor Microenvironment in Breast Cancer Dormancy," Duke Cancer Institute Scientific Retreat, Durham, NC, October 2016 *Poster Presentation*

Walens A[§], "The Role of the Microenvironment in Breast Cancer Dormancy," Duke University Pharmacology and Cancer Biology Department Retreat, Wrightsville, NC, September 2016 *Selected Talk*

Walens A[§], Kroger B, Damrauer JS, Alvarez J, "Interplay of Par-4 and PI3K Pathway in Response to Therapy for ER+ Breast Cancer," Duke University Pharmacology and Cancer Biology Department Retreat, Wrightsville, NC, September 2015 *Poster Presentation*

Walens A[§], Bennett B, Mumin K, Campbell H, Lou M, Hire R, Monteil M, Davis M, "Investigating correlations of DARC under-expression (Duffy Null phenotypes) with increased Breast Cancer lymph node metastasis" AACR Annual Meeting, San Diego, CA, April 2014 *Poster Presentation*

Mumin K[§], **Walens A**, Bennett B, Swanson J, Hire R, Monteil M, Davis M, "Investigating correlations of DARC under-expression (Duffy Null phenotypes) with increased Breast Cancer lymph node metastasis" AACR Conference Cancer Health Disparities, Atlanta, GA, December 2013 *Poster Presentation*

Hire R[§], Bennet B, **Walens A**, Thomsen C, Chukwu A, Davis M, "Differential Regulation of the ERBB4 and CARM1 Gene in Breast Cancer Cells: an epigenetic and expression profile" University of Georgia Genetics Department Symposium, University of Georgia, Athens, GA, September 2013 *Poster Presentation*

Walens A^{*§}, Gerber G*, Manschreck C, Rau Murthy R, Corines M, Garcia-Grossman I, Sullivan J, Littman J, Zhang L, Bajorin D, Feldman D, van Alstine L, Murali R, Klein E, Stadler Z, Schrader K, Joseph V, Offit K, (*equal contributions), "Germline variants in *hTERT* promoter identified in prostate, breast, bladder and lung cancers" GSK SURP, Memorial Sloan Kettering Cancer Center, New York, New York, August 2013 *Poster Presentation*

M Dye K[§], **Walens A**, Farmer M, "Identification of Trypanin and Trypanin Related Proteins in Euglenids", International Congress on Protistology, Vancouver, BC, Canada, August 2013 *Poster Presentation*

Walens A[§], Abu Eid R, Mkrtichyan M, Friedman K, Khleif S, "PI3K/AKT pathway necessary for Treg proliferation *in vitro* but not T cell homeostasis *in vivo*" STAR Program, Georgia Health Science University (now Georgia Regents), Augusta, GA, July 2012 *Poster Presentation*

Walens A[§], Hayes C, Gilmour S, "UVB irradiation and the immune system" Lankenau

Summer Bench Intern Program, Lankenau Institute for Medical Research, Wynnewood, PA,
July 2011 *Poster Presentation*

*Authors Contributed Equally §Presenter

MENTORING

Undergraduate Technicians: Alyssa Farber (Fall 2011 – Fall 2012), Emily Polur (Fall 2012 – Fall 2013), Vitaliano Cama (Spring 2012 – Fall 2013), Rachel Vaizer (Spring 2014), Samantha Chang (Spring 2014).

I trained each of them in basic lab techniques and cell culture maintenance. I oversaw their work as the senior technician in Dr. Mark Farmer's lab, UGA, Athens, GA.

Undergraduate Researchers and Visiting Students: Ben Kroger (Summer 2015 – May 2017), Nidha Williams (Summer 2017), Eliane Shinder (Spring 2017-Spring 2018), Cui Rong Teo (September 2018)

I trained Ben and Eliane for their independent projects in Dr. James Alvarez's lab, Duke University, Durham, NC. Nidha Williams was a visiting undergraduate from NC State and Cui Rong Teo was a visiting student from Duke-NUS in Singapore.

High School Students: Alexa Tomlinson (Fall 2019 – Spring 2020)

I trained Alexa on basic principles of research and research methods in molecular epidemiology at UNC.

Postdoctoral Teaching Assistant in Mentorship – North Carolina School of Science and Math, Durham, NC (October 2019-February 2020) *Assist senior students in mentorship projects at institutions around the Triangle and other research methods.*

University of Georgia (UGA) ACTIVITIES

Genetics Students Association executive board • Sigma Delta Tau sister and executive board • Relay for Life executive board • Hillel's JHealth • Phi Beta Kappa Honors Society • Alpha Lambda Delta Honors Fraternity

Duke University ACTIVITIES

Society of Duke Fellows Member • Recruitment Coordinator for Pharmacology and Cancer Biology 2015 • American Cancer Society Cancer Action Network of North Carolina (ACS CAN NC) ACT! Lead for NC District 1 • Duke Jewish Graduate and Professional Student Association Member • Duke Science & Society • Duke Graduate and Professional Student Council • Duke Graduate Student Affairs Liaison • DICOTS Career Mentorship program • SURPH Graduate Student Director • Duke Scholars in Molecular Medicine • NIH IPPCR Certification

University of North Carolina ACTIVITIES

Mentor for the North Carolina School of Science and Math Mentorship Program • FORCE Outreach coordinator for Raleigh • ACS CAN ACT! Lead for NC District 1 • Neuse River Golden Retriever Rescue Volunteer