



Name: Kristal L. Gant

Email: kgant@wisc.edu

Education: BS Biology, Elizabeth City State University, 2010-2014

Ph.D. Major Professor: Manish Patankar

Degree Objective: Ph.D., Endocrinology and Reproductive Physiology, 2016-present

Current Thesis Title and Abstract:

Title: Understanding Extracellular Matrix Alterations in High Grade Serous Ovarian Cancer

Ovarian cancer is the fifth leading cause of cancer deaths in women and is the most lethal of the gynecological cancers because of late stage detection. High grade serous ovarian cancer (HGSOC) accounts for more than 80% of ovarian cancer diagnoses. Five-year overall survival (OS) is less than 35% but early stage detection significantly improves OS to 92%. However, there are no efficient clinical diagnostic tests for early detection of HGSOC. Current tests analyzing the serum (CA125, HE-4) and abdominal cavity (ultrasound) are not specific enough and are essentially insufficient in detecting early ovarian pathogenesis. **It is imperative to have a basic understanding of HGSOC etiology and the biochemical alterations associated with its progression.** The extracellular matrix (ECM) proteins, specifically collagen, are significantly reorganized in malignant tissues. Two main questions follow. First, how soon in disease progression does the collagen begin to change, and second, what factors and enzymes are involved in the remodeling process? The completion of this thesis work will help us understand the biological significance of these ECM changes, characterize the collagen reorganization events that may be occurring early in HGSOC development, and ultimately aid in the development of early diagnostic imaging modalities.

Funding:

National Institute of General Medical Sciences (NIGMS) of the National Institutes of Health (NIH), TEAM Science R25GM083252, August 2016-August 2018

Sparkle of Hope Research Award 233-AAA2595, September 2018-August 2019



National Institutes of Health (NIH), National Cancer Institute (NCI) Diversity Supplement under grant RO1CA206561, September 2019-present

Honors/Awards:

Endocrinology and Reproductive Physiology Symposium Oral Presentation, “Best of Session Talk” award, May 2018

The National GEM Consortium, Associate GEM Fellow, conferred September 2019

The National GEM Consortium, GEM-NSF Student Travel Grant Award, September 2019

Basic and Pre-Clinical Poster Award, 2019 Women’s Health and Health Equity Research Lecture and Symposium, UW-Madison, Department of Obstetrics and Gynecology, October 2019

University of Missouri, Decoding Science Blog feature, “A return to mentor: Gant advises on PREP for Ph.D.’s”, November 2019

University of Wisconsin-Madison, Department of OB/GYN newsletter highlight, “Gant creates STEM support program”, July 2020

The HBCU STEMulUS, feature in Wednesday Spotlight Series, November 2020

The Society for the Study of Reproduction (SSR), feature in #BlackinRepro series, March 2021

The Edward A. Bouchet Graduate Honor Society, UW-Madison Chapter Inductee, April 2021

Honorary Associate, Department of Biomedical Engineering, UW-Madison, April 2021

NSF Includes Coordination Hub, Blog feature/interview, “Social Media and STEM Diversity: How minority doctoral students are incorporating social media to drive STEM diversity”. May 2021

Grants Received:

ERP Research Supply Grant, June 2019, \$500

ERP Recruitment Grant, September 2019, \$500

Professional Development Grant, UW-Madison, Division of Diversity, Equity, and Educational Achievement, April 2021, \$500

Publications:



Rentchler, E., **Gant, K.L.**, Drapkin, R., Patankar, M. and Campagnola, P. (2019). Imaging collagen alterations in STICs and high grade ovarian cancers in the fallopian tubes by second harmonic generation microscopy. *Cancers*. 11(11):1805.

Gant, K.L.; Jambor, A.N.; Li, Z.; Rentchler, E.C.; Weisman, P.; Li, L.; Patankar, M.S.; Campagnola, P.J. (2021). Evaluation of Collagen Alterations in Early Precursor Lesions of High Grade Serous Ovarian Cancer by Second Harmonic Generation Microscopy and Mass Spectrometry. *Cancers*. **Under review.**

Selected Presentations:

Poster Presentation: Using Collagen Remodeling, Deposition, and Gene Expression as BioMarkers for Ovarian Cancer Development and Progression. Endocrinology and Reproductive Physiology Symposium. June 2017.

Poster Presentation: Using Collagen Remodeling, Deposition, and Gene Expression as BioMarkers for Ovarian Cancer Development and Progression. University of Wisconsin-Madison Carbone Cancer Center Research Retreat. Madison, WI. April 2018.

Oral Presentation: Biochemical Characterization of Remodeled Collagen from the Ovarian Tumor Microenvironment. Endocrinology and Reproductive Physiology Symposium. Madison, WI. May 2018.

Poster Presentation: Developing a 3D Culture System to Recapitulate the Ovarian Tumor Microenvironment (TME). Endocrinology and Reproductive Physiology Symposium. Madison, WI. April 2019.

Poster Presentation: Characterizing Collagen in Precursor Lesions of High Grade Serous Ovarian Cancer. The National GEM Consortium Annual Conference. Chicago, IL. September 2019.

Poster Presentation: Characterizing Collagen in Precursor Lesions of High Grade Serous Ovarian Cancer. Women's Health and Health Equity Research Lecture and Symposium. Madison, WI. October 2019.

Poster Presentation: Developing a 3D Culture System to Recapitulate the Ovarian Tumor Microenvironment (TME). Women's Health and Health Equity Research Lecture and Symposium. Madison, WI. October 2019.



Poster presentation: Characterizing Collagen in Precursor Lesions of High Grade Serous Ovarian Cancer. UW Madison, Carbone Cancer Center Research Retreat. Madison, WI. March 2020.

Poster presentation: Characterizing Collagen in Precursor Lesions of High Grade Serous Ovarian Cancer. ERP Symposium (Virtual), June 2020.

Flash poster presentation: Characterizing Collagen in Precursor Lesions of High Grade Serous Ovarian Cancer. UW Madison, Carbone Cancer Center Research Retreat (Virtual), March 2021.

Oral presentation: Collagen Reorganization in Early Precursor Lesions of High Grade Serous Ovarian Cancer. ERP Symposium (Virtual), June 2021.

Other Presentations:

WiscAMP Excel Program, Presenter, July 2018.

WiscAMP Excel Program, Co-Presenter, July 2019.

Invited Talk. PREP Scholars Program, University of Missouri-Columbia, Columbia, MO. October 2019.

Invited Talk. Madison College Transfer Week (Virtual), Co-Presenter, October 2020.

HBCU Homecoming Edition of S.T.E.M.ing While Black (Virtual), Co-Organizer and Co-Presenter, October 2020.

Invited Talk. Columbus State University, Louis Stokes Alliances for Minority Participation (LSAMP) (Virtual), Co-Presenter, Unboxing STEM (No Cap) Career Pathways Workshop (Virtual), March 2021.

Teaching and Mentorship:

Mentor to incoming 1st year graduate students and ERP applicants, September 2017-present

Teaching Assistant (TA), Ethical Conduct of Research, September 2018-December 2018

WiscAMP Student Mentor, Summer EXCEL program, September 2018-May 2021

STEMming Phorward LLC, Founder, February 2019-present

Dear Diary of Madison, Mentor, May 2020-present

LS-PAC MODELS Center, Louisiana State University (LSU), Peer Mentor, May 2021-present

ERP Service:



ERP Recruitment Volunteer, September 2017- December 2019

ERP Student Committee, July 2018 – May 2020