

Brandi Patrice Smith
P.O. Box 1133
Champaign, IL 61824
bpsmith1992@gmail.com
(662) 299-7035

EDUCATION

University of Illinois at Urbana-Champaign (UIUC)

Doctor of Philosophy, Informatics

2021

Concentration: Health and Medical Informatics

Mississippi State University, Starkville, MS

Master of Science, Mathematics

2016

Minor in Statistics

Mississippi Valley State University, Itta Bena, MS

Bachelor of Science, Mathematics

2014

Magna cum Laude

RESEARCH EXPERIENCE

2019- **Rebeca Smith's Disease Modeling Lab (UIUC)**

Graduate Research Assistant

- Statistical analysis of longitudinal datasets
- Developing computational methods for analyzing phthalate mixtures to predict health outcomes

2020 **Jodi Schneider Lab (UIUC)**

Research Assistant

- Evaluation and optimization of systematic review tools using R, Python and SQL

2017 **Dow Agrosiences, Research Park at the UIUC**

Data Analyst

- Analyzed gene expressions from toxicogenomics databases for drug development purposes using R and SQL

2016-19 **Zeynep Madak-Erdogan Lab (UIUC)**

Research Assistant

- RNA sequence analysis – trim, map, align, read, and statistical analysis to identify differentially expressed genes using Linux and R

2014 **Human Genome Sequencing Center, Baylor College of Medicine, Houston, TX**

Research Assistant

- Enhanced code to convert a MySQL database to NOSQL
- Enhanced the usability of a gene search engine by implementing natural language processing

TEACHING EXPERIENCE

2019 **University of Illinois at Urbana Champaign**

Teaching Assistant – to Dr. Alexander Lipka, Applied Statistical Methods I

- Review, discuss, and test students on statistical concepts including – descriptive statistics, probability, and statistical inferences – use of R and SAS

2019 **Mississippi Valley State University**

Instructor – College and Intermediate Algebra

- Taught and reviewed algebraic concepts including – linear and quadratic equations, inequalities, and higher order polynomials

2018 **University of Illinois at Urbana-Champaign**

Teaching Assistant – to instructor Michael Haberman Introduction to Python for Data Science

- Discussion of fundamental programming functions through Piazza web platform
- Grading of programming projects

2015-16 **Mississippi State University, Starkville, MS**

Instructor – College Algebra

2014 **Mississippi State University, Starkville, MS**

Teaching Assistant – to Instructor Julie Nation, Trigonometry

- Reviewed trigonometric concepts; graded tests

PUBLICATIONS

First Author:

- 2018 **Smith, B. P.**, & Madak-Erdogan, Z. (2018). Urban neighborhood and residential factors associated with breast cancer in African American women: A systematic review. *Hormones and Cancer*, 9(2), 71-81.
- 2020 **Smith, B.P.**, Auvil, L.S., Welge, M. et al. Identification of early liver toxicity gene biomarkers using comparative supervised machine learning. *Sci Rep* 10, 19128 (2020). <https://doi.org/10.1038/s41598-020-76129-8>,
- 2020 **Smith, B. P.**, Cardoso-Mendoza, E., Flaws, J. A., Madak-Erdogan, Z., & Smith, R. L. (2020). Racial Differences in Lifestyle, Demographic, and Health Factors Associated with Quality of Life (QoL) in Midlife Women. *Under review at Women's Midlife Health*

Co-Author:

- 2017 Chen KLA, Zhao YC, Hieronymi K, **Smith BP**, Madak-Erdogan Z (2017) Bazedoxifene and conjugated estrogen combination maintains metabolic homeostasis and benefits liver health. *PLoS ONE* 12(12): e0189911. <https://doi.org/10.1371/journal.pone.0189911>
- 2019 Madak-Erdogan Z, Band S, Zhao YC, **Smith BP**, Kulkoyluoglu-Cotul E, Zuo Q, Casiano AS, Wrobel K, Rossi G, Smith RL, Kim SH. Free fatty acids rewire cancer metabolism in obesity-associated breast cancer via estrogen receptor and mTOR signaling. *Cancer research*. 2019 Jan 1;canres-2849.
- 2019 Kulkoyluoglu-Cotul E, **Smith BP**, Wrobel K, Zhao YC, Chen KLA, Hieronymi K, Imir OB, Duong K, O'Callaghan C, Mehta A, Sahoo S, Haley B, Chang H, Landesman Y, Madak-Erdogan Z. Combined Targeting of Estrogen Receptor Alpha and XPO1 Prevent Akt Activation, Remodel Metabolic Pathways and Induce Autophagy to Overcome Tamoxifen Resistance. *Cancers*. 2019; 11(4):479.
- 2019 Ziegler, Yvonne, Mary J. Laws, Valeria Sanabria Guillen, Sung Hoon Kim, Parama Dey, **Brandi P. Smith**, Ping Gong et al. "Suppression of FOXM1 activities and breast cancer growth in vitro and in vivo by a new class of compounds." *NPJ Breast Cancer* 5, no. 1 (2019): 1-11.
- 2020 Cotul, E.K.; Zuo, Q.; Santaliz-Casiano, A.; Imir, O.B.; Mogol, A.N.; Tunc, E.; Duong, K.; Lee, J.K.; Ramesh, R.; Odukoya, E.; Kesavadas, M.P.; Ziogaite, M.; **Smith, B.P.**; Mao, C.; Shapiro, D.J.; Park, B.H.; Katzenellenbogen, B.S.; Daly, D.; Aranda, E.; O'Neill, J.D.; Walker, C.; Landesman, Y.; Madak-Erdogan, Z. Combined Targeting of Estrogen Receptor Alpha and Exportin 1 in Metastatic Breast Cancers. *Cancers* 2020, 12, 2397.

PROFESSIONAL TALKS

- 2020 **Effects of Phthalate Exposure and health Disparities on Reproductive Health at Midlife:** Collaborative on Health and the Environment, Young EDC Scientist Showcase (YESS), November 2020

CONFERENCE PRESENTATIONS

- 2018 **A machine learning-based approach to identify biomarkers of environmental toxicant exposures relevant to liver cancer disparities in rural Illinois;** 11th AACR Conference on The Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved, New Orleans, LA
- 2018 **Urban neighborhood and residential factors associated with breast cancer in African American women: A systematic review;** American Association for Cancer Research, Health Disparities Mini-symposium for Continuing Medical Education Credit, Chicago, IL
- 2015 **Computational Analysis of Aflatoxin Accumulation in Maize Gene Expression;** Abstract presented at the Emerging Researchers National (ERN) Annual Conference, Washington *D.C.*

HONORS AND AWARDS

- 2019 **Top 30 Selected for Russell Sage Foundation Summer Institute in Social-Science Genomics**
- 2019 **Early Career Forum Travel Award,** The Endocrine Society
- 2018 **AACR Minority Scholar in Cancer Research Award,** AACR-Minorities in Cancer Research Committee, American Association of Cancer Research (AACR)
- 2018 **Environmental Toxicology Scholarship,** Interdisciplinary Environmental Toxicology Program, University of Illinois at Urbana-Champaign (UIUC)
- 2018 **Selected for Purdue Intensive Summer Boot Camp for “Big Data Training for Translational Omics Research”,** Purdue University
- 2018 **Henry D. and Donna E. Strunk Award Merit Award,** Food Science and Human Nutrition Department, University of Illinois at Urbana-Champaign
- 2018 **AACR-Bristol Myers Squibb Oncology Scholar-in-Training Award,** American Association of Cancer Research
- 2018 **Future Leaders Advancing Research in Endocrinology (FLARE) Fellowship,** Endocrine Society
- 2017 **Advancing Science Conference Grant,** National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE)
- 2017 **Early Career Cancer Health Disparities Scholarships,** Cancer Disparities Research Network
- 2017 **AACR Scholar-in-Training Award,** American Association of Cancer Research
- 2017 **Carl Storm Underrepresented Minority (CSURM) Fellowship,** Gordon Research Conferences
- 2017 **Endocrine Society Summer Research Fellowship,** Endocrine Society
- 2016 **Kraft Health and Wellness Fellowship,** University of Illinois at Urbana-Champaign
- 2010 **National Science Foundation Historically Black Colleges and Universities Undergraduate Program (NSF HBCU-UP) Scholarship,** Mississippi Valley State University

PROFESSIONAL MEMBERSHIPS

- 2018 Bioinformatics Organization, Member
- 2018 American Medical Informatics Association (AMIA), Member
- 2018 Future Leaders Advancing Research in Endocrinology (FLARE), Alumni
- 2017 - Cancer Disparities Research Network (CDRN)
- 2017 - American Association of Cancer Research (AACR), Member
- 2017 - Delta Sigma Theta Sorority, Inc., Education Committee, Technology Committee
- 2017 - Endocrine Society, Committee of Diversity and Inclusion Intern
- 2016 - Champaign County Medical Reserves Corps

TECHNICAL SKILLS

Microsoft Office Suites (Word, Excel, and PowerPoint), Adobe (Reader and Illustrator), Bioinformatics Tools (Clustalw, Java Tree viewer, DAViD), and Intermediate programmer with experience in C++, Linux, R, SQL, Python & SAS