Brandi Patrice Smith, PhD

Lithonia, GA 30038 | 662-299-7035 | bpsmith1992@gmail.com

EDUCATION

2021	Ph.D.,	Informatics
		University of Illinois Urbana-Champaign, Urbana, IL
2016	M.S.,	Mathematics
		Mississippi State University, Starkville, MS
2014	B.S.,	Mathematics
		Mississippi Valley State University, Itta Bena, MS

PROFESSIONAL AND RESEARCH EXPERIENCE

2023-   **Business Analyst,** Wanderly, LLC (Contractor for the Arkansas Department of Health)

- Responsible for creating needs assessments of the Arkansas Department of Health's lead-based paint project for reporting to stakeholders.
- Oversee the implementation and automation of daily reporting of elevated blood lead level data to REDCap and communicating ad-hoc analysis across departments and to stakeholders

2021-2023   **Prevention Effectiveness Fellow** with Dr. Steven A. Sumner, MD and Daniel Bowen, MS, Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, Office of Director, Office of Strategy and Innovation (NCIPC/OD/OSI)

- Implemented machine learning models, to understand trends in social media data and emerging discussions around public health topics
- Review grant applications for center-related notice of funding opportunities (NOFOs) and assist with OSI's strategic goals and objectives for strategic planning
- Engage independently and collaboratively on scientific and methodological research, present progress, and findings orally to CDC senior staff and trainees, and prepare manuscripts for publication

2019-2021   **Graduate Research Assistant** with Dr. Rebecca Lee Smith, Disease Modeling Lab, University of Illinois Urbana-Champaign

- Identified factors of quality of life in midlife women from a longitudinal dataset with logistic regression modeling
- Optimized computational methods for analyzing phthalate mixtures to predict health outcomes
- Identified the role of phthalates in association with hot flash incidence and race using mediation analysis in R

2016-2019	**Graduate Research Assistant** with Dr. Zeynep Madak-Erdogan Women's Health and Metabolism Lab, University of Illinois Urbana-Champaign

- Implemented bioinformatics tools and statistical models to analyze genetic data
- Collaborated with undergraduate and senior staff at the University of Illinois at Urbana-Champaign and the National Center for Supercomputing Applications to optimize machine learning methods for drug discovery and derive epidemiological associations of race/ethnicity and health outcomes
- Publicly discussed topics around breast cancer outcomes of African American women urban areas, mentored several students at the undergraduate and graduate level and oversaw projects, and prepared manuscripts for publication in cancer and endocrine related journals

TEACHING EXPERIENCE

2022-2023	Genomics/Bioinformatics Journal Club Facilitator/Instructor, HGSC Pre-Graduate Education and Training, Baylor College of Medicine

- Reviewed and discussed primary journal articles in the fields of bioinformatics and genomics to post-bac students
- Implemented the use of the "Figure Facts" approach to understand techniques and main conclusions of experimental design figures resulting in data driven interpretations

2020-Present	Mathematics Tutor & Owner/Operator Dr. Bee's Math Tutoring, Lithonia, GA

- Virtual math tutoring for high school students at various levels including college algebra, trigonometry, geometry, physics, and statistics.
- Virtual whiteboard and screen sharing for real-time explanations
- Interactive problem-solving sessions using tools such as Zoom and Google Meet

2019	Teaching Assistant, Applied Statistical Methods I, University of Illinois at Urbana Champaign

- Reviewed and discussed statistical concepts with graduate students, including:
  - Descriptive statistics.
  - Probability.
  - Statistical inferences.
- Assisted in creating test questions for major exams.
- Responsible for grading exams.
- Technical skills utilized:
  - R.
  - SAS.

Brandi P. Smith, PhD

2019	Guest Instructor, College and Intermediate Algebra, Mississippi Valley State University, Itta Bena, MS

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

2018	Teaching Assistant, Introduction to Python for Data Science, University of Illinois at Urbana-Champaign

- Discussed fundamental python programming functions
- Graded final programming projects

2015-2016	Teaching Assistant, College Algebra, Mississippi State University

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

2014	Teaching Assistant, Trigonometry, Mississippi State University

- Reviewed trigonometric concepts, graded tests

FELLOWSHIPS

2021-2023   **Prevention Effectiveness Fellowship | Public Health Analytics Modeling Track**
Agency: National Center of Injury Prevention and Control, Centers for Disease Control and Prevention
Total award: $180,000

2018-2021   **Environmental Toxicology Scholarship**
Agency: Interdisciplinary Environmental Toxicology Program, University of Illinois at Urbana-Champaign
Total award: $36,968

2020-2021   **Diversifying Higher Education Faculty in Illinois Fellowship**
Agency: University of Illinois at Urbana-Champaign
Total award: $11,000

2016-2018   **Kraft Health and Wellness Fellowship**
Agency: University of Illinois at Urbana-Champaign
Total award: $55,000

AWARDS AND HONORS

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, American Association of Cancer Research (AACR)

Brandi P. Smith, PhD

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

SUPERVISORY & MENTORING EXPERIENCE

Direct supervisor of an undergraduate research assistant (2018-2019) who presented at the **Undergraduate research symposium presentation:** *Racial Differences of QOL in Midlife Women*

PROFESSIONAL SERVICE

2024	Manuscript Reviewer, Mathematical and Computational Applications Journal
2022	Health Economics Research Group (HERG) Award Reviewer, CDC
2021	Manuscript Reviewer, PLOS ONE Journal
2020	Abstract Reviewer, Endocrine Society, *2021 Annual Conference*
2018	Committee of Diversity and Inclusion Intern, Endocrine Society

ADDITIONAL RESEARCH AND PROFESSIONAL DEVELOPMENT TRAINING

2022	**Risk Communication in Public Health Emergencies** Centers for Disease Control and Prevention
2022	**Introduction to Grants and Cooperative Agreements for Federal Personnel** Centers for Disease Control and Prevention
2022	**Mathematical Modeling of Infectious Disease** Centers for Disease Control and Prevention

Brandi P. Smith, PhD

2022	**Decision Modeling for Public Health**
	Centers for Disease Control and Prevention

2021	**Environmental Justice Boot Camp: Theory and Methods to Study Environmental Health Disparities**
	Columbia Mailman School of Public Health, New York, NY

2021	**Natural Language Processing with Python,** Udemy Course Certificate

2021	**Python for Data Science and Machine Learning Bootcamp,** Udemy Course Certificate

2020	**Exploratory Data Analysis With Python and Pandas,** Coursera Course Certificate

COMPUTER LANGUAGES

R, Python, PySpark, SQL, SPSS, Visual Basic Applications (VBA), SAS

PROFESSIONAL MEMBERSHIPS

American Medical Informatics Association, member since 2018
Society of Epidemiologic Research, member since 2023

CONFERENCE PRESENTATIONS

Brandi Smith, Brooke Hoots, Lara DePadilla, Douglas Roehler, Kristin Holland, Daniel Bowen, Steven Sumner. Transformer-Based Topic Modeling to Examine Discussions of Delta-8 THC. Society of Epidemiologic Research, June 12-17, 2023; Portland, OR

Brandi Patrice Smith, Zeynep Madak-Erdogan. A machine learning-based approach to identify biomarkers of environmental toxicant exposures relevant to liver cancer disparities in rural Illinois [abstract]. In: Proceedings of the Eleventh AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved; 2018 Nov 2-5; New Orleans, LA. Philadelphia (PA): AACR; Cancer Epidemiol Biomarkers Prev 2020;29(6 Suppl):Abstract nr C003.

Brandi Patrice Smith, Zeynep Madak-Erdogan. Urban neighborhood and residential factors associated with breast cancer in African American women: A systematic review [abstract]. In: Proceedings of the Tenth AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved; 2017 Sep 25-28; Atlanta, GA. Philadelphia (PA): AACR; Cancer Epidemiol Biomarkers Prev 2018;27(7 Suppl):Abstract nr A09.

PUBLICATIONS

Peer-Reviewed Journal Articles

Smith BP, Hoots B, DePadilla L, Roehler DR, Holland KM, Bowen DA, Sumner SA. Using Transformer-Based Topic Modeling to Examine Discussions of Delta-8

Brandi P. Smith, PhD

Tetrahydrocannabinol: Content Analysis. J Med Internet Res. 2023 Dec 21;25:e49469. doi: 10.2196/49469. PMID: 38127427; PMCID: PMC10767625.

Zelaya CE*, **Smith BP***, Riser AP, et al. Urban and Rural Mpox Incidence Among Persons Aged 15–64 Years — United States, May 10–December 31, 2022. MMWR Morb Mortal Wkly Rep 2023;72:574–578. DOI: http://dx.doi.org/10.15585/mmwr.mm7221a2

Baek, A.E., Krawczynska, N., Das Gupta, A., Dvoretskiy, S.V., You, S., Park, J., Deng, Y.H., Sorrells, J.E., **Smith, B.P.,** Ma, L. and Nelson, A.T., The Cholesterol Metabolite 27HC Increases Secretion of Extracellular Vesicles Which Promote Breast Cancer Progression. Endocrinology 162, no. 7 (2021): bqab095.

Smith, B.P., Cardoso-Mendoza, E., Flaws, J.A. et al. Racial differences in lifestyle, demographic, and health factors associated with quality of life (QoL) in midlife women. womens midlife health 7, 2 (2021). https://doi.org/10.1186/s40695-020-00060-1

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,

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.

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.

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.

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.

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

Brandi P. Smith, PhD

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.

Manuscripts in Progress

Smith, B.P., Lipka, Alexander, Flaws, J.A., Smith, R.L. (*in prep*). Comparing three statistical approaches of phthalate mixture analysis in the midlife women's health study.

Smith, B.P., Flaws, J.A., Smith, R.L. (*in prep*). Understanding the mediating effects of phthalate exposure on racial disparities and hot flashes.

Brandi P. Smith, PhD