Curriculum Vitae

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Education

Doctor of Philosophy in Health and Medical Informatics

University of Illinois at Urbana-Champaign (UIUC)
2021

Masters of Science in Mathematics

Mississippi State University
2016

Bachelors of Science in Mathematics

Mississippi Valley State University
2014

Research Experience

Research Assistant in Jodi Schneider Lab (UIUC), 2020

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

Data Analyst at Dow Agrosciences - Research Park (UIUC), 2017

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

Research Assistant Zeynep Madak-Erdogan Lab (UIUC), 2016-19

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

Teaching Experience

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

University of Illinois at Urbana Champaign, FA 2019

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

Instructor – College and Intermediate Algebra

Mississippi Valley State University, SUM 2019

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

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

University of Illinois at Urbana-Champaign, FA 2018

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

Publications

First Author:

1. **Identification of early liver toxicity gene biomarkers using comparative supervised machine learning. 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**

2. **Racial Differences in Lifestyle, Demographic, and Health Factors Associated with Quality of Life (QoL) in Midlife Women**

   Smith, Brandi Patrice, Esmeralda Cardoso-Mendoza, Jodi A. Flaws, Zeynep Madak-Erdogan, and Rebecca Lee Smith. "Racial Differences in Lifestyle, Demographic, and Health Factors Associated with Quality of Life (QoL) in Midlife Women." Preprint. In Review, July 23, 2020.

3. **A machine learning based approach to identify biomarkers of environmental toxicant exposures relevant to liver cancer disparities in rural Illinois**

   Brandi 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 American Association for Cancer Research Annual Meeting 2019; 2019 Mar 29-Apr 3; Atlanta, GA. Philadelphia (PA): AACR; Cancer Res 2019;79(13 Suppl):Abstract nr 5124.

4. **Urban Neighborhood and Residential Factors Associated with Breast Cancer in African American Women: A Systematic Review**

   Smith, Brandi Patrice, and Zeynep Madak-Erdogan. "Urban Neighborhood and Residential Factors Associated with Breast Cancer in African American Women: A Systematic Review." Hormones and Cancer 9, no. 2 (April 2018): 71–81.

Co-Author:

1.

Suppression of FOXM1 Activities and Breast Cancer Growth in Vitro and in Vivo by a New Class of Compounds

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 (December 2019): 45.

2.

Combined Targeting of Estrogen Receptor Alpha and XPO1 Prevent Akt Activation, Remodel Metabolic Pathways and Induce Autophagy to Overcome Tamoxifen Resistance

Kulkoyluoglu-Cotul, Eylem, **Brandi Patrice Smith**, Kinga Wrobel, Yiru Chen Zhao, Karen Lee Ann Chen, Kadriye Hieronymi, Ozan Berk Imir, et al. "Combined Targeting of Estrogen Receptor Alpha and XPO1 Prevent Akt Activation, Remodel Metabolic Pathways and Induce Autophagy to Overcome Tamoxifen Resistance." Cancers 11, no. 4 (April 4, 2019): 479.

3.

Free Fatty Acids Rewire Cancer Metabolism in Obesity-Associated Breast Cancer via Estrogen Receptor and MTOR Signaling

Madak-Erdogan, Zeynep, Shoham Band, Yiru Chen Zhao, **Brandi Patrice Smith**, Eylem Kulkoyluoglu-Cotul, Qianying Zuo, Ashlie Santaliz Casiano, et al. "Free Fatty Acids Rewire Cancer Metabolism in Obesity-Associated Breast Cancer via Estrogen Receptor and MTOR Signaling." Cancer Research, March 12, 2019, canres.2849.2018.

Honors

Top 30 Selected for Russell Sage Foundation Summer Institute in Social-Science Genomics - 2019

Early Career Forum Travel Award, The Endocrine Society - 2019

AACR Minority Scholar in Cancer Research Award, American Association of Cancer Research (AACR) - 2018

Interdisciplinary Environmental Toxicology Scholarship, 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

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 - 2018

Early Career Cancer Health Disparities Scholarships, Cancer Disparities Research Network - 2017

Carl Storm Underrepresented Minority (CSURM) Fellowship, Gordon Research Conferences - 2017

Endocrine Society Summer Research Fellowship, Endocrine Society - 2017

Memberships

American Medical Informatics Association (AMIA), Member - 2018

Future Leaders Advancing Research in Endocrinology (FLARE), Alumni - 2018

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 - 2017

Champaign County Medical Reserves Corps - 2016

Skills

- Bioinformatics
  - RNA-sequence analysis
  - Microarray analysis
- R Statistical Language
- Python
- SQL