

## Savannah Hays

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### EDUCATION

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**Johns Hopkins University**, Baltimore, MD June 2022 - *Present*

*Doctor of Philosophy in Electrical and Computer Engineering*

Advisor: Dr. Jerry Prince

**West Virginia University**, Morgantown, WV May 2022

*Bachelor of Science in Biomedical Engineering, WVU Honors College*

Summa Cum Laude, GPA 3.91

### RESEARCH EXPERIENCE

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**Johns Hopkins University**, Baltimore, MD June 2022 – *Present*

*Percy Pierre Doctoral Fellow, NSF Fellow*

Mentor: Dr. Jerry Prince; Dept. of Electrical and Computer Engineering

- Current research project includes MR image harmonization using machine learning
- Investigating solutions to the domain shift problem in MR image analysis

**West Virginia University**, Morgantown, WV

*Senior Design Project Chief Engineer*

August 2021 – May 2022

Mentor: Dr. Alexander Stolin; Department of Chemical and Biomedical Engineering

Client: Dr. Raymond Raylman; Department of Radiology

- Investigated the usage of PET/CT imaging for breast cancer detection
- Managed weekly lab sessions, meetings, and reports among group, mentor, and client

**West Virginia University**, Morgantown, WV

*Mountaineer Undergraduate Research Review STEM Editor*

December 2019 – May 2022

- Attend biweekly meetings with the Editorial Review Board
- Revised submitted papers in the STEM field and provided feedback to the author

**Johns Hopkins University**, Baltimore, MD

*Summer Undergraduate Research Student*

June 2021 – August 2021

Mentor: Dr. Jerry Prince; Dept. of Electrical and Computer Engineering

- Selected for the NSF Research Experience for Undergraduates in Computational Sensing and Medical Robotics (NSF REU program: #1852155)
- Investigated the performance of the state-of-the-art brain segmentation algorithm, SLANT
- Synthesized 2,150 T1-weighted MR images using a deep learning harmonization algorithm

**West Virginia University**, Morgantown, WV

*Undergraduate Research Student*

January 2019 – May 2021

Mentor: Dr. Shuo Wang; Dept. of Chemical and Biomedical Engineering and Dept. of Neuroscience

- Conducted functional magnetic resonance imaging (fMRI) scans on participants of their brain lasting 1.0-1.5 hours
- Worked with participants with autism spectrum disorder (ASD)
- Completed and scores behavioral tests on participants including the autism quotient (AQ) score and social responsiveness scale (SRS) score

- Analyzed participants brain activation patterns for facial processing using Analysis of Functional NeuroImages (AFNI) software

## TEACHING EXPERIENCE

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### **West Virginia University, Morgantown, WV**

#### *Statler College Biomedical Engineering Teaching Assistant*

August 2021 – May 2022

- Attended (3) one-hour lectures for Thermodynamics and Kinetics weekly
- Assisted students during problem solving sessions and through email
- Graded biweekly homework assignments of ~40 students

#### *Honors College TestWELL Learning Center STEM Tutor*

August 2020 – May 2022

- Received certification from the National Tutoring Association
- Assisted students in-person and via Zoom
- Led exam review sessions as requested by students

## PUBLICATIONS

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**Hays S, Zuo L, Wang Y, Luciano MG, Prince JL.** *Optimal operating MR contrast for brain ventricle parcellation.* arXiv preprint arXiv:2304.02056. 2023.

Raylman RR, Stolin A, **Hays S**, et al. *A dedicated breast-PET/CT scanner: numerical observer study of lesion detection.* Med Phys. 2022.

**Hays S, Zuo L, Carass A, and Prince J.** *Evaluating the impact of MR image contrast on whole brain segmentation.* In International Society for Optics and Photonics: Image Processing, 2022.

## PROFESSIONAL ACTIVITIES

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### **Women Mentoring Whiting, Johns Hopkins University**

#### *Graduate Student Liaison*

May 2023 - Present

#### *Mentor*

September 2022 – May 2023

### **Society of Women Engineers (SWE)**

#### *Professional Member, Baltimore-Washington Section*

May 2022 - Present

#### *Collegiate Member*

August 2018 – May 2022

#### *Collegiate Vice President*

May 2021 – May 2022

#### *Collegiate Secretary*

April 2020 – May 2021

#### *Collegiate Historian*

April 2019 – April 2020

## HONORS AND AWARDS

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- National Science Foundation Graduation Research Fellow 2023
- Johns Hopkins University Percy Pierre Doctoral Fellowship, August 2022 – July 2024
- 2022 WVU Order of Augusta
- 2022 WVU Outstanding Senior
- 2022 WVU Honors Laureate Graduate
- 2021 WVU Mountaineer of Distinction Finalist
- 2021 WVU Statler College Diversity, Equity, and Inclusion Student Award
- 2021-22 Newman Civic Fellow
- Tippens Scholarship (Wood County WV, full scholarship), August 2018 – May 2022

- West Virginia Promise Scholarship, August 2018 – May 2022
- WVU Level of Distinction Scholarship, August 2018 – May 2022
- WVU Engineering Excellence Scholarship, August 2018 – May 2022
- TGKVF Marmet Scholarship, August 2018 – May 2020
- Statler Research Scholarship, January 2019 – May 2020
- WVU President's List Fall 2018, Spring 2020, Spring 2021, Fall 2021, Spring 2022
- WVU Dean's List Fall 2019, Fall 2020