

Rebecca D. Pollard

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EDUCATION

Harvard College — B.S. Electrical Engineering, GPA 3.89

Class of 2028

RESEARCH & PROFESSIONAL EXPERIENCE

Student Researcher — Harvard Microrobotics Lab, Cambridge MA

Fall 2025 – Present

[PRISE Fellow, Summer 2026](#)

- Designing 1–2 V driving electronics for the low-voltage voice-coil actuators of insect-scale robots.
- Built a microcontroller-free comparator relaxation oscillator, independently tunable in frequency and duty cycle over 0.7–136 Hz, validated against an analytical model in simulation and hardware. With an H-bridge stage it delivers biphasic 2 V drive on a 7.6×3 mm, 18 mg flex board that drove wing flapping on a gliding microrobot.
- Built a programmable MSPM0 driver: 20 kHz PWM carrier with a software spike-and-hold envelope, six H-bridge channels at 60° offsets coordinating multi-leg gaits including HAMR.
- Developing a biodegradable RF transmitter for transient robots using electrothermal bimetallic actuation and degradable substrates.

Course Assistant — CS50, Harvard, Cambridge MA

Sept 2026 – Present

- Run office hours for Harvard's introductory computer science course, working with students one-to-one and in small groups on their problem sets and helping them debug their own code.

Consultant — CVS Health Innovation Lab, Woonsocket RI

Summer 2025

- Designed and prototyped virtual reality systems; researched and evaluated advanced robotics use-cases across the enterprise.

Cancer Research Intern — NCI Cancer Data Science Lab, NIH, Bethesda MD

2023 – 2024

- Built high-performance pipelines over millions of genomic variants, and applied statistical modeling to detect ancestry-related bias in large datasets.
- Linked genomic and transcriptomic features to treatment outcomes, integrating heterogeneous datasets in Python, R and SQL.

Bioinformatics Intern — Wilkerson Lab, Uniformed Services University, Bethesda MD

2021 – 2024

- Developed algorithms to analyze cancer mutations across diverse populations, reducing systemic bias, using C++, Bash and bioinformatics toolchains.

PUBLICATIONS

Kim, Y., Nagy, M., **Pollard, R. D.**, & Rajagopal, P. S. (2026). "Transcriptome-based synthetic lethality predictions to improve targeted therapy/immunotherapy treatment prioritization in non-metastatic breast cancer: BC-SELECT." *Cancer Research Communications*. doi:10.1158/2767-9764.CRC-26-0401

Pollard, R. D., Wilkerson, M. D., & Rajagopal, P. S. (2024). "Identification of germline population variants misclassified as cancer-associated somatic variants." *Frontiers in Medicine*, 11, 1361317. doi:10.3389/fmed.2024.1361317

Pollard, R. D., Pollard, S. M., & Streit, S. (2021). "Predicting Propensity to Vote with Machine Learning." *arXiv:2102.01535*

HONORS & FELLOWSHIPS

- **Roberts Family Fellow**, Harvard Undergraduate Technology Innovation Fellows Program, 2026.
- **PRISE Fellow**, Harvard Program for Research in Science and Engineering, Summer 2026.
- **Harvard Grid West Tech Trek**, selected cohort, San Francisco, January 2026.
- Selected to present at the **2026 Harvard Power & AI Initiative Research Summit** (invitation only), May 2026.

LEADERSHIP & SERVICE

- **Co-Founder & Co-Director**, SPARKS Book Club, Inc. (sparkslearning.org), 2020–Present. Registered 501(c)(3) running a monthly book club for at-risk girls at a Title I school in Maryland.
- **Member**, Harvard Innovation Labs, 2024–Present.

SKILLS

Hardware & EE: Circuit design and analysis, LTspice, flex and rigid PCB design (KiCad, EasyEDA), oscilloscopes and lab instrumentation, H-bridge and PWM motor drive, microcontroller firmware (MSPM0, Arduino), PCB fabrication and assembly, Simulink and Simscape, ROS 2.

Programming, ML & Data: Python, C, C++, R, SQL, Bash, Pandas, NumPy, TensorFlow, Keras, Scikit-learn, XGBoost, data pipelines (Hail, Spark, GCP), high-dimensional statistics, Flask. American Sign Language, conversational.