

AMY GILL

My career goals are to advance personalized cancer therapy with data-driven systems biology and improve quantitative biology education resources. I currently seek a doctoral program to enhance my bioinformatics skills, practice teaching and perform patient-centered research.



EDUCATION

present

2020

Ph.D., Biomedical Engineering (in progress)

Johns Hopkins University

📍 Baltimore, MD

2016

2015

M.A.T., Secondary Education - Biology

National-Louis University

📍 Chicago, IL

2015

2011

M.S., Cancer Biology

University of Chicago

📍 Chicago, IL

2011

2007

B.A., Biological Sciences, Chemistry

University of Chicago

📍 Chicago, IL



RESEARCH EXPERIENCE

present

2020

Graduate Research Assistant

Johns Hopkins University

📍 Baltimore, MD

- Developing mechanistic computational models of cell signaling networks in heterogeneous tissues in the Mac Gabhann laboratory.
- Reviewing existing mechanistic models of tumor heterogeneity and cancer-microenvironment crosstalk.

2019

2017

Pathology Research Technician

Dana-Farber Cancer Institute

📍 Boston, MA

- Developed and analyzed custom mouse models of chronic lymphocytic leukemia (CLL) in the Wu laboratory.
- Produced high-titer CRISPR-Cas9 lentivirus. Purified and transduced hematopoietic stem cells for transplant into immunodeficient mice.
- Developed and executed flow cytometry protocols to classify B cell lineages, track CLL progression, enrich for HSCs, and distinguish donor and recipient cells via the CD45 system.

2017

2016

Research Technician

University of Chicago

📍 Chicago, IL

- Studied zebrafish development to investigate the homology between fish fins and tetrapod digits in the Shubin lab.
- Performed summer and weekend (part-time) zebrafish husbandry and genotyping of CRISPR-generated Hoxa13a/Hoxa13b double mutant fish.

CONTACT

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in linkedin.com/in/amy-gill-29693244/

SKILLS

💻 **Programming:** R, Bioconductor, Matlab, Python, GitHub, HTML

🧪 **Laboratory:** Cell culture, western blot, genotyping, qRT-PCR, primer design, flow cytometry, transfection, lentivirus production, mouse husbandry, zebrafish husbandry

🔍 **Other:** Science teaching, science writing, data analysis, data visualization, statistics, machine learning, experimental design

CREDENTIALS

🏠 [HarvardX Data Science Professional Certificate](#)

📜 Professional Educator License (IL): Secondary Biology, Secondary Chemistry

Made with the R package [pagedown](#).

The source code is available at github.com/gillsignals/cv.

See the full version of this CV with links at amygill.net/cv.

Last updated on 2021-08-31.

- 2014
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2011

Graduate Research Assistant

University of Chicago

Chicago, IL

 - Investigated the role of Blimp1 (PRDM1) in radiogenic stress response to analyze its role in protection from radiogenic breast cancer in the Onel/Cunningham lab.
 - Demonstrated that Blimp1 primary transcript, mRNA and protein expression increase after IR exposure; designed Blimp1 shRNAs and inducible overexpression vectors and transduced cell lines.
 - Performed proteomic analysis of cytarabine chemotherapy response in lymphoblastoid cells using microwestern arrays (MWAs) in the Jones lab.
- 2011
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2007

Undergraduate Researcher

University of Chicago

Chicago, IL

 - Studied the cellular uptake of VO(acac)₂ to analyze its application as a contrast agent in PET scans in the Makinen lab. Demonstrated that VO(acac)₂ enters the cell via the reduced folate carrier (RFC) protein using Western blots and RFC inhibitors.
 - Analyzed epigenetic differences in high-risk versus low-risk neuroblastoma cell lines and tumors with bisulfite sequencing in the Cohn lab.



TEACHING EXPERIENCE

- 2020
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2019

Lead Content Developer, Data Science Professional Program

HarvardX

Cambridge, MA

 - Maintained, revised and expanded online content for the [Data Science Professional Certificate](#) and [Genomics Data Analysis](#) MOOC series from HarvardX on edX, including dozens of new coding exercises based on case studies.
 - Added a variety of [new data sets](#) to the [dslabs package](#) for teaching data science in R, comprehensively edited the [Introduction to Data Science textbook](#), and am co-authoring the textbook solution guide.
- 2017
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2016

Science Lab Coordinator

Adlai E. Stevenson High School

Lincolnshire, IL

 - Prepared laboratory chemicals and materials, tested and improved protocols, and maintained laboratory equipment for 49 high school science teachers with 4000+ students.
 - Updated labs to incorporate modern scientific techniques, probeware, and inquiry-based principles into the high school curriculum.
 - Tutored homebound students for biology, chemistry, and anatomy/physiology and offered private science tutoring.
- 2017
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2016

Science REACH Co-sponsor and WYSE/TEAMS Sponsor

Adlai E. Stevenson High School

Lincolnshire, IL

 - Helped ~80 students design, perform and present research projects for Illinois Junior Academy of Sciences and national science fairs.
 - Sponsored ~70 students in training for STEM competitions, guiding students to top 5 WYSE state (WYSE) and top 10 TEAMS national performances.
- 2016

Biology Student Teacher

Conant High School

Hoffman Estates, IL

 - Instructed ~140 grade 9 students in 3 sections of honors biology and 2 sections of general biology.
 - Promoted accessible student-centered learning with labs, activities and engaging technology for multiple learning styles.

2014
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2009

Teaching Assistant

University of Chicago

📍 Chicago, IL

- Assisted with numerous undergraduate and 1st year PhD graduate courses.
- Prepared and taught weekly review sessions and exam preparation sessions, helped write exams, graded assignments and exams, fielded student questions, held office hours, and tutored students 1:1.
- Courses: Endocrinology/Cell Signaling (4x), Biological Systems, Protein Fundamentals, and Cancer Biology Grant Writing



PEER-REVIEWED PUBLICATIONS

2018

[Splicing modulation sensitizes chronic lymphocytic leukemia cells to venetoclax by remodeling mitochondrial apoptotic dependencies](#)

Ten Hacken E et al., JCI Insight 3(19). PMID 30282833.

2017

[Identification of Novel Protein Expression Changes Following Cisplatin Treatment and Application to Combination Therapy](#)

Stark AL et al. Journal of Proteome Research, 16(11): 4227-4236. PMID 28902521.

2012

[Truncated DNMT3B isoform DNMT3B7 suppresses growth, induces differentiation, and alters DNA methylation in human neuroblastoma.](#)

Ostler KR et al. Cancer Research 72(18): 4714-23.



POSTERS AND PRESENTATIONS

2014

[The role of PRDM1 in protection against radiogenic breast cancer.](#)

Oral presentation, Dept. Pediatric Hem/Onc.

📍 University of Chicago

2014

[The role of Blimp1 in protection against ionizing radiation in breast cells.](#)

Poster, Biomedical Sciences Retreat

📍 University of Chicago

2013

[Systems analysis of cytarabine response and resistance in hematopoietic cells.](#)

Poster, Biomedical Sciences Retreat

📍 University of Chicago