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.

CONTACT

✉ gill.signals@gmail.com

⌂ github.com/gillsignals

☎ (847) 477-3100

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

SKILLS

⌨ **Programming**: R, Bioconductor, 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

🎓 EDUCATION

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

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 va 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.

2014 | 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.

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 2019-11-12.

Undergraduate Researcher

2011 | 2007

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

Lead Content Developer, Data Science Professional Program

2020 | 2019

HarvardX 📍 Cambridge, MA

- Maintain, revise and expand 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.

Science Lab Coordinator

2017 | 2016

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.

Science REACH Co-sponsor and WYSE/TEAMS Sponsor

2017 | 2016

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.

Biology Student Teacher

2016

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.

ONLINE COURSES

edX: HarvardX Data Science Professional Certificate (9/9); MITx Quantitative Biology Workshop

Coursera: Genomic Data Science, JHU (7/8 courses); Mathematics for Machine Learning: Linear Algebra, Imperial College London

AWARDS & HONORS

Adlai E. Stevenson High School

Ambassador Award (2017)

Special Staff Recognition (2016)

University of Chicago

Bernice Goldblatt Scholar, Cancer Research Foundation (2012-2013)

Honored Graduate Student, UChicago Cancer Center Women's Board (2011-2012)

General Honors (2011)

Dean's List (2008-2011)

National Merit Scholar (2007)

2014 | 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

SELECTED SCIENCE WRITINGS

More datasets for teaching data science: The expanded dslabs package. Simply Statistics guest blog post, 2019.

Prediction of breast cancer from nuclear features of fine needle aspirate biopsies. HarvardX Data Science capstone project, 2019.

Cellular and molecular characterization of Blimp1 activation in response to ionizing radiation and its relevance to radiogenic breast cancer. Thesis proposal, University of Chicago Committee on Cancer Biology, 2013.

HBP1 promotes neuroblastoma differentiation by inhibiting MYCN transcription factor activity. Qualifying exam, University of Chicago Committee on Cancer Biology, 2013.