Jessica Scarborough
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EDUCATION

2017-Present Case Western Reserve University School of Medicine
Medical Scientist Training Program
- Doctor of Medicine (expected graduation 2024)
- PhD field of study: Systems Biology and Bioinformatics

2015-2017 University of San Francisco
Master of Science in Health Informatics
- GPA: 4.00
- Thesis: Scarborough, Jessica A., "The Acquisition and Analysis of Electroencephalogram Data for the Classification of Benign Partial Epilepsy of Childhood with Centrotemporal Spikes" (2017). *Master's Theses*. 221.

2012-2016 University of San Francisco
Bachelor of Science in Biology with Honors
- GPA: 3.91
- Minor in Chemistry
- Concentration in Molecular Biology
- Thesis: Scarborough, Jessica A., "Phylogenetic Analysis of Human Cytomegalovirus pUS27 and pUS28: Ascertaining an Independent or Linked Evolutionary History" (2016). *Undergraduate Honors Theses*. 8.

HONORS AND AWARDS

2021 F30 Ruth L. Kirschstein Individual Predoctoral NRSA for MD/PhD and other Dual Degree Fellowships
2020 Best Poster Award at Biomedical Graduate Student Symposium, CWRU
2020 Translational Fellowship, CWRU and Cleveland Clinic Foundation
2019 Rising Star Award at the Innovators in AYA Cancer Symposium, CWRU
2012-2016 Dean's List, University of San Francisco
2016 Dean's Medal of Excellence, University of San Francisco
2016 Graduated *summa cum laude* in Biology, University of San Francisco
2015 Carol Chihara Award, University of San Francisco

WORK EXPERIENCE

2014-2017 Content Producer and Strategist at Keas, San Francisco, CA
- Managed company internship division by reviewing resumes, interviewing candidates, and supporting interns
- Evaluated all global content for scientific accuracy, grammar, and tone consistency
- Provided insight for the direction of global content based on medical experience and routine appraisal of peer-reviewed publications
- Keas was acquired by Welltok in 2016.

RESEARCH EXPERIENCE

2015-2016	University of San Francisco, Biology Department

PI: Juliet Spencer, PhD
- Extracted individual protein codes, aligned sequences, and analyzed the phylogenetic history of two proteins from Human Cytomegalovirus
- Transformed honors thesis into a peer-reviewed article cited in Bibliography

2015-2017   University of San Francisco, Health Informatics Department
PI: William Bosl, PhD
- Performed exploratory research regarding disease progression in traumatic brain injuries, autism, and post-malarial neurological syndrome
- Collaborated with Boston Children's Hospital to examine the state of data analysis in the context of research accessibility to electronic health records (EHRs)

2017 – Present   Case Western Reserve University/Cleveland Clinic Foundation, Translational Hematology and Oncology Research Department
PI: Jacob Scott, MD, PhD
- Work as a PhD student developing a novel method for the extraction of gene expression signatures predictive of chemotherapeutic response.
- Utilize gene expression signatures produced with method above for the prediction of chemo-sensitivity in non-small cell lung cancer cell lines used in time-series evolution experiments performed in lab

BIBLIOGRAPHY

Peer Reviewed Articles
Scarborough J.A., Paul J.R., Spencer J.V., "Evolution of the ability to modulate host chemokine networks via gene duplication in human cytomegalovirus (HCMV)." *Infection, Genetics, and Evolution.* July 2017. PMID: 28315475

Scarborough J.A., McClure E., Anderson P., Dhawan A., Durmaz A., Lessnick, S.L., Hitomi, M., Scott, J.G., Identifying States of Collateral Sensitivity during the Evolution of Therapeutic Resistance in Ewing's Sarcoma. *iScience.* 2020. PMC7334607.

Scott, J. G., Sedor, G., **Scarborough, J. A.,** Kattan, M. W., Peacock, J., Grass, G. D., Mellon, E.A., Thapa, R., Schell, M., Waller, A., Poppen, S., Andl, G., Teer, J.K., Eschrich, S.A., Dilling, T.J., Dalton W.S., Harrison, L.B., Fox, T., Torres-Roca, J. F. (2020). Personalizing Radiotherapy Prescription Dose Using Genomic Markers of Radiosensitivity and Normal Tissue Toxicity in NSCLC. *Journal of Thoracic Oncology.* 2020. PMID: 33301984

Oral Presentations
Scarborough J.A., McClure E., Hitomi M., Anderson P., Scott J., "Exploiting Convergent Evolution to Extract States of Collateral Sensitivity in Ewing Sarcoma" (2019). *Oral Presentation.* Innovators in AYA Cancer; Case Comprehensive Cancer Center; Cleveland, OH

<u>Poster Presentations</u>

Scarborough J.A., Loddenkemper T., Bosl W., "Nonlinear Analysis for Detection and Classification of Benign Childhood Epilepsy with Centrotemporal Spikes (BECTS)" (2017). *Poster Presentation*. American Clinical Neurophysiology Society Annual Meeting and Conference; Phoenix, AZ.

Scarborough J.A., Spencer J.V., Paul J., "Virus-Host Co-evolution: Determining the Origin of Human Cytomegalovirus US27 and US28" (2016). *Poster Presentation*. Creative Activity and Research Day; University of San Francisco, San Francisco, CA.

Scarborough, J.A., Dhawan, A., Scott, J., "Generating Gene Expression Signatures Predictive of Therapeutic Response in Lung Adenocarcinoma" (2018). *Poster presentation*. Cleveland Clinic Foundation Lerner Research Day; Cleveland, OH.

Scarborough, J.A., Dhawan, A., Scott, J., "Generating Gene Expression Signatures Predictive of Therapeutic Response in Lung Adenocarcinoma" (2018). *Poster presentation*. Case Western Reserve University Lepow Research Day; Cleveland, OH.

Scarborough, **J.A.**, Dhawan, A., Scott, J., "A Novel Method for Extracting Gene Signatures Predictive of Chemotherapeutic Response" (2019). Poster presentation. Case Western Reserve University Lepow Research Day; Cleveland, OH

Scarborough, J.A., McClure, E., Sedor, G., Hitomi, M., Scott, JG. Identifying States of Collateral Sensitivity During the Evolution of Therapy Resistance in Ewing's Sarcoma. (2019) Poster Presentation. Innovators in AYA Cancer Symposium. Cleveland, OH.

Scarborough, J.A., Dhawan A., Scott, J.G. Derving Robust Gene Signatures Predictive of Chemotherapeutic Response. (2019) Poster Presentation. Case Western Reserve University Biomedical Graduate Student Symposium. Cleveland, OH.

Scarborough, J.A, Dhawan, A., Scott, J., Deriving Robust Gene Signatures Predictive of Chemotherapeutic Response (2020). Poster presentation. American Association for Cancer Research 2020 Virtual Annual Meeting II. Virtual Meeting due to COVID-19.

Scarborough, J.A., Tom, M., Scott, J.G. Revisiting a Null Hypothesis: Exploring the parameters of oligometastasis treatment (2020) Poster Presentation. Case Western Reserve University Biomedical Graduate Student Symposium. Cleveland, OH. * Best Poster Award

Scarborough, J.A., Tom, M., Kattan, M., Scott, J.G. Revisiting a Null Hypothesis: Exploring the parameters of oligometastasis treatment (2020) Poster Presentation. Case Western Reserve University Lepow Day. Cleveland, OH.

INSTITUTIONAL SERVICE

2014-2016	Peer Advisor at University of San Francisco, Biology Department

- Held office hours for students to ask questions regarding schedule planning and academic success
- Planned student-professor events to encourage discussion and collegiality within department

RELEVANT SKILLS

Software: R (advanced, base R and tidyverse), Python (intermediate),
SQL (beginner), LaTeX, Jupyter Notebook, RStudio, git and GitHub, Visual Studio Code, Linux
command scripting,

Research Expertise: traditional statistics, data visualization, data cleaning, data normalization,
machine learning regression and classification, differential gene expression analysis (microarray and
RNA-seq), analysis pipelines