TOMAS BENCOMO

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EDUCATION

MD/PhD   University of Washington   2022 - present
            Medical Scientist Training Program
            Mentors: Paul Nghiem and Manu Setty

BS   Stanford University, Computer Science   2017 - 2021
            Concentration in Biocomputation
            GPA: 3.99

HONORS AND AWARDS

ARCS Foundation Award   2024
Achievement Reward For College Scientist scholarship to help fund PhD training

Stanford Bio-X Summer Research Grant   2020
Funding for undergraduate research in the Dermatology department

Tau Beta Pi Member   2020
Engineering honors society at Stanford

Stanford VPUE Conference Grant   2020
Award to present research at Society For Investigative Dermatology Annual Meeting

Mayo Clinic Summer Undergraduate Research Fellowship   2018 & 2019
Fellow studying glioblastoma in the Precision NeuroTheraputics Program

TGen Helios Scholar   2016
High school intern in the Helios Program at TGen

Helios Symposium Poster Award Winner   2016
Awarded for a top 10 poster at the intern symposium

RESEARCH EXPERIENCE

Graduate Student, University of Washington & Fred Hutch Cancer Center   2023 – present
Advisors: Paul Nghiem MD, PhD & Manu Setty PhD
- Studied mechanisms of immunotherapy resistance using spatial multi-omics technologies
- Developed novel computational approaches for spatial transcriptomics data analysis

Research Associate, Lee Lab, Stanford Medicine   2021 – 2022
Advisor: Carolyn Lee MD, PhD
- Investigated mechanisms of perineural invasion using single cell sequencing
- Performed a meta-analysis of publicly available cSCC RNA-Seq datasets
- Studied metabolic reprogramming caused by non-coding mutations in OXA1L

Undergraduate Researcher, Lee Lab, Stanford Medicine   2017 – 2021
Advisor: Carolyn Lee MD, PhD
- Characterized novel genes implicated in skin cancers using multi-omics data
- Examined survival data to find biomarkers for squamous cell carcinoma (SCC)
- Analyzed proteomics data to identify novel interactors for melanoma oncogene RAC1

Summer Undergraduate Research Fellow, Swanson Lab, Mayo Clinic   2018-2019
Advisor: Kristin Swanson PhD
- Analyzed MRI data to study blood brain barrier disruption in glioblastoma (GBM)
- Trained machine learning models to predict drug distribution in the brain from MRI
- Built prognostic models using radiomics data to predict patient survival

Helios Scholar, Translational Genomics Research Institute   2016
Advisor: Seungchan Kim PhD and Gil Speyer PhD
- Redesigned the lab's EDDY algorithm to use NVIDIA's CUDA API
- Helped secure $200,000 Compute 4 the Cure grant from NVIDIA
- Achieved 500x speedup; the algorithm can now analyze previously impossible datasets

PUBLICATIONS ([GOOGLE SCHOLAR](#))

Articles

Gene expression landscape of cutaneous squamous cell carcinoma progression   2024
Tomas Bencomo, Carolyn S Lee
British Journal of Dermatology (accepted)

Unravelling the landscape of skin cancer through single-cell transcriptomics   2023
Ankit Srivastava, **Tomas Bencomo**, Ishani Das, Carolyn S. Lee
Translational Oncology

MAB21L4 deficiency drives squamous cell carcinoma via activation of RET   2022
Ankit Srivastava, Cristina Tommasi, Dane Sessions, Angela Mah, **Tomas Bencomo**, Jasmine M Garcia,
Tiffany Jiang, Michael Lee, Joseph Y Shen, Lek Wei Seow, Audrey Nguyen, Kimal Rajapakshe,
Cristian Coarfa, Kenneth Y Tsai, Vanessa Lopez-Pajares, Carolyn S Lee
Cancer Research

Mutant collagen COL11A1 enhances cancerous invasion   2021
Carolyn Lee, Zurab Siprashvili, Angela Mah, **Tomas Bencomo**, Lara Elcavage, Yonglu Che, Rajani
Shenoy, Sumaira Aasi, Paul Khavari
Oncogene

Preprints

ecDNA in cutaneous squamous cell carcinoma is associated with increased nodal disease   2024
Tomas Bencomo, Amarinder Thind, Bruce Ashford, Marie Ranson, Carolyn S. Lee
Biorxiv

Gene expression landscape of cutaneous squamous cell carcinoma progression   2023
Tomas Bencomo, Carolyn S Lee
Biorxiv

Conference Abstracts

Gene expression landscape of cutaneous squamous cell carcinoma progression
T. Bencomo, C. S. Lee
Society For Investigative Dermatology 2024 Annual Meeting

ecDNA in cutaneous squamous cell carcinoma is associated with increased nodal disease
T. Bencomo, A. Thind, I. Donohue, B. Ashford, M. Ranson, C. S. Lee
Society For Investigative Dermatology 2024 Annual Meeting

Mast cells orchestrate perineural invasion in aggressive epithelial cancers
A. Srivastava , **T. Bencomo** , A. Mah , J. Garcia , I. Donohue , A. Tan , L. Seow , A. Nguyen , T. Jiang , P. Dwivedi , C. M. Rose , R. Brown , S. Aasi , C. S. Lee
Society For Investigative Dermatology 2024 Annual Meeting

Metabolic reprogramming by cancer-associated mutant OXA1L promotes tumor progression and dedifferentiation
A. Srivastava, I. Donohue, A. Tan, A. Nguyen, **T. Bencomo**, J. Ye, B. Ashford, M. Ranson, D. Kashatus, C. S. Lee
Society For Investigative Dermatology 2024 Annual Meeting

Chromosomal structural variants but not extrachromosomal DNAs are common in Merkel cell carcinoma
J. D. Bloomstein , J. Luebeck , J. Rose , **T. Bencomo**, D. S. Hippe , S. Jani, V. Bafna , H. Chang , P. Nghiem
Society For Investigative Dermatology 2024 Annual Meeting

Somatic Mutation of the OXA1L 5'UTR enables Cutaneous Squamous Cell Carcinoma
Angela Mah, Jasmine Garcia, Dane Sessions, **Tomas Bencomo**, Ashley Amado, Ankit Srivastava, Carolyn Lee
Plenary Session - Society For Investigative Dermatology 2021 Annual Meeting

Molecular Profiling of Cutaneous C-Group Non-Langerhans Cell Histiocytoses
Rebekah Wieland, **Tomas Bencomo**, Carolyn Lee, Ryanne Brown
United States and Canadian Academy of Pathology 2021 Annual Meeting

Sex Differences In GBM Patient Survival As A Function of Extent Of Surgical Resection and Cycles of Adjuvant Temozolomide During Standard Of Care Regimens
Julia Lorence, **Tomas Bencomo**, Haylye White, Cassandra Rickertsen, Susan Massey, Kyle Singleton, Andrea Hawkins-Daarud, Sandra Johnston, Alyx Porter, Maciej Mrugala, Bernard Bendok, Leland Hu, Joshua Rubin, Kristin Swanson
Society for Neuro-Oncology 2020 Annual Meeting

Rac1-interacting proteins are prognostic factors for melanoma survival
Marten CG Winge, **Tomas Bencomo**, M. Peter Marinkovich, Carolyn S. Lee
Society For Investigative Dermatology 2020 Annual Meeting

Sex differences in GBM treatment: an observational study
Lorence J., **Bencomo T.**, White H., Rickertsen C.R., De Leon, G. Singleton K. W., Daruud-Hawkins A., Bendok B. R., Porter A. B., Mrugala M. M., Rubin J.B., and Swanson K. R.

Sex Differences in Tumor Location Incidence in Newly Diagnosed Glioblastoma Patients
Lorence J., **Bencomo T.**, White H., Rickertsen C.R., De Leon G., Singleton K., Bendok B., Porter A. B., Rubin J. B., Swanson K. R.
Society for Neuro-Oncology 2019 Annual Meeting

Modeling the interface between non-invasive imaging and drug distribution
Ranjbar, Sara; **Bencomo, Tomas**; Jackson, Pamela R; Randall, Elizabeth; Regan, Micheal; Abdelmoula, Walid M; Lopez, Begona GC; Massey, Susan Christine; He, Lihong; Macura, Slobodan; Hu, Leland; Agar, Jefferey N; Sarkaria, Jann; Agar, Nathalie; Swanson, Kristin R.
CSBC/PS-ON 2019 Annual Investigators Meeting

The Same But Different: Identifying Distinct Imaging Ecologies in Male and Female Glioblastomas
Tomas Bencomo, Andrea Hawkins-Daarud, Kyle Singleton and Kristin R. Swanson.
CSBC/PS-ON 2018 Annual Investigators Meeting

GPU-accelerated differential dependency network analysis
Gil Speyer, Juan Rodriguez, **Tomas Bencomo** and Seungchan Kim
Euromicro International Conference on Parallel, Distributed and Network-Based Processing 2018

LANGUAGES

English: Native Language

Spanish: Intermediate Proficiency

TECHNICAL SKILLS

Programming: R, Python, Java, C, C++

Biostatistics: Regression modeling, machine learning, survival analysis, experimental design

Bioinformatics: Mutation profiling, bulk and single cell RNA-sequencing, spatial analysis, data visualization

Computing: Snakemake, Docker, Unix, Bash, HPC, scikit-learn, pandas, tidyverse

EXTRACURRICULARS

Tau Beta Pi Honors Society Board – Academic Co-Chair   2020 – 2021
Organize academic development events and lead the Peer Mentorship Program

Computer Science Peer Mentor   2020 – 2021
Advise and mentor underclassmen considering a major in Computer Science