Curriculum Vitae of Daniel J. Gomez
Stanford Genome Technology Center

DEMOGRAPHIC INFORMATION

Current Appointments

Bioinformatics Graduate Student of California State University, East Bay
Graduate Student Researcher, Snyder Lab, Stanford Genetics, Stanford School of Medicine

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KEYWORDS/AREAS OF INTEREST

- Spatial Biology and Pathology (spatial genomics data interpretation)
- Computational biology methods and development (data visualization)
- Emerging technology in Data Science for P4 Medicine and Cloud computing
- Novel diagnostic and therapeutics approaches
- Single-Cell Data and Spatial Multi-Omics data analysis
- Network Data Analysis in Medicine and Biotechnology

Education and Training

Graduate

2022- M.S., Biology: Bioinformatics and Integrative Genomics
Department of Biological Sciences
California State University, Hayward, CA
Department of Genetics, Stanford University School of Medicine
(Thesis Advisor: Prof. Michael Snyder)

2023 2nd Annual Spatial Biology Workshop (Angelo Lab)
Department of Pathology, Stanford School of Medicine

2023 Graduate Student Intern (SCI Faculty Support)
Department of Structural Biology, Department of Chemical and Systems Biology
Stanford Cancer Institute, Stanford University School of Medicine
(Advisor: Prof. Kacper Rogala)

2023 Image Processing Workshop for Cryo-Electron Microscopy
S2C2 | Stanford-SLAC Cryo-EM Center

2023 Biological cryogenic microscopy and tomography (BioE 320)
Stanford Bioengineering, Schools of Engineering & Medicine

2023 Certificate, SSRL RapiData 2023: Data Collection and Structure Solving: A Practical Course in Macromolecular X-Ray Diffraction Measurement
Structural Molecular Biology (SMB) Division, Macromolecular Crystallography, Stanford Synchrotron Radiation Lightsource (SSRL), SLAC National Accelerator Laboratory

2012-13 Neurosciences, Neurovirology Graduate Courses
Department of Cell and Molecular Biology (CMB)
Department of Tropical Medicine, Medical Microbiology, and Pharmacology (DTMMMP), John A. Burns School of Medicine (JABSOM), Honolulu, HI
(Advisor: Prof. Dr. Bruce Shiramizu, Prof. Vivek Nerurkar)

2012 Translational research in NeuroAIDS and Mental Health
Neuroimmune Pharmacology Graduate Course
Department of Neurology and Neurosurgery
Division of Neuroimmunology and Neurological Infections
Johns Hopkins University School of Medicine
(Advisor: Dr. Avindra Nath, Prof. Amanda Brown)

Undergraduate

2020-22 B.S., Cell and Molecular Biology, San Francisco State University, CA
(Advisor: Prof. Michael Goldman, Prof. Nicole Salazar-Velmeshev)
2010-13 Molecular Cell Biology, University of Hawaii at Manoa, HI
2008-10 Speech & Communication Studies, Ohlone College, CA
2003-09 Dual Credit (Study Abroad), Modesto Junior College, CA

Professional Experience

2023- Graduate Student Researcher, Snyder Lab, Stanford Genetics
2023- Neuroimaging Data Scientist, Steinberg Lab, Stanford Neurosurgery
2023- Vice President of STEM Programs, Myplaceisahappy1 (MPH1)
2023 Visiting Graduate Intern, Stanford Cancer Institute (SCI), Stanford Medicine
2022-23 Visiting scientist “User”, SLAC National Accelerator Laboratory
2022-23 Teaching Associate of Biological Sciences, CSU East Bay
2022- Virtual Volunteer Associate Fellow, Microbiology & Immunology, Neurobiology and Anatomy, Drexel University College of Medicine
2022 Lab Assistant II of Operations, Roche Diagnostics (Roche)
2021-22 Formulations Operator II, Robotics, Thermo Fisher Scientific
2020 Research Assistant of Physiological Sciences, Toxicology, U. of Florida
2019 Manufacturing Associate Technician, Custom Primers, Thermo Fisher Scientific
2018 Client Relationship Manager/Developer/Sales Engineer, Poshprofiles
2015-16 R&D Coordinator, dosist
2015 Assistant General Manager, Amoura International Inc.
2014 Research Assistant of Anesthesia/Neuroanesthesia, UCSD SoM

2013 Research Assistant of DTMMMP, JABSOM
2012-13 Biology Assistant of DTMMMP, JABSOM
2011 Teaching Assistant of Chemistry, University of Hawaii at Mānoa

SCHOLARLY PUBLICATIONS:

Peer Reviewed Publications: *Co-Authors

1. **D.J. Gomez*,** T.H. Mulherkar*, G. Sandel, P. Jain*, Co-infection and cancer: Host-Pathogen Interaction between Dendritic Cells and HIV-1, HTLV-1, and Other Oncogenic Viruses. *Viruses*. 2022 Sep 14;14(9):2037.
2. **D.J. Gómez*.** Untangling the Microscopic World of Organelles, Cells, Tissues, and Organs: A Focus on the Dysfunctional Golgi Apparatus in Disease Research. *Biology and Life Sciences Forum*. 2023

Non peer-reviewed journal articles

1. **D. Gomez***, Pioneering Organelle Structural Biology: Golgi apparatus dysfunction in Parkinson's Disease, Neurodevelopmental Disorders, and Cancer. *Preprints*, 2022, 2022100383.
2. **D. Gomez*.** Unraveling the Structural Dynamics of Human Pegivirus-1 RNA- Dependent RNA Polymerase Using Computational Methods. *ResearchGate*, 2022.

CONFERENCE ABSTRACTS

1. **Gomez D.J.**, Mulherkar T., Sandel G., Jain P. "Co-infection and cancer: Viral oncogenesis in humans result in liver, blood, and brain cancer by host-pathogen interactions" 12th Annual AACR-JCA Joint Conference. (2022)

SYMPOSIUM POSTERS

1. **Gomez D.J.**, Mulherkar T., Sandel G., Jain P. "Co-infection and Human Cancer: Viral Oncogenesis leads to Host-Pathogen-Tumor-Body Interactions" 22nd Microbiology Student Group Symposium in Krutch Theater at Clark Kerr UC Berkeley Campus (2023)

GRANTS

<u>Prior Funding</u>

Undergraduate Research Opportunities Program (UROP)
04/22/2013 Office of the Vice Provost for Research and Scholarship (OVPRS)
University of Hawaii at Manoa
John A. Burns School of Medicine (PI: Bruce Shiramizu)
Role: Co-Investigator
<u>IL-17 Production in CNS by Infiltrating T Cells and Glial Cells in the HIV-1-Infected Brain</u>

The goal of this study to gain mechanistic insights into fronto-striatal brain wiring of neuroinflammatory pathways in HIV-Associated Neurocognitive Disorders (HAND) for the purpose of overcoming translational mental health roadblocks in precision medicine.

EDUCATIONAL ACTIVITES

Teaching

Classroom Instruction

Cal State East Bay

Fall 2022 BIOL 230 (Clinical Microbiology) – 2 sections
Fall 2022 BIOL 270 (Human Anatomy & Physiology I) – 1 section

University of Hawaii at Manoa

Spring 2011 CHEM 161L (General Chemistry I Laboratory) – 2 sections

Modesto Junior College

Summer 2005 English Language – Thailand, Laos (Study Abroad)

Tutoring

2011 Private Organic Chemistry Tutor
2011 Chemistry, Biology, Organic Chemistry (Learning Emporium)

Workshops/Seminars/Users' Meetings/Symposiums/Conferences

11/23 IEDB Virtual User Workshop. La Jolla Institute for Immunology. Immune Epitope Database and Analysis Resource
09/23 Beyond blotting: Boosting protein analysis with cell-based immunofluorescent assays
09/23 Stanford Genetics Structural Variants and DNA Repeats
05/23 Image Processing for Cryo-EM at S2C2-Stanford-Cryo-EM Center (SLAC)
10/22 5th Annual Cal State East Bay Hack Day (Hack the Outbreak)
10/22 IEDB Virtual User Workshop. La Jolla Institute for Immunology. Immune Epitope Database and Analysis Resource. Funded by the National Institute of Allergy and Infectious Diseases (NIAID)
09/22 Predicting cancer immunotherapy response by highly multiplexed tumor imaging (Certified)
09/22 SSRL/LCLS Users' Meeting. (Stanford-SLAC)
06/22 UW-Madison, 42nd Steenbock Symposium, "Opening Doors to Cryo-EM" Titan Krios G3 and G4 workshop, Cryo-electron tomography, SerialEM.
05/22 Invited Speaker, CSU Northridge, "Data Driven Discovery of Computational Oncology and Modern Molecular Biology"

Mentoring (Advisees)

2023- Andreea Radu, Nursing, CSUEB
2022 Daniil Mudrov, Cell and Molecular Biology, CSUEB, MEDGENOME

Undergraduate Students

2023 UF Minority Health Professional Mentorship Program (MHPMP) Emmanuel Espinoza, Biochemistry, University of Florida (UF)

2022 Courtney-Jane Lopez, CNA, Pre-Nursing (CSUEB)
2022 Yongtao Guan (Pre-med, CSUEB, Ohlone College)

RESEARCH ACTIVITIES

Research Focus: Inter-Organismal (Human and Preclinical models) Networks, Exerkines Mapping, Molecular Transducers of Physical Activity (MoTrPAC) and Genotype-Tissue Expression (GTEx) data hubs, Network Physiomes, Computational Biology and Bioinformatics

Professional Societies

2023 Genetics Society of America (GSEA)
2023 American Society of Human Genetics (ASHG)
2022 ISCB: International Society for Computational Biology
2022 ACA: The Structural Science Society
2022- American Associate for Cancer Research (AACR)
2022- Society for Neuro-Oncology (SNO)
2022 American Society for Virology (ASV)
2020 American Society Biochemistry and Molecular Biology (ASBMB)
2013 The American Association of Immunologist (AAI)
2012 Society of NeuroImmune Pharmacology (SNIP)

RECOGINITION

Invited Talks, Panels

04/23 Speaker, Grand Slam Graduate Research Presentation, "Virophysics and Structural Dynamics of HPgV-1 NS5B Using Computational Methods," Hayward, CA
03/23 Speaker, Cells 2023 Conference of MDPI/sciforum, "Pioneering organelle structural biology: Golgi apparatus dysfunction and cascades of fatal pathways in cancer," Virtual.
01/23 Speaker, Drexel Medicine, "Landscape of myeloid and astrocyte phenotypes in acute MS lesions and future technological directions," Virtual. (Jain Lab)
10/22 Speaker, Chemistry 2022: Global Virtual Summit on Chemistry & Pharmaceutical Chemistry, "Ribozyme mechanisms and Clinical Gene Therapy," Virtual.
10/22 Speaker, Cancer Webinar 2022: 5th International Webinar on Cancer Research and Oncology, "A human retrovirus in Neuro-Oncology, interventional conductome studies, and theranostics in Nuclear Medicine," Virtual.

OTHER PROFESSIONAL ACCOMPLISHMENTS

Oral Presentations

10/22 Microbiology Control, Microbiology & Immunology, Neurobiology & Anatomy, Drexel Medicine, Philadelphia, PA; **Gomez D.J.** Cancers:

	PCNSL outcome in EBV+/HIV Coinfection and HTLV connection in HIV/AIDS patients.
10/22	California State University, East Bay, Hayward, CA; **Gomez D.** HTLV-1: From neuroimaging to neurosurgery and biomarkers of neuroinflammation and neurodegeneration in HAM/TSP progression.
10/22	Hack the Outbreak. California State University, East Bay, Hayward, CA; **Gomez D**. PathAR.
09/22	California State University, East Bay, Hayward, CA; **Gomez D**. Deltaretrovirus: HTLV.
09/22	California State University, East Bay, Hayward, CA; **Gomez D**. "An intasome story: Structural basis of host protein hijacking in human T-cell leukemia virus integration.

Certifications

2023-	Fundamentals of Data Science in Precision Medicine and Cloud Computing
2023	SSRL RapiData 2023: Data Collection and Structure Solving: A Practical Course in Macromolecular X-Ray Diffraction Measurement (Stanford/SLAC)
2022	Predicting cancer immunotherapy response by highly multiplexed tumor imaging
2022	Cyber Security for Lab Users, SLAC National Accelerator Laboratory
2019	IRB Training
2019	Life Sciences Responsible Conduct of Research Course (RCR)
2018	Medical School Pathology (192 hours)
2017	DNA Research with Biopython
2017	Data Science and Machine Learning Bootcamp with R
2017	Google's Go (golang) Programming Language
2017	Python for Data Science and Machine Learning Bootcamp
2016	Intro to SQL for Data Science — DataCamp