Daniel J. Gomez

Exercise Molecular Cellular Physiologist and Pathobiologist

Graduate, Department of Biological Sciences, California State University, East Bay
Snyder Lab, Stanford Genetics, Stanford University School of Medicine

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SUMMARY

A well-established Scientist/Engineer with a computational focus in multi-omics, single-cell RNA and protein sequencing, spatial omics, organ mapping, Genetics/Genomics, Imaging Science, Histology, Pathology, and Biomedical Science. Experienced in leveraging translational medicine and biomedical research, precision medicine, diagnosis, therapeutics, and prognosis as well as implement early and effective medicine.

Education and Training

Graduate (Predoctoral)

2025-2026 **Certificate, AI/ML Fundamentals in Precision Medicine**
Department of Genetics, Stanford University School of Medicine
Stanford Data Ocean, Stanford Deep Data Research Center

2022-2026 **M.S., Biological Sciences (Thesis: Stanford Genetics)**
Department of Biological Sciences
California State University, Hayward, CA
Department of Genetics
Stanford University School of Medicine, Palo Alto, CA
Stanford Cancer Institute
(Thesis Advisor: Prof. Michael Snyder)

2024 HuBMAP Visible Human Course
Department of Cyberinfrastructure for Network Science Center
Indiana University (Professor Katy Börner)

2024 **Certificate, Bioinformatics**
Fundamentals of Data Science in Precision Medicine and Cloud Computing Department of Genetics, Stanford University School of Medicine
Stanford Data Ocean, Stanford Deep Data Research Center

2023 2nd Annual Spatial Biology Workshop
Department of Pathology (Professor Micheal Angelo Lab)

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 Cryo-ET Preparation | Stanford-SLAC Cryo-EM Center

2023 BioE 320: Biological cryogenic microscopy and tomography
Stanford Bioengineering, Schools of Engineering & Medicine,
Stanford University School of Medicine (Advisor: Prof. Wah Chiu)

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 (Advisor: Dr. Aina Cohen)

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, Prof. Dr. Bruce Shiramizu)

Undergraduate

2020-22 **B.S., Biology: 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
(Advisor: Prof. Paul Patek, Prof. Dr. Bruce Shiramizu)
2008-10 Communication Studies (Honors, Sigma Chi Eta Chapter), Ohlone College, CA
2003-09 Dual Credit (Study Abroad), Modesto Junior College, CA

Professional Experience

2023-2026 Graduate Student Research Affiliate, Snyder Lab, Stanford Genetics
2023 Graduate Student Intern, Snyder Lab, Stanford Cancer Institute (SCI), Stanford

	Medicine
2023	Neuroimaging Data Scientist, Steinberg Lab, Stanford Neurosurgery
2023	SCI Faculty Support and Graduate Visiting Scientist, Rogala Lab, Stanford Structural Biology, and Chemical and Systems Biology, Stanford Cancer Institute (SCI), Stanford Medicine
2022-23	Visiting scientist, 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 Molecular Systems)
2021-22	Formulations Operator II, Robotics, Thermo Fisher Scientific
2020	Research Assistant of Physiological Sciences, Toxicology, University of Florida
2019	Manufacturing Associate Technician, Custom Primers, Thermo Fisher Scientific
2018	Client Relationship Manager and Developer, Poshprofiles (BAWF, YapJoy, Inc)
2017	Sales Scientist, Car Dealerships (VW, Honda)
2015-16	R&D Coordinator, dosist/hmbldt
2015	Assistant General Manager, Amoura International Inc.
2014	Research Assistant of Anesthesia/Neuroanesthesia, UCSDSOM
2013	Research Assistant of DTMMMP, JABSOM, University of Hawaii at Mānoa
2012-13	Biology Assistant of DTMMMP, JABSOM, University of Hawaii at Mānoa
2011	Teaching Assistant of Chemistry, University of Hawaii at Mānoa

Thesis: Generated digital twin approaches map exerkines, organs, immunotherapy, and personalized microbiotypes

The thesis project generated a list of exerkines, ligands, and receptors RNA, protein, and metabolites as well as generate organ maps with Human Biomolecular Atlas Project and Human Tumor Atlas Network (HuBMAP/HTAN), Human Gut Cell Atlas (HGCA), PsychENCODE (PEC) single-cell and spatially resolved technologies as well as techniques 10x Genomics Chromium, Visium, and Xenium CODEX/Phenocyler, STOmics Stereo-seq, Vizgen MERSCOPE/MERFISH data and augment exercise immunotherapy innovations as well as personalized microbiotypes.

SCHOLARLY PUBLICATIONS:

Peer Reviewed Publications: *Co-Authored

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

Prior Funding

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

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.

Journal Reviewer/Referee
Biology
Cancers
Cells
Healthcare
Pharmaceutical
International Journal of Molecular Sciences (IJMS)

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 Mānoa
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, CaduceusRx
2011 Chemistry, Biology, Organic Chemistry (Learning Emporium), University of Hawaii at Mānoa

Mentoring (Advisees) — Undergraduate Students

2022 Matthew Williamson, Biological Sciences (CSUEB)
Cell and Molecular Biology, B.S.
SBX, Single-cell RNA Sequencing
Genentech

2022 Daniil Mudrov, M.S. Biochemistry (St. Joseph's University)
Cell and Molecular Biology, B.S. (CSUEB)
NGS, Single-cell RNA Sequencing
MEDGENOME, Genentech

2023 Indigo Wade, Nursing Program, (CSUEB)
Nursing, Health Sciences

2023 Andreea Radu, Nursing Program, (CSUEB)
Nursing

2023 Emmanuel Espinoza, UF Minority Health Professional Mentorship Program (MHPMP) Biochemistry, University of Florida (UF)
Inorganic chemistry; Quantitative Chemistry, Biochemistry

2022 Yongtao Guan (Pre-med, CSUEB, Ohlone College, UC Davis)
Clinical Microbiology, Undergraduate Researcher

2022 Courtney-Jane Lopez, CNA, Nursing (CSUEB),
Clinical Microbiology; Health Sciences

2022 Ariella Vue, Nursing (CSUEB)
Human Anatomy and Physiology; Nursing

Workshops | Seminars | Users' Meetings | Symposia | Conferences | Series | Reunions

11/2025 Snyder Lab 40 Year Lab Alumni Reunion
02/2025 Precision Medicine World Conference 2025
11/2024 Stanford Spatial Biology Symposium, 10x Genomics, Stanford University
11/2024 Gastric Cancer Summit 2024, National Cancer Institute, Stanford Medicine
09/2024 Comprehensive Cancer Biology Training Program 2024, Stanford Cancer Institute, Stanford Medicine

09/2024	Proteomics: From Genomics to Proteomics, Stanford Healthcare Innovation Lab
09/2024	Giotto Suite Workshop 2024, Boston University
06/2024	Contextualizing Cellular Physiology Workshop, NIH, NIDDK
05/2024	Genomics and Personalized Medicine Symposium, Stanford Genetics
05/2024	AI in IO: Computational Immuno-oncology SITC-NCI Webinar Series
04/2024	Pediatric & Maternal Innovation Showcase 2024, Stanford Maternal Health, Stanford Metabolic Center, Stanford Medicine Children's Health
11/2023	IEDB Virtual User Workshop. La Jolla Institute for Immunology. Immune Epitope Database and Analysis Resource
09/2023	Beyond blotting: Boosting protein analysis with cell-based immunofluorescent assays
09/2023	Stanford Genetics Structural Variants and DNA Repeats
10/2022	Image Processing for Cryo-EM at S2C2-Stanford-Cryo-EM Center (SLAC)
10/2022	5th Annual Cal State East Bay Hack Day (Hack the Outbreak)
10/2022	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)
09/2022	Predicting cancer immunotherapy response by highly multiplexed tumor imaging (Certification)
09/2022	SSRL/LCLS Users' Meeting (Stanford-SLAC)
06/2022	UW-Madison, 42nd Steenbock Symposium, "Opening Doors to Cryo-EM" Titan Krios G3 and G4 workshop, Cryo-electron tomography, SerialEM.
05/2022	Invited Speaker, CSU Northridge, "Data-Driven Discovery of Computational Oncology and Modern Molecular Biology"

Professional Societies

2024	Society for Immunotherapy of Cancer (SITC)
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
2023	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

10/2022	Department of 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.
10/2022	Seminar, 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.
10/2022	Hack the Outbreak. California State University, East Bay, Hayward, CA; **Gomez D**. PathAR.
09/2022	Seminar, California State University, East Bay, Hayward, CA; **Gomez D**. Deltaretrovirus: HTLV.
09/2022	Seminar, 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

2025-	AI/ML Fundamentals in Precision Medicine
2024	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	Bootcamp Data Science and Machine Learning Bootcamp with R