4th Annual
SYMPOSIUM
May 30th, 2024
A NOTE FROM PROPEL LEADERSHIP

We are thrilled to be capping off our fourth full year of the PROPEL program with this symposium! PROPEL began as a pilot program four years ago with a small team of faculty and staff, and just six scholars. Since then, the PROPEL community has grown tremendously, with an over tenfold increase in the number of scholars in the program and many new faculty and staff who are contributing their time, energy, and talents to the mission. This symposium marks the end of our second full year as an established program, and we are proud of all the success we have had so far. In the past two years, 38 scholars have completed the program and gone on to the next stage of their career. 79% of these scholars were accepted into a graduate (PhD, MD/PhD, MPH) or professional (MD, PharmD) school, including many who accepted offers here at UCSF, and an additional 16% have accepted positions in industry. We are pleased that we have been able to secure new funding for the program in the past year from multiple sources, including the NIH, the UCSF School of Medicine, and the Emerson Collective. PROPEL is now starting to gain recognition well beyond UCSF and, with the formation of National PROPEL, we hope it will become a new model for postbaccalaureate education in the US. In the past year, we have identified two partner institutions, University of Iowa, and University of Washington/Fred Hutchinson Cancer Center, who are starting up their own PROPEL programs and we are pleased to welcome them to our symposium today. The generous support the program has received from the Executive Vice Chancellor’s Office as well as from many UCSF Institutions and Departments gave PROPEL the momentum to get off the ground, and everyone in the PROPEL community--scholars, faculty and staff--have built it up from there. We feel incredibly honored and privileged to be a part of this program and are looking forward to many more successes to come!
PROGRAM

12:30 – 12:45  WELCOME  Location: BYERS AUDITORIUM

12:45 – 1:45  SCHOLAR TALKS (PART 1)  Location: BYERS AUDITORIUM

Speakers

- Ada Alvarez Muñoz (Fujimori Lab) - Structural and Functional Analysis of Nsp14 and Nsp16 for the Development of Antivirals Targeting Viral RNA Methylation
- Tara Samson (BrainChange Lab) - Effects of mindfulness training on sleep and the adolescent brain
- Faye Orcales (Liao Lab) - A partitioned polygenic risk score reveals distinct contributions to psoriasis clinical phenotypes across a multi-racial cohort
- Daniza Diane Acenas (Betancur Lab) - Investigating the regulatory role of an insertion/deletion (InDel) variant on CD47 and LINC00636 transcriptional expression in breast cancer

1:45 – 2:30  KEYNOTE SPEAKER  Location: BYERS AUDITORIUM

- Dr. Letícia Márquez-Magaña - PhD, Professor of Biology SFSU, Director of SF BUILD, Elder Director of the Health & Equity Research Lab

"Propelling Equitable Science through Aspirational and Resistant Capitals"

2:30 – 3:30  POSTER SESSION/COFFEE BREAK  Location: 1ST FLOOR ATRIUM

3:30 – 5:00  SCHOLAR TALKS (PART 2)  Location: BYERS AUDITORIUM

Speakers

- Venus Hagan (Kampmann Lab) - Synaptic Pruning: A Function of Interferon Responsive Microglia? *
- Katelyn Herm (Bose Lab) - Disrupting Potential Cancer Cell Communication with Macrophages to Alter Androgen Associated Tumorigenesis *
- Mariann Guzman-Espinoza (Hutchins Lab) - Dissecting the Post-Transcriptional Role of Pum2 during neural crest EMT
- Spencer Danner-Bocks (Kampmann Lab) - High-throughput pooled CRISPRi screening in the mouse brain uncovers neuron essential genes
- Andreana Gomez (Nystul Lab) - Identifying proteins involved in the maturation and stabilizing of follicle cell ring canals
- Elizabeth Yip (Chou Lab) - TGFbeta inhibition augments NECTIN4-CAR T therapy through dual mechanisms in urothelial carcinoma

5:00 – 6:00  SCHOLARS ONLY SESSION  Location: BYERS AUDITORIUM

Led by Scholars Council

* Scholars’ Council Nominated Talk
POSTER PRESENTATIONS

Rithika Adavikolanu (Kaake Lab) - Characterizing Host Signaling Pathways Targeted by SARS-related Coronaviruses across Humans and Bats

Shaista Afzal (Darboe Lab) - Impact of HIV Acquisition and Antiretroviral Therapy Initiation on Tuberculosis Risk: Insights from a Longitudinal Study in Men Who Have Sex with Men and Transgender Women

Mikail Alejandro (Almeida Lab) - Assay development to support manufacturing of BCAN-specific synNotch-CAR T cells for treatment of glioblastoma

Naa Ashitey (Spitzer Lab) - Investigating B Cell Germinal Center Responses in Tumor Settings

Eunice Bonfil (Roose Lab) - Exploring the Colorectal Cancer-Liver (CRC) Metastatic Microenvironment through 3D Co-cultures

Daniel Brown (Ou Lab) - Retinal Explant Assay Development for Retinal Ganglion Cell Transplantation

Rico Carale (Scharschmidt Lab) - Understanding the role of neonatal skin monocytes in regulating long-term cutaneous type 17 inflammation

Esther Chavez-Iglesias (Kober Lab) - Dissociation of the Effects of Anticancer Agents Versus Cancer on Peripheral Blood Mononuclear Cells Through Bulk Transcriptomics - Status of the Preliminary Feasibility

Erika Cota (Kornberg Lab) - Enrichment of Germline Nuclei from Drosophila late egg chambers for RNAseq profiling

Jaiden de Anda (Selleri Lab) - Unraveling Calcineurin/NFAT Signaling in Species Exhibiting Different Midfacial Elongation

Camille Fang (Ou Lab) - Determining Microglia Dynamics and Their Role In Synaptic Pruning In Experimental Glaucoma

Farah Farouq (Namboodiri Lab) - Computational properties of alcohol memory in a Pavlovian conditioning paradigm
Alyana Granados (Susa Lab) - Uncovering how Tetraspanin12 regulates the binding of Norrin to Frizzled-4

Rezno Huarcaya (Xu Lab) - ASB4 modulates anorectic effects of common weight loss pharmacological agents

Reanna Lao (Kaake Lab) - Systematic characterization of poxviral host-pathogen interactomes through integrated multi-omics analysis describe novel mechanisms of virulence

Caroline Le (Kober Lab) - A Meta-Dimensional Approach to Identify Subgroups of Patients Undergoing Chemotherapy Associated with Morning Fatigue Severity

Kanika Leang (Chorba Lab) - Elucidating the Mechanism of Small-Molecule Inhibitors to PCSK9

Jeremy Libang (Allen Lab) - Regulation of IgE Class Switch Recombination by STAT3

Kyle Magro (Ansel Lab) - STAT6 3’ UTR Region with RNA-binding Protein Occupied Sites and Allergic Risk-Associated SNP Potentially Stabilizes STAT6 mRNA Expression

Joseph Moreno (Huang Lab) - Investigating the thyroid hormone binding site on the gene, Bcl6

Brittany Morin (Vonk Lab) - A Pipeline to Automatically Capture Speech and Language Features in Alzheimer’s Disease

Barry Nguyen (Lakkaraju Lab) - Characterizing Hallmarks of Microglia Pathological Switch in the Context of GRN-/--Induced Retinal Degeneration

Elena Ochoa (Sil Lab) - Testing the role Subtilases play in spherule formation and growth of Coccidioides

Lilian Quijada Madrid (Aguilar Lab) - Investigating CD16 responses in human NK cells
POSTER PRESENTATIONS

Lorenzo Ramirez (Turnbaugh Lab) - Searching for the cryptic substrates of a prevalent gut bacterial enzyme implicated in immune activation

David Rosado Rolon (vonk Lab) - A Novel Approach to Semantic Network Analysis Using Category Fluency Data

Shayleen Singh (Rutishauser Lab) - Characterizing the differentiation state of virus-specific CD8+ T cells in CMV+ infants and toddlers

John Matthew Suntay (Hernandez Lab) - Validating the Role that Rare Variants Play in the Genetic Architecture of Gene Expression

Sara Toumi (Schwer Lab) - Lin52 is Essential to Mammalian Forebrain Development

Omar Valdez (Erlebacher Lab) - Epigenetic regulation of the human decidual stromal cell inflammatory response

Edward Valenzuela (Crouch Lab) - Defining the Trajectory of Vascular Progenitor Cells in Human Brain Development

Cristian Valtierra (Pasquini Lab) - Psychedelics impact on Brain Gene Expression: a systematic literature search and analysis

Juliette Ward (Ford Lab) - The Ketogenic Diet Improves Cognitive Performance, Metabolic Markers, and Psychotic Symptoms in Schizophrenia

Islah Zareef-Mustafa (Krummel Lab) - Investigating the Role of Granulin in Mouse Models of Cancer: Implications for cDC and T cell Interactions

Brian Zou (Chorba Lab) - Chemically leveraging the neo-N terminus for PCSK9 disruption
2024/25 CURRICULUM

FALL

• Literature Review Course (1st yr scholars only)
  ○ Thursdays, 4pm-5pm September, 2024 - June 2025
• Graduate Applications Workshop Series (Sept & Oct, TBA)
  PhD-bound:
  ○ Grad Applications Panel
  ○ Personal Statement Workshop
  MD/PhD-bound:
  ○ MSTP Interest Panel (hosted by UCSF MSTP)
  ○ Demystifying the AMCAS Application Process
  ○ MSTP Essay Writing Workshop
• Secondary Mentor Meetings (individually scheduled)

WINTER

• Literature Review Course – cont’d
• Grad App Workshop Series –cont’d
  PhD-bound:
  ○ Mock interviews (indiv. scheduled)
  MD/PhD-bound:
  ○ AMCAS Nuts & Bolts Workshop
• Secondary Mentor Meetings

SPRING

• Literature Review Course – cont’d
• Build Your Research Community
  ○ (April & May, TBA. 2nd yr and exiting scholars only)
• Programming and Statistic
  ○ (April & May, TBA)
• Secondary Mentor Meetings
CONGRADULATIONS!
Best of luck to our scholars leaving this year.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution/Program</th>
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<tbody>
<tr>
<td>Genevieve Akponye</td>
<td>Clinical Research Coordinator</td>
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<tr>
<td>Naa Ashitey</td>
<td>University of Washington, Madison – MSTP</td>
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<tr>
<td>Sapeeda Barati</td>
<td>Stanford – Neuroscience</td>
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<td>Ashlie Barillas</td>
<td>Stanford – Genetics</td>
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<tr>
<td>Vincent Castillo</td>
<td>UCSF – MSTP</td>
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<tr>
<td>Spencer Danner-Bocks</td>
<td>UCSF – Neuroscience</td>
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<td>Dorothy Estrada</td>
<td>University of Oregon – Molecular Biology</td>
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<td>Andreana Gomez</td>
<td>UCSF – Oral and Craniofacial Sciences</td>
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<td>Mariann Guzman-Espinoza</td>
<td>Stanford – Developmental Biology</td>
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<td>Sarah Hanson</td>
<td>Cedars Sinai – Biomedical Sciences</td>
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<td>Annie Ikemoto</td>
<td>Memorial Sloan Kettering – Cancer Engineering</td>
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<td>Joshua Johnson</td>
<td>UCSF – Physical Therapy</td>
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<tr>
<td>Jeremy Libang</td>
<td>UCSF – Biomedical Sciences</td>
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<tr>
<td>Kyle Magro</td>
<td>UCSD – Biomedical Sciences</td>
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<td>Annette Mercedes</td>
<td>Pennsylvania State – Molecular and Cellular Biology</td>
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<td>Brittany Morin</td>
<td>UCSF – Epidemiology</td>
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<tr>
<td>Crisitan Preciado</td>
<td>University of Arizona – Cognition &amp; Neural Systems</td>
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<tr>
<td>Jacob Rulison</td>
<td>Harvard – Virology</td>
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<tr>
<td>Angel Ruvalcaba</td>
<td>UCSF – Biomedical Sciences</td>
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<tr>
<td>Matt Suntay</td>
<td>UCSF – Biological and Medical Informatics</td>
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<tr>
<td>Hanna Taglinao</td>
<td>University of Washington – M3D &amp; Immunology</td>
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<tr>
<td>An Tran</td>
<td>USC – PIBBS</td>
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<tr>
<td>Edward Valenzuela</td>
<td>UCSF – Developmental and Stem Cell Biology</td>
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<tr>
<td>Elina Wells</td>
<td>Weill Cornell – Immunology &amp; Microbial Pathogenesis</td>
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Bethany Andoko is a PROPEL Scholar in the Laboratory for Musculoskeletal Crosstalk of Dr. Kelsey Collins. She is particularly interested in studying fat-cartilage crosstalk to delineate the molecular mechanisms of osteoarthritis and help develop novel therapeutic strategies to address musculoskeletal pain. Outside of lab, She enjoys listening to music, watching (and re-watching) shows, reading, and traveling.

Edwina Mambou is a Junior Specialist in Dr. Aimee Kao’s Lab where she is investigating the tissue-specific changes in lysosomal pH in aged C. elegans. Edwina is interested in understanding the molecular mechanisms behind specific changes in lysosomal pH in neurons and their role in neurodegeneration. She is currently applying to molecular biology and neuroscience PhD programs this Fall as the next steps to her goal of starting an independent research lab at a competitive research university. Outside of the lab, She loves crafting, crocheting, and reality TV!

Joshua Johnson is an SRA in Dr. Richard Souza’s Biomechanics Musculoskeletal and Imaging Lab. His research focuses on understanding hip and knee osteoarthritis and the downstream impact it has on an individual’s biomechanics and lifestyle. Joshua is working towards becoming a clinician scientist as he has a passion for exercise and other preventive therapeutics. His ultimate goal is to help people from disadvantaged communities live longer, healthier, and pain-free lives.

Kyle Magro is a Junior Specialist in Professor Mark Ansel’s Laboratory. He is currently studying a post-transcriptional regulatory element marked by a disease-associated single nucleotide polymorphism and RNA-binding protein-occupied sites. Kyle is applying to Immunology PhD programs this Fall, and I hopes to continue his research career in academia by becoming a principal investigator in the field of RNA immunology. He is looking forward to serving the PROPEL community and getting to know everyone.

Austin John Escobar is a Junior Specialist at the Bastian and Yeh labs, which study melanoma and potential therapies. He is pursuing a career that ties medicine and research, particularly around cancer. Gardening, hiking, and writing are his hobbies.

Vincent Cele Castillo is a member of the Kampmann Lab. He is in love with microglia, which are pivotal to the immune system function in the brain. While not in lab, he enjoys running, reading, and playing games.
Todd Nystul is a Professor in the Departments of Anatomy and OB/Gyn. He received his B.S. from UC San Diego and his PhD from the University of Washington. His lab uses Drosophila and mouse models to investigate the function of epithelial stem cell lineages in vivo. Todd is also Co-director of the UCSF Developmental and Stem Cell Biology PhD program and an active member of the Tetrad and Biomedical Sciences PhD programs.

Ryan Hernandez is a Professor in the Department of Bioengineering and Therapeutic Sciences at UCSF. He is the co-Director of the Biological and Medical Informatics (BMI) graduate program, the Director of the Initiative for Digital Transformation at UCSF. His research focuses on population genetics, and using evolutionary modeling to understand complex biological patterns.

Paola Betancur is an Assistant Professor in the Department of Radiation Oncology. She received her B.S. from Stony Brook University, her PhD from Caltech, and performed her postdoctoral work at Stanford. Her lab studies the genomic mechanisms that activate pro-tumorigenic and immune suppressive programs in cancer cells. Paola co-chairs the Radiation Oncology DEI committee and was named John A. Watson Faculty Scholar in 2021.

K. Mark Ansel is Professor of Microbiology & Immunology and an Investigator of the Sandler Asthma Basic Research Center. He completed a B.S. at Virginia Tech, a Ph.D. at UCSF, and postdoctoral training at the Immune Disease Institute at Harvard Medical School. His lab studies RNA regulation in the immune system and cell programming involved in allergic inflammation and asthma. Mark is a former director of BMS and the director-elect of ImmunoX.

Sam Pleasure is Professor of Neurology and Director of the Neuroscience Graduate Program. His lab’s research focuses on the role of morphogenic signals in the development of the mammalian hippocampus and cortex and on understanding the pathophysiology of autoantibody associated encephalitis. He is also an active clinical neurologist caring for patients with inflammatory CNS disorders and underserved populations at SF General Hospital.

Claude Chapman is a Professor in the Department of Medicine, in the Pulmonary, Critical Care, Allergy, and Sleep Medicine Program. She completed her B.S., MEng, M.S., and Ph.D. at Universite de Provence in Marseille, France. She also received the ATS Assembly on Respiratory Cell and Molecular Biology Carol Basbaum Award in recognition of her leadership potential. Her lab applies basic science to the discovery and development of small molecules for fibrotic diseases.

Jessica Allen is the Program Administrator of PROPEL, PREP, and CIRM. Before joining PROPEL, she coordinated science enrichment programming for public school students at UCSF Science & Health Education Partnership. She’s taught science and engineering at USF, Berkeley City College, and the Universidad de los Andes in Bogotá, Colombia. She completed her B.S. at the University of Florida and her Ph.D. at UCSF/UCB Joint Bioengineering Program.
Thank you to our current funding partners!

UCSF School of Medicine

Emerson Collective

National Institutes of Health

QBI

ImmunoDiverse

Sara & Frederic Kerrest

(continued on the next page)
Thank you to our pilot program funders

Our mission is to help aspiring scientists realize their potential through mentorship, sponsorship, and opportunity. Interested in partnering or contributing to our transformative model? Please contact program administrator Jessica Allen (jessica.allen@ucsf.edu) or any of the PROPEL leadership team.
UCSF COVID-19 Policy

UCSF faculty, staff, learners and vendors must comply with the mandatory UC Office of the President Vaccination Policy to attend an in-person meeting or event. UCSF vaccination exempt personnel must receive a negative COVID-19 test within 24 hours prior to the event. Non-UCSF guests (individuals that are not UCSF faculty, staff and learners including vendor staff) must be up to date on vaccinations meaning fully vaccinated plus booster once eligible to attend or support an in-person meeting or event.

Daily Health Screener:
All event attendees are required to take the UCSF daily health screener prior to coming onsite. Non-UCSF guests attending the event are required to take the visitor/guest screener.
UCSF screener: https://ucsf-clinicalcrm.secure.force.com/UCSFHealthScreening
Non-UCSF guest screener: https://ucsf.co1.qualtrics.com/jfe/form/SV_d6elP7DE78J4oFT

Masking:
- We encourage everyone to remain masked except when eating or drinking. We also encourage you to step outside with food or drinks.
- Unvaccinated personnel with exceptions must always wear masks and comply with other non-pharmaceutical interventions.
- Anyone with a recent high-risk exposure to COVID-19 must always wear masks and comply with other non-pharmaceutical interventions.
- Wearing masks outdoors is optional, but strongly recommended for those who are not fully vaccinated in situations where they will be in sustained close contact with others.
- Please respect and support everyone’s individual decisions, including those who choose to continue wearing a mask.

Thank you for joining us!

Want more information? Visit our website propel.ucsf.edu or email our program administrator Jessica Allen (jessica.allen@ucsf.edu)