TV CORE

September 2025 *Monthly Newsletter*

HAROLD AMOGEN

Harold was born in the Philippines and raised in Daly City, California aka “Fog Town” as locals call it. The second of four siblings, he grew up inspired by his parents: a hardworking nurse and a father devoted to the San Francisco Humane Society. His early love of the natural world, including birdwatching, fishing, and exploring nearby parks, sparked the curiosity that led him to a B.S. in Biology from UC Davis, an M.S. in Microbiology from Oregon State, and ultimately to his current research career.

That same sense of adventure now guides his work in the lab, where he is focused on developing the MIP-seq protocol to map the complete genome of HIV and identify where it integrates into the human genome. “You just never know what the data will say,” Harold says, echoing the wonder he felt as a child flipping over rocks to see what was underneath.

Outside the lab, Harold is both an explorer and a foodie. He has tried everything from beaver and llama in Patagonia to crickets in Mexico, though he’s happiest with empanadas, samosas, tacos, or burgers in hand. When he isn’t out hiking, he’s drawing trip inspiration from shows like Meat Eater and Epic Trails, or revisiting his favorite international films like Tango, The Last Elvis, and Soul Kitchen.

Harold credits his mom as the greatest influence on his life, instilling both discipline and encouragement to make the most of his time. One of his proudest memories is helping a struggling chemistry classmate find his footing, which blossomed into a lasting friendship filled with skiing and hiking adventures. His one regret? As a former competitive runner, he came within three seconds of breaking the five-minute mile and never quite reached it. Still, that determination to push a little further, whether on the track, in the lab, or in life, continues to define Harold today.

Harold, thank you for all you do in lab! You are an inspiration.

PROJECT HIGHLIGHT

https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1013411

The study **“Persistent type I interferon signaling within the brain of people with HIV on ART with cognitive impairment”** investigates the persistence of HIV-associated neurocognitive disorders (HAND) in people with HIV (PWH) despite effective antiretroviral therapy (ART). By analyzing brain tissue from 27 people with HIV (PWH) and 9 controls, it was found that immune-related proteins were consistently elevated in HAND cases, with type I interferon (IFN-I) signaling as the most prominent pathway. Proteomic data revealed up-regulation of interferon-stimulated genes such as STAT1, ISG15, IFIT, MX1, and OAS2, alongside reductions in synaptic and neuronal proteins, suggesting both immune over-activation and neural dysfunction. Single-cell RNA sequencing and cerebral organoid models further demonstrated that IFN-I activity was concentrated in astrocytes, microglia, and endothelial cells, implicating these cell types in sustaining chronic neuroinflammation and synaptic impairment.

Importantly, the study showed that IFN-I activation was not solely dependent on ongoing HIV replication. Expression of human endogenous retrovirus-W1 (HERV-W1) Env was found to directly trigger IFN-I signaling in astrocytes, maintaining inflammation even in ART-suppressed brains where HIV RNA was undetectable. This points to a self-sustaining inflammatory loop, in which both residual HIV and HERV-W1 contribute to persistent IFN-I signaling and HAND progression. The study concludes that ART alone is insufficient to prevent neurocognitive decline and propose that therapies targeting IFN-I pathways or HERV-driven activation may be required to reduce chronic neuroinflammation and protect cognitive function in PWH.

QUOTES FROM “THE COST OF SILENCE: A CALL TO PROTECT THE FUTURE OF HIV RESEARCH AND CARE”

“This moment demands honesty. We are watching progress backslide in real time, even as we stand closer than ever to what so many thought was impossible. I am not just disappointed or disheartened. I am incredulous.”
— **Orbit Clanton**, Long-Term Survivor and Community Advocate

“When I was first diagnosed in 1990, I had no hope, no medicine to take, and no chance to survive. I learned about an experimental study led by Jonas Salk and quickly enrolled. Being on a study gave me hope and gave me a chance to beat HIV. I owe my life to all those people who created, ran, and participated in studies that led to the creation of protease inhibitors that gave me a chance. I am now 68 years old and thriving! But I am not cured. We need to continue to study HIV and other diseases. We need hope. We need research. We need funding.”
— **William Freshwater**, Long-Term Survivor and Community Advocate

LEARN SOMETHING NEW

Día de los Muertos ("Day of the Dead") is a traditional Mexican holiday celebrated on **November 1 and 2,** coinciding with All Saints' Day and All Souls' Day. Far from being a somber occasion, it is a joyful celebration of life and remembrance that honors deceased loved ones. Families build ofrendas (altars) decorated with candles, marigolds, sugar skulls, photos, and favorite foods to welcome the spirits of those who have passed. The holiday blends Indigenous practices, especially from Aztec and Nahua cultures, with Catholic traditions, creating a unique syncretic celebration across Mexico and the Americas. Its most recognizable symbols include marigolds (believed to guide spirits back to the living), papel picado banners that represent the fragility of life, festive skeleton imagery like La Catrina, and food offerings shared by both the living and the dead. Rather than focusing on grief, Día de los Muertos emphasizes connection, memory, and the ongoing presence of loved ones in daily life.

In San Diego, with its deep cultural ties to Mexico, Día de los Muertos is celebrated widely across the city and county. Beginning **in October, Old Town** San Diego State Historic Park hosts community altars, workshops, and a candlelit procession to El Campo Santo cemetery, while **Fiesta de Reyes** offers daily programming with art, music, and face painting beginning **October 1- November 2.** Downtown's Day of the Dead San Diego Festival brings together music, food, dance, and artisan vendors, and Liberty Station invites families to contribute to a community altar and enjoy craft-making. Larger venues like SeaWorld San Diego also recognize the holiday with themed performances and food. Across neighborhoods such as Barrio Logan, City Heights, Sherman Heights, Chula Vista, Oceanside, and Encinitas, community events feature ofrendas, live performances, and traditional art. Together, these celebrations highlight San Diego's vibrant cultural connection to Día de los Muertos, offering both residents and visitors meaningful ways to honor and remember loved ones.

COMING UP!

Last Gift Project Gratitude Gathering Event: October 17

BIRTHDAYS

October 1: Brady
October 7: Martina
October 8: Marissa
October 15: Brendon
October 16: Davey
October 20: Anadela
October 23: Mary

CFAR
SAN DIEGO | CENTER FOR AIDS RESEARCH

SAVE THE DATE

The 2026 Department of Medicine Research Day is scheduled for April 29, 2026. This year's topic will focus on "Discovery to Delivery: Real-World Impact of Translational Research".
This is the 4th annual DOM Research Day and you will not want to miss it. Stay tuned for more details and we hope to see you there!

CONGRATULATIONS, SARA!

Earlier in September, Sara was nominated for the position of Vice Chair of Faculty Development and Mentoring for the Department of Medicine! Congratulations Sara, we are so happy for you!

Pictured: Our newest lab member, Renato, at the bench.

Have photos you want to submit for the newsletter? Email them to mborochoff@ucsd.edu