

## Satish Pillai, PhD

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Dr. Satish Pillai practices his guitar at least once a week. It's mostly for the dexterity, he says while strumming a chord. And it relieves some stress.

The latter justification seems more defensible, as Pillai is an Associate Investigator at the Blood System Research Institute (BSRI) and an Associate Professor of Laboratory Medicine at UCSF. In these complementary roles, he is a leading researcher in HIV cure research and global molecular surveillance of blood borne infectious diseases.

Pillai's road to UCSF and BSRI was unique. A native of Boston, he fled the cold to enroll at the University of Arizona. Though he originally dreamed of being an astronomer, he found the work to be too much of an abstraction from his interests and began doing field research. Realizing how much he enjoyed a more hands-on environment, he shifted focus and spent most weekends doing biology research at the University field station in the Gulf of California.

After graduating from Arizona, he secured a graduate fellowship at Los Alamos National Laboratory, which hosts the central repository for all information related to HIV genetic sequencing. He worked for Dr. Bette Korber, one of the first investigators to fuse fields of computational biology, phylogenetics, and population genetics with HIV molecular research.

This role proved almost prophetic.

While at Los Alamos he was trained in writing software to analyze HIV sequence and, in a story that comes full circle, this is software that he uses today in his work at BSRI. (Before arriving at UCSF and the Gladstone Institutes for initial research appointments, Dr. Pillai completed his PhD at the University of California in San Diego, under the tutelage of Dr. Doug Richman and future UCSF collaborator, Dr. Joe Wong.)

BSRI, the research division of Blood Systems, the second biggest blood banking company in the country (behind only the Red Cross), helped develop a number of seminal viral infectious disease screening assays and testing algorithms. Hepatitis C, Hepatitis B, Zika, West Nile, and HIV diagnostics were largely developed or benchmarked at BSRI. It also has a number of different longstanding international collaborations, with investigators as far away as China, Brazil, and South Africa.

This allows Dr. Pillai to direct a lab focused on viral pathogenesis which is also the primary HIV focused lab at BSRI looking at samples from 1978 to present day. These samples are comprised of blood taken within the first month of HIV infection, allowing for unprecedented

exploration of the long-term evolution of HIV. By studying how the viral envelope evolves over time ? by discerning if it's more or less virulent, more or less adept at immune evasion ? researchers may be able to better identify how to suppress or eliminate it.

The wealth of data housed in BSRI repositories is key ? for any blood borne infectious disease, Dr. Pillai and his team can ask questions in regards to global molecular surveillance that nobody else in the world can.

When prompted about what he would consider the ultimate career success, Dr. Pillai notes that, "anything that has an appreciable positive impact on the welfare of those living with HIV, I find immensely gratifying. A cure is of course the ultimate goal, but extraordinarily difficult to prove within a reasonable time frame [given that someone would have to remain HIV free for the rest of their life post-cure treatment]."

How does a researcher with these kind of duties ? and those goals ? spend his spare time?



Dr. Satish Pillai in his lab at BSRI.

What little there of it there is, he spends with his wife and two daughters, with whom he lives in Marin County. He maintains his music skillset by playing with friends and groups he's

known since he first arrived in the Bay Area. One of his favorite hobbies he no longer has much time for, unfortunately, is skateboarding. Interestingly, his first experience as a grant writer can actually be traced back to this sport that he practiced everyday as a teenager in Massachusetts.

?I managed to convince a couple skateboarding companies to sponsor me ? meaning give me free stuff ? to skate the Boston Marathon course. I wrote them very convincing letters pleading my cause and they surprisingly were game. They sent me [and some friends] a bunch of gear and we started about fifteen minutes before the wheelchair race, which gave us plenty a head start,? he says, laughing.

While the trajectory of skateboarding sponsorship to HIV cure research would seem an unlikely course to chart, it seems right in line with the organic evolution of Dr. Pillai?s career.

Though he spends less time in the lab than in earlier years, the move into designing and monitoring experiments is ?much more satisfying,? he admitted. Asked if anything might make him leave the field of HIV, he says there is one thing ? ?Mick Jagger level rock stardom. Other than that, no, I?m very happy doing what I?m doing.?

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