

# Health sciences students help narrow knowledge gap in AIDS research

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A chapter contribution to the Encyclopedia of AIDS by two Simon Fraser University graduate students is helping researchers to expand their knowledge on HIV/AIDS.

Anh Le and Anika Shahid, who are both completing their Master of Science degrees in the Faculty of Health Sciences, recently made a contribution to an encyclopedic publication that indexes current research on HIV.

*The Encyclopedia of AIDS* represents the largest-scale attempt to date to put together a comprehensive, cross-disciplinary reference work on HIV. Edited by renowned HIV/AIDS experts Thomas Hope, Mario Stevenson and Douglas Richman, the project by SpringerLink Press will eventually feature more than four hundred entries when completed.

The SFU [health sciences](#) students' supervisor professor Zabrina Brumme provided them with the opportunity to take the lead on writing their chapter contribution, HIV-1 Mutational Escape from Host Immunity. It provides a comprehensive overview of how HIV-1 evolves to adapt to immune responses within the infected person.

"HIV-1 mutates very readily. It has ways of evading human immune responses, and adapts specifically to different human genetic traits," says Shahid who moved to Vancouver after completing her undergraduate degree in biotechnology in Pakistan. Her research focuses on identifying how the virus mutates and continues to replicate in the face of host

immune responses. "Understanding HIV-1's different mutational pathways will help us build a vaccine."

"It is important to determine which mutational pathways are commonly selected, so that effective vaccines can be designed," adds Le who is studying HIV-1 transmission and evolution at the molecular level. "But while we are learning lots about how the virus behaves, there are still knowledge gaps that need to be addressed. For instance, we have yet to figure out how to design a vaccine that potently protects against HIV-1 infection."

"The development of a vaccine or a cure for HIV-1 will require more than just biomedical research—it will require global collaboration across many disciplines. The Encyclopedia of AIDS will be an excellent resource for both new and experienced researchers, because it highlights the interdisciplinary nature of the challenges – and our solutions – moving forward.

Both Shahid and Le are grateful to Brumme for the chance to participate in such a major project alongside leading international HIV/AIDS researchers, clinicians and policy makers. "She has our best interests in mind, and is always encouraging us to explore opportunities that will make us better researchers," says Shahid.

"Getting to know the scientific literature and history of discovery in one's research area is an essential part of a young scientist's development," says Brumme, who was invited to make a contribution to the encyclopedia. "Giving Anh and Anika the opportunity to take the lead on writing the chapter allowed them to study their research area in depth and to synthesize their understanding into a valuable contribution to the field."

**More information:** Encyclopedia of AIDS: [at.sfu.ca/ITirum](http://at.sfu.ca/ITirum)

Provided by Simon Fraser University

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