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Shane Crotty receives AAI-BioLegend Herzenberg Award for B cell research

Crotty has advanced vaccine research and tested new strategies for stopping HIV, COVID-19

LA JOLLA, CA—La Jolla Institute for Immunology (LJI) Professor Shane Crotty, Ph.D., has been awarded the 2023 AAI-BioLegend Herzenberg Award from the American Association of Immunologists. The award recognizes Crotty's groundbreaking work in the field of B cell research, which has advanced our understanding of SARS-CoV-2 immunity, HIV vaccine strategies, and more.

"AAI is the preeminent immunology association in the United States, so to be honored by them is wonderful," says Crotty. "The previous awardees are a really impressive group of people, and I'm humbled to be in their company."

Crotty leads research in the LJI Center for Infectious Disease and Vaccine Research. His laboratory is dedicated to advancing vaccine and immune system research by shedding light on the roles of B cells. B cells are responsible for producing antibodies to fight disease. Crotty's work has shown how to boost antibody production through new vaccine ingredients and the timing of immunizations. This research has proven important for scientists working to target HIV, a virus notorious for evading antibody protection.

In a recent study, Crotty and his lab members showed that a "slow delivery, escalating dose" vaccination strategy can prompt B cells to spend months mutating and evolving their pathogen-fighting antibodies. Crotty and his lab demonstrated that this strategy could fuel the development of rare neutralizing antibodies against HIV. [Read more: The longer the bootcamp, the better the antibodies]

Crotty's expertise in B cell activity and memory proved especially important in 2020, as scientists worldwide worked to understand how immune cells might target SARS-CoV-2. Through the pandemic, Crotty has investigated how B cells respond to SARS-CoV-2 and how long B cells can remember the virus. This work earned praise from former NIAID Director Anthony Fauci, M.D., who called some of the Crotty Lab findings "exceedingly important to the field of immunogen design."

In May 2022, Crotty and study co-leaders LJI Professor Alessandro Sette, Dr.Biol.Sci., and LJI Research Assistant Professor Daniela Weiskopf, Ph.D., published the first head-to-head comparison of four COVID-19 vaccines. This research revealed the strength of T cell, B cell, and antibody responses over the six months following COVID-19 vaccination.

"B cells are amazing, and antibodies are amazing," says Crotty. "I'm very grateful to be able to contribute to our understanding of COVID-19 and other infectious diseases and vaccines."

The AAI-BioLegend Herzenberg Award is named for late immunologist and geneticist Leonard A. Herzenberg, Ph.D., who developed Fluorescence Activated Cell Sorter (FACS) technology. Thanks to FACS, researchers today can quickly detect and sort different types of immune cells to better understand the body's responses to diseases.

"Dr. Herzenberg was incredibly important in immunology," says Crotty. "It's really a joy to be associated with him in some way."

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