

Dr. Julie Overbaugh elected to National Academy of Sciences

HIV research revealed factors influencing transmission

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Dr. Julie Overbaugh
Photo by Robert Hood

Virologist **Dr. Julie Overbaugh**, who studies factors that shape HIV transmission, was elected to the **National Academy of Sciences**.

"Julie has spent decades leading the field in identifying the biology behind the body's immunologic response to the HIV virus, and clinical trials for HIV in Africa," said **Dr. Eric Holland**, who directs the Human Biology Division and Seattle Translational Tumor Research. "We are very proud to have her in the Human Biology Division and delighted that

she has been elected to the National Academy of Sciences."

Established by Congress in 1863, the NAS is charged to provide the nation with independent, objective advice on scientific matters. Academy members work to help inform public policy decisions through independent, objective analysis, and to encourage education and research.

"I have worked with an incredible team, both my lab group and my collaborators, and the science recognized by this award reflects our collective work and the collegiality and common purpose of the team," said Overbaugh, who holds the Endowed Chair for Graduate Education at the Hutch and is a renowned **scientific mentor**.

Overbaugh is one of 120 new members, including a record number of women, elected by their peers in recognition of their "distinguished and continuing achievements in research," according to an April 26 **NAS press release** announcing the new honorees.

"I am really happy to see gender balance in this year's elected members and hope this signals a future trend," Overbaugh said. "In my field, HIV, which is a very large field, there have only been a couple of women elected — hopefully, there will be more in the future."

Understanding what shapes HIV transmission

Many factors shape how readily HIV transmits from person to person, and Overbaugh studies the problem in some of the world's most vulnerable people, including commercial sex workers and infants born to mothers with HIV. Starting in the early 1990s, Overbaugh teamed up with Kenyan scientists to conduct studies aimed at understanding what hinders — or helps — the virus to jump from person to person. This research integrated her fundamental virology approach with studies of groups of people at special risk for HIV transmission.

“When we began trying to bridge basic science research with population studies, we were outliers,” she recalled. “I think election to the NAS also recognizes this approach in a nice way.”

Prior to the development of antiretroviral drugs, the team demonstrated that HIV can be transmitted from infected mothers to uninfected infants through breast milk. This collaboration with Kenyan researchers, which celebrated its **25th anniversary** in 2018, has also fostered a longstanding cohort of commercial sex workers who generously help scientists better understand HIV risk and transmission.

Overbaugh’s work also highlighted how factors like injectable hormonal contraceptives and certain sexually transmitted infections can influence risk of HIV infection and revealed aspects of **maternal anti-HIV immunity that reduce transmission** from mother to child. Her research in infants could help inform HIV vaccine design by showing how potent immune proteins that protect against HIV infection, called neutralizing antibodies, can be **created quickly after infection**.

“As truly remarkable as her scientific discoveries and accomplishments are, what I am in awe of is her mentorship and collegiality. It is obvious that she is deeply invested in the success of her trainees and junior colleagues; everyone who has trained with her is now better off for the experience,” said evolutionary geneticist **Dr. Harmit Malik**, another Hutch NAS member who joined Overbaugh’s peers and mentees in celebrating her new membership.

Overbaugh is the **12th Hutch faculty member** elected to the Academy, including **Malik** in 2019, **Dr. James Priess** in 2017 and **Dr. Sue Biggins** in 2015. Fred Hutch NAS members also include Nobel Prize winners Drs. Linda Buck, Lee Hartwell and E. Donnall Thomas.

QUESTIONS OR COMMENTS?



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