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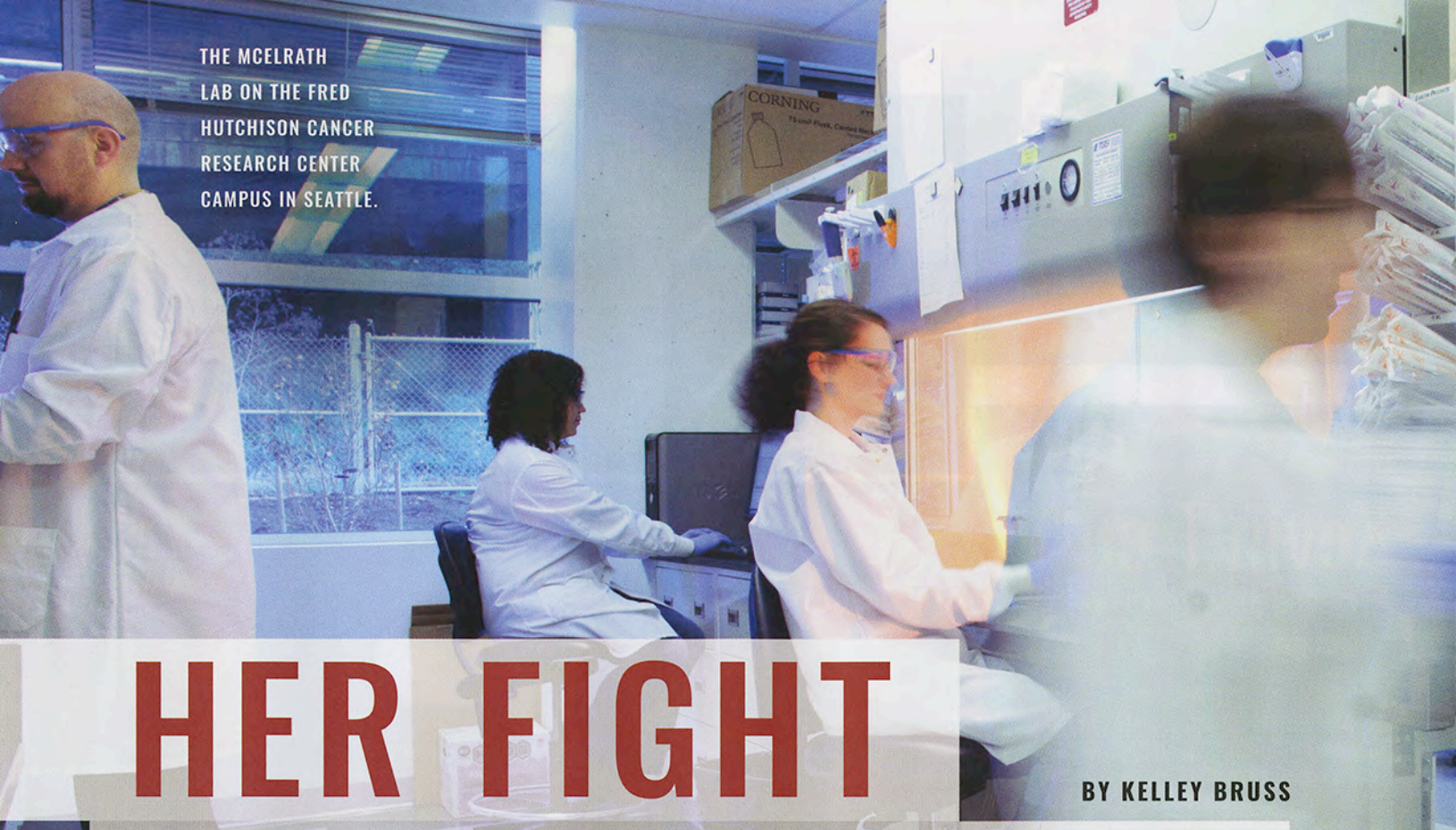

THE MCELRATH LAB ON THE FRED HUTCHISON CANCER RESEARCH CENTER CAMPUS IN SEATTLE.

HER FIGHT TO SAVE LIVES

BY KELLEY BRUSS

Julie McElrath '73 had just finished medical school in Charleston, South Carolina, when she met the problem that would consume her career.

"My first patient as an intern was put in the intensive care unit, and we didn't know what he had," McElrath says. "It left a pretty big impression because we didn't really know how to treat him." And she couldn't accept that.

The patient was suffering from pneumonia, but there was clearly some underlying issue, one that eluded not only the intern but the other doctors on the team. That mystery illness, McElrath now knows, was AIDS. In the years that followed, it would come to mean a death sentence, bringing with it panic and stigma and killing tens of millions of people globally.

"It's a problem that's challenged me for all these years," McElrath says. She has spent her career fighting HIV/AIDS, focusing especially on the pursuit of an HIV vaccine.

"I still feel as challenged by the problem as I did when I first started working on it," she says. "I'm hoping we're laying the foundation for it to finally go away."

Since 1996, McElrath has been director of the Vaccine and Infectious Disease Division at the Fred Hutchinson Cancer Research Center in Seattle, Washington.

"What Julie has helped to define is that there can be really strong science that can drive forward the development of an HIV vaccine, something that's incredibly complicated and is the big scientific puzzle of our time," says Jared Baeten, vice chair of the Department of Global Health at the University of Washington.

McElrath, he says, is a globally renowned researcher, a scientist immersed in the world's key conversations about how HIV works, how it affects a patient's immune system and how to create a vaccine that will protect against it.

JULIE MCELRATH '73 HAS DEVOTED HER CAREER TO FIGHTING HIV/AIDS.

"She is admired for being an example," Baeten says, "an example of how to do really hard work, really well, and at the same time be effortless and positive all the way along."

FURMAN BEGINNINGS

McElrath grew up in Greer, South Carolina, about 30 minutes from Furman University. When she started looking at colleges, Furman was an obvious contender because her grandfather, uncle and sister are alumni. But it wasn't the only school she considered.

"Furman gave me a scholarship and made it easier for me financially," she says. Decision made. She entered college planning to study math, which she loved. But she ended up wanting to pursue something with a stronger connection to human health. She found that connection in the biology program.

"The science education there was phenomenal," she says. "It was open, in terms of different views about people and perspectives. There was freedom to explore."

While she'd made the switch to science and had patients in mind, she still thought research was the best avenue for her skills.

"I didn't like needles, honestly. That was my problem," she says with a laugh. So when she graduated from Furman, she went to the Medical University of South Carolina for a Ph.D. in pathology.

But when she realized her first two years of work aligned almost completely with the medical students' work, she got over her needles issue and moved directly from the Ph.D. program into the M.D. program. She completed the two degrees in 1978 and 1980, respectively.

"I liked both the lab and the patients," she says.

AIDS EXPLOSION

Following her medical residency in Charleston – where she met that patient with the then-mysterious illness – McElrath took a fellowship in infectious disease in New York, unknowingly placing herself in a "hot seat" of the AIDS epidemic in the United States.

Public health officials began using the designation AIDS – for acquired immunodeficiency syndrome – in 1982 and identified HIV as its source the following year.

"By then, I had seen a lot of people die," McElrath says. She couldn't bear standing in front of an AIDS patient and offering nothing — no treatment, no hope. "What can I tell this person that we're doing to try to make things better?" Among the many problems HIV/AIDS presented, one was the question of why some patients did so much better than others and why some people at high risk managed to escape infection.

"We were trying to understand how all of this was taking place ... how HIV was destroying the T-cells and what action we could take to slow that down," McElrath says.

Julie McElrath '73 speaks at the opening ceremony of the Cape Town Lab in Cape Town, South Africa.

GROUNDWORK FOR THE FUTURE

McElrath moved to Seattle after marrying Ken Stuart, founder of the Center for Global Infectious Disease Research. She took a job at the University of Washington, directing the school's new AIDS clinic at the county hospital.

In 1996, she moved to the cancer center. Fred Hutch, as it is fondly referred to, is dedicated to alleviating and curing cancer and related diseases. McElrath's work with immuno-compromised AIDS patients blends well with the center's work with immuno-compromised cancer patients.

"My goal is to try, in my scientific lifetime, to find a way that can give a person long-lived immunity," she says. "I'd like to see a vaccine be the number-one priority. That's really the best hope, I think."

She works both in the laboratory and a research clinic, conducting vaccine trials and studies.

"I believe what drives her most is a curiosity," says Leo Stamatatos, who works with McElrath in the Vaccine and Infectious Disease Division at Fred Hutch.

"She wants to know how things work or why things don't work."

He says McElrath is a global leader in clinical immunology.

"For a lot of the work she does, there are no solutions to this problem, so in many ways we have to invent things," he says. "And that's what her lab is known for."

While the clinical studies are taking place in the United States, McElrath is focused on a solution that will serve the world. She is keenly aware of the ongoing intensity of the epidemic in sub-Saharan Africa and of the disenfranchised people who are at greatest risk — disempowered women, babies whose mothers are infected, drug users, and men who have sex with men.

"Our interest is to find a vaccine for the world," she says.

McElrath says the open-minded pursuit of knowledge and mental flexibility that Furman taught her will be key for the next generation of scientists.

"The science is changing so quickly and you really have to keep up with it," she says. "You've got to have the energy to keep up with what's new and where it can take you."

She says academic agility is crucial as research and developments open the possibilities of change in students' fields of study.

"Don't get locked in on anything until you're really sure," she says.

A Furman education facilitates that process.

"Furman gave me the opportunity to really

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get focused," McElrath says. "It really gave me the framework to ask questions and to think about something that was important to the world."

For her contributions to the world, McElrath was honored at Furman's 2019 Bell Tower Ball with the Carl F. Kohrt Distinguished Alumni Award.

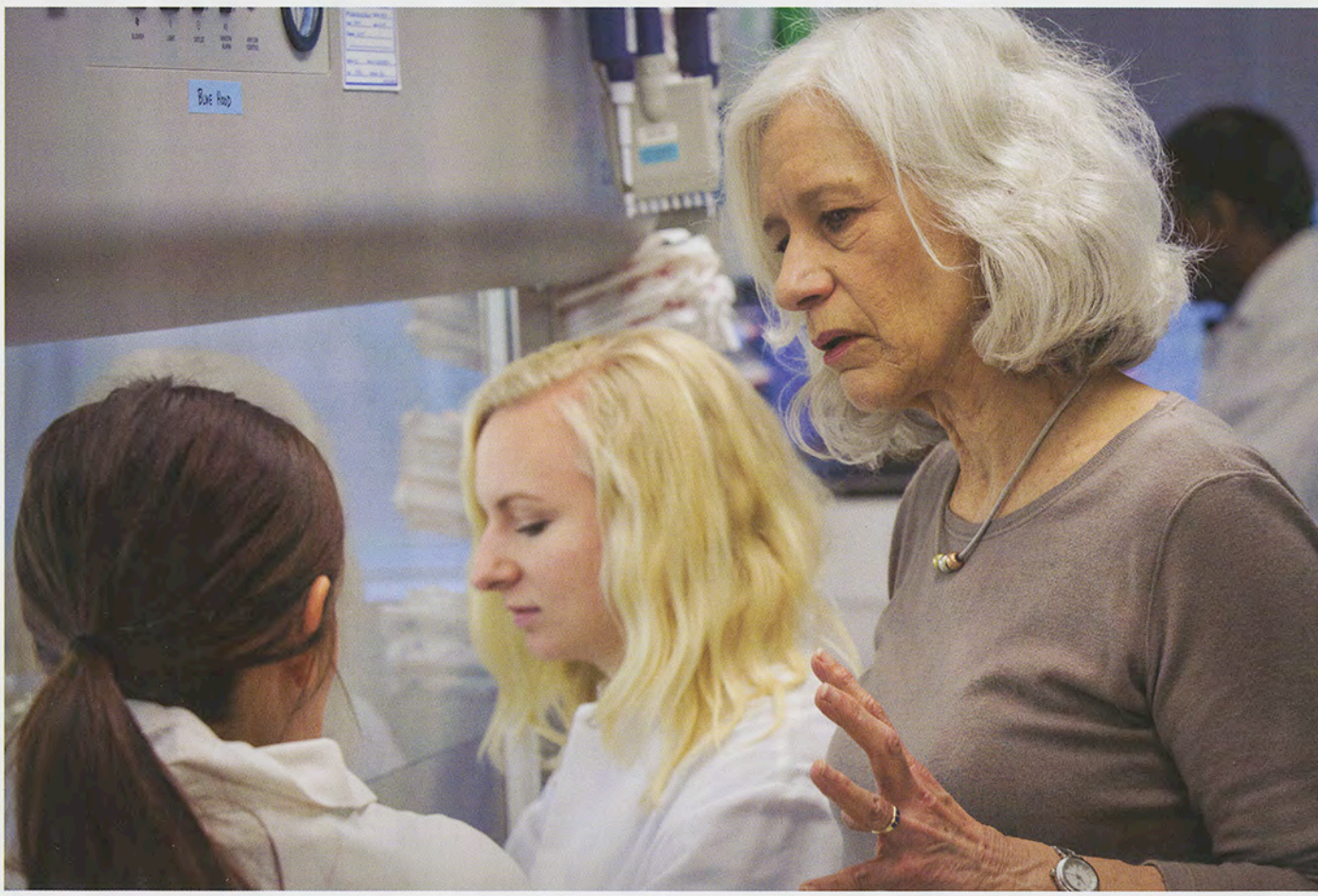
Cameron Oswald, McElrath's niece and a physician assistant at Ralph H. Johnson VA Medical Center in Charleston, South Carolina, says McElrath is committed to the long-term success of the work.

"Her objective is to help continue the pipeline of researchers in the HIV field," Oswald says.

Figuring out HIV/AIDS has been McElrath's life, but she is more committed to the solution than to her own role in it.

"She has had this pivotal role in virtually every important HIV vaccine study that's ever been done, often without getting all the limelight," says Baeten, the University of Washington professor.

"But doing the right stuff in the background and setting up all the right systems and all the right people and giving enough of the sunshine and the attention to everybody else to make sure that all the work moves forward — the right things happen in the end." ✦



McElrath in her lab on the Fred Hutchinson Cancer Research Center campus in Seattle.