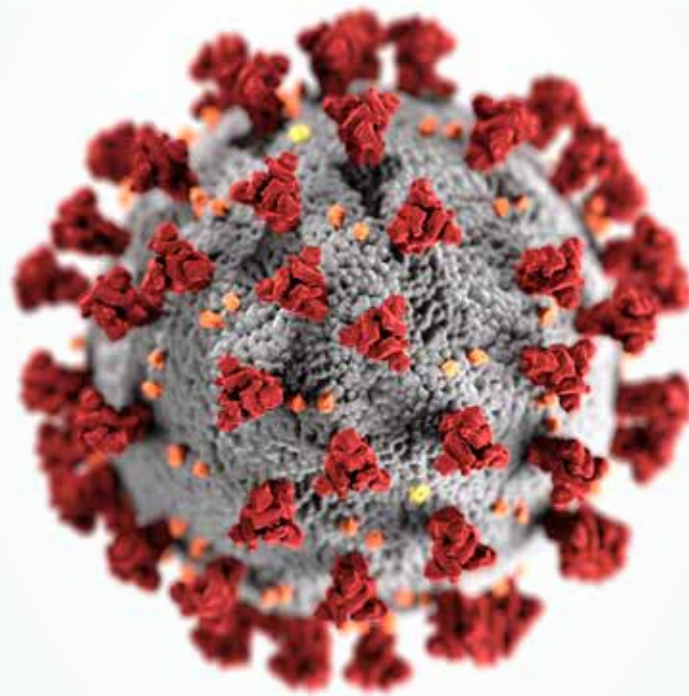


*The* **CENTER** *for*  
**VACCINE DEVELOPMENT**





“SCIENCE BRINGS MEN  
NEARER TO GOD.”

—  
Louis Pasteur

Nothing exemplifies the mission of Saint Louis University—the pursuit of truth for the greater glory of God and for the service of humanity—quite like the Center for Vaccine Development.

And nothing demonstrates the need for vaccine research better than the COVID-19 pandemic.

Worldwide, vaccinations reduce or eliminate disease, improve primary care, lower childhood mortality and end—or prevent—a crippling global pandemic.

*Novel Coronavirus SARS-CoV-2  
Photo from National Institute  
of Allergy and Infectious  
Diseases/NIH*

## Vaccinations are life-changing.

As a national leader in vaccine research and development, SLU’s Center for Vaccine Development is exploring new frontiers in this essential medical science.

**The results benefit all of humanity.**

“SLU’S CENTER FOR VACCINE DEVELOPMENT IS INTERNATIONALLY RECOGNIZED AS A LEADER IN THE DEVELOPMENT OF VACCINES—FROM THE BENCH TO THE CLINIC. WE ARE PROUD TO BE PART OF AN UNPARALLELED NATIONAL INSTITUTES OF HEALTH CONSORTIUM CAPABLE OF URGENTLY DEVELOPING VACCINES TO PROTECT THE U.S. PUBLIC AND THE WORLD.”

**Daniel Hoft, M.D., Ph.D.**

*Director, Division of Infectious Diseases, Allergy and Immunology*

*Director, Center for Vaccine Development*

*Director, Stephen Peiper & Zi-Xuan Wang Institute for Vaccine Science and Policy*

*Adorjan Endowed Chair of Infectious Diseases and Immunology*

*Professor, Division of Infectious Diseases, Allergy and Immunology*



*Photo by Paradigm*

## Three Decades of Vaccine Leadership

For over 30 years, the Saint Louis University Center for Vaccine Development (CVD) has been at the forefront of vaccine research and development for infectious diseases that threaten human health. Founded in 1989, the Center’s work spans the full spectrum of the vaccine development process, from basic immunology research to clinical testing of candidate vaccines.

**Led by Director Daniel Hoft, M.D., Ph.D.**, the Center studies infectious diseases and drugs, develops new or improves existing vaccines, and provides rapid-response capability in the event of a public health crisis. CVD investigators conduct cutting-edge bench-to-bedside research to thwart numerous infectious diseases that span the spectrum of human pathogens, including tuberculosis, malaria, COVID-19 and dengue.

As one of just 10 federally funded Vaccine and Treatment Evaluation Units in the nation, the Center conducts phase 1 through 4 vaccine and treatment trials, including clinical studies in collaboration with industry partners. Since August 2020, the Center has participated in the global search for a safe, effective vaccine for COVID-19, conducting phase 1-3 clinical trials, including both the Moderna and Janssen vaccines.


# At the Forefront of Public Health

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The Center for Vaccine Development team comprises an elite group of infectious disease specialists who are at the vanguard of worldwide vaccine development. Their expertise encompasses biodefense, emerging infectious diseases such as Ebola and Zika viruses, seasonal and pandemic influenza, and other viral, bacterial and parasitic infections. Their work helps lay the foundation for future vaccine design, delivery and treatment regimens.

**Research conducted at the CVD has placed it at the forefront of protecting the public from bioterrorism and other emergent threats.**

By working with federal agencies such as the National Institutes of Health and Walter Reed Army Medical Institute of Research, private foundations such as The Gates Foundation, and industry partners such as FluGen, Vaxine, EpiVax, hVIVO, Gritstone Bio and Biomerieux, SLU's researchers have supported the development and licensure of multiple vaccines that are currently in clinical use.



THE CENTER HAS CONDUCTED  
MORE THAN **320 STUDIES**  
WITH APPROXIMATELY  
**20,000 VOLUNTEERS**  
OVER THE **LAST 30 YEARS.**

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*The clinical development of the intranasal FluMist vaccine is one of many contributions that SLU's Center for Vaccine Development has made to the study of infectious diseases and vaccines.*

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*Photo from Shutterstock*

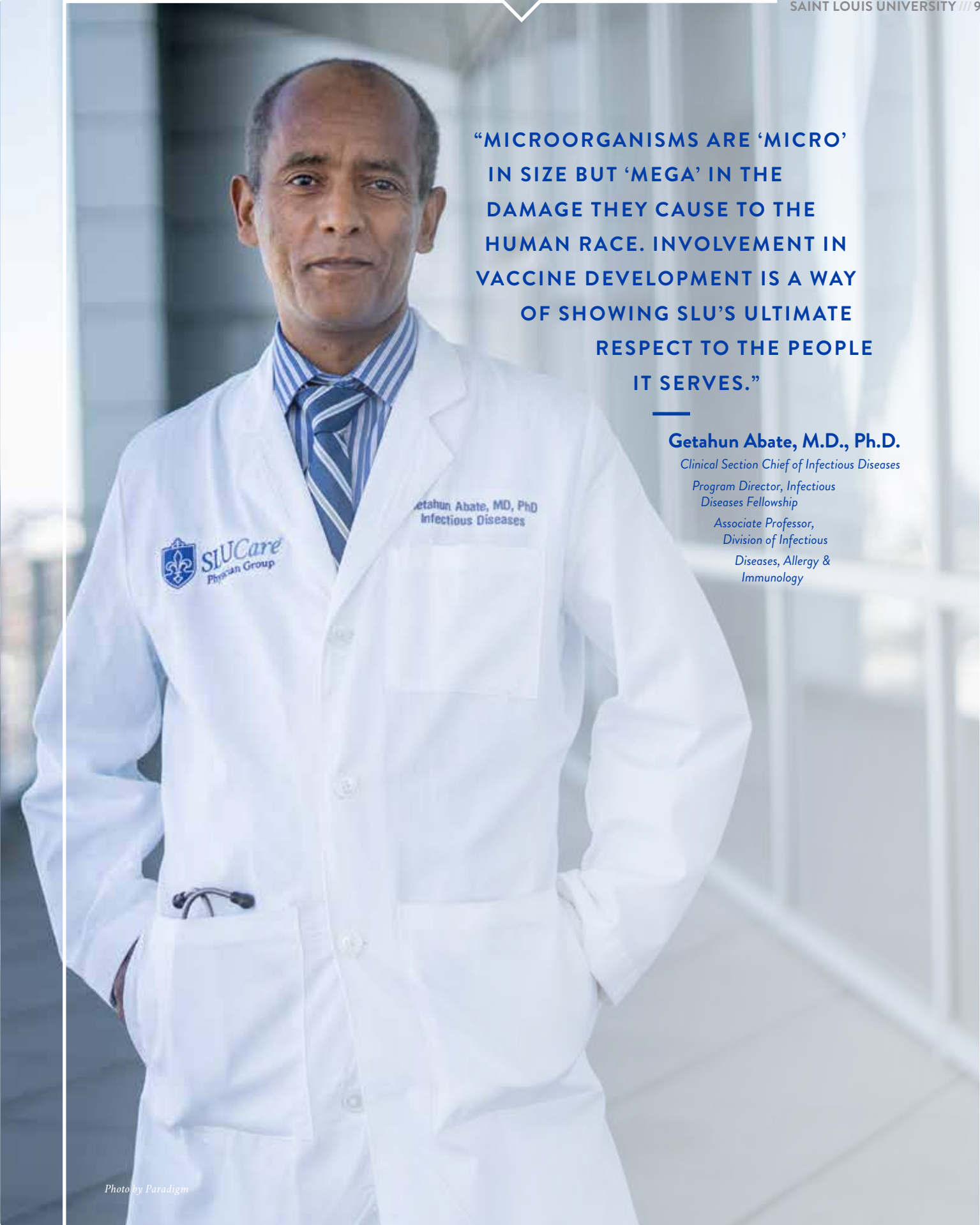


**“PEOPLE TRUST SLU BECAUSE THEY KNOW SAINT LOUIS UNIVERSITY’S MISSION AND THAT WE’RE HERE TO SERVE PEOPLE. THE GOAL IS TO PROTECT THE GLOBE.”**

**Sharon Frey, M.D.**

*Clinical Director, Center for Vaccine Development  
Kinsella Endowed Chair in Internal Medicine  
Professor, Associate Director of Clinical Research,  
Division of Infectious Diseases, Allergy and Immunology*

*Photo by Paradigm*



**“MICROORGANISMS ARE ‘MICRO’ IN SIZE BUT ‘MEGA’ IN THE DAMAGE THEY CAUSE TO THE HUMAN RACE. INVOLVEMENT IN VACCINE DEVELOPMENT IS A WAY OF SHOWING SLU’S ULTIMATE RESPECT TO THE PEOPLE IT SERVES.”**

**Getahun Abate, M.D., Ph.D.**

*Clinical Section Chief of Infectious Diseases  
Program Director, Infectious Diseases Fellowship  
Associate Professor,  
Division of Infectious Diseases, Allergy & Immunology*

*Photo by Paradigm*

*Doisy Research Center*

## State-of-the-Art Facilities

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The Center's 15 primary investigators make use of more than 7,000 square feet of research and clinical space that includes an eight-room clinic, BSL3 spaces for in vitro and preclinical research, and a state-of-the-art flow cytometry core one floor below the Center's laboratories.

**Additionally, the CVD directs the Extended Stay Research Unit (ESRU)**, an innovative, 17,000-square-foot inpatient airborne containment facility that safely houses study participants. The 23-room ESRU opened in 2018 and allows for human challenge studies in which volunteers are exposed to certain viruses while researchers test novel treatments, collect samples and better understand the body's immune response; it is one of only a handful of such units worldwide. With its sophisticated HVAC system for aerosol containment, the new facility is ideal for conducting research for a universal influenza vaccine and other respiratory illnesses. In 2020, the ESRU was renovated to safely quarantine COVID-19-positive volunteers and to monitor their recovery progress.

# A Tradition of Discovery

SINCE IT WAS FOUNDED IN 1989, SLU'S CENTER FOR VACCINE DEVELOPMENT HAS MADE CONSIDERABLE ADVANCES TO THE STUDY OF INFECTIOUS DISEASES. THEY HAVE INCLUDED:



## INFLUENZA

The CVD has conducted numerous trials of vaccines and adjuvants for influenza, including having a prominent role in H1N1, H5N1 and H7N9 pandemic flu vaccine testing. Five pandemic flu vaccine projects are currently underway. In addition, Dr. Hoft's lab is working on a universal influenza vaccine strategy with NIH support.



## ZIKA

SLU is one of three sites conducting phase 1 trials of a Zika vaccine developed by Walter Reed Army Institute of Research. Additionally, the CVD is identifying T cell epitopes within the Zika genome for development of improved vaccines.



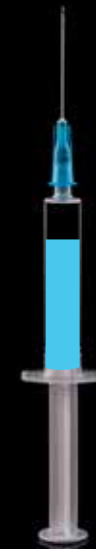
## TUBERCULOSIS

The CVD has conducted 20 human trials focused on improving existing TB vaccines, including first-in-human studies and multiple studies comparing routes of BCG administration. In addition, SLU is developing a unique challenge model as a surrogate method of measuring vaccine efficacy.



## SMALLPOX

CVD studies illustrated that one-tenth the normal Dryvax dose induced equivalent immunity, expanding the National Strategic Stockpile doses tenfold. Other studies resulted in the addition of second-generation and third-generation vaccines to the stockpile.



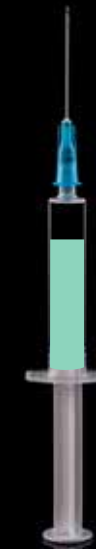
## DENGUE

SLU conducted the first human trial of DENVax, which safely induced protective antibodies against more than three dengue virus serotypes in volunteers.



## HEPATITIS-C

The CVD studied the safety and effectiveness of Chiron's investigational hepatitis C vaccine in phase 1 and phase 2 clinical trials and continues to make fundamental discoveries important for developing optimal HCV vaccines.



## COVID-19

As a member of the COVID-19 Prevention Network organized by the National Institute of Allergy and Infectious Diseases, the CVD is conducting phase 3 vaccine trials. Additionally, the Center is conducting a phase 1 clinical trial with a second-generation vaccine against SARS-CoV-2 developed by Gritstone Bio. SLU was also one of the first sites to participate in the remdesivir clinical trials for hospitalized COVID-19 patients, and continues to work to identify a more potent, efficacious treatment regimen to combat severe disease.



## ANTHRAX

To identify an anthrax vaccine associated with better protective effects, an improved safety profile and a simpler dosing schedule, the CVD completed phase 1 and phase 2 trials with an investigational anthrax vaccine developed by VaxGen.

# An Ongoing Challenge

Though considerable progress has been made, the journey is long when it comes to vaccine development. “Working with infectious diseases is a unique challenge,” says Dr. Hoft. “You don’t know what’s going to happen next year. How can you plan for the unknown? But fortunately we now have the technology available to more rapidly develop vaccines.”

As demonstrated during the COVID-19 pandemic, the Center for Vaccine Development is a powerful tool in the ability to combat future challenges to public health—and advance medical science. “Vaccines will continue to be important for protection of the world against infectious diseases,” says Dr. Hoft. “At the same time, there will be continued growth in developing related immunotherapies that manipulate the human immune system to prevent cancer and treat autoimmune and allergic diseases. We have incredible potential to revolutionize many fields of medicine.”

With the innovative research and development conducted at the Center, it’s only a matter of time until the next discovery, the next vaccine or the next breakthrough that could potentially save the lives of millions.

**It is essential that its work continue.**



“HISTORY TELLS US [COVID-19] WILL NOT BE THE LAST PANDEMIC, AND EPIDEMICS ARE A FACT OF LIFE.”

**Dr. General Tedros Adhanom Ghebreyesus**  
*Director-General, World Health Organization*



**“THE BIGGER GOAL IS TO EXPAND. WE NEED PEOPLE TO DO THE RESEARCH, BUT WE ALSO NEED PHILANTHROPIC DONORS TO HELP US BUILD THIS RESEARCH SO WE CAN REACH MORE PEOPLE.”**

**Dr. Hoft**

*Photo by Paradigm*



**“MORE RESEARCH, MORE RESEARCH DOLLARS AND, ABOVE ALL ELSE, MORE ADVANCES TO PUBLIC HEALTH. THAT’S THE END GOAL TO ALL OF THIS: TO PREVENT HUMAN DISEASE AND SUFFERING. I THINK SLU IS ON AN UPWARD TRAJECTORY IN EXPANDING ITS RESEARCH STRENGTHS AND ITS POTENTIAL TO CONTRIBUTE TO SOCIETY.”**

**Sarah George, M.D.**

*Principal Investigator, Center for Vaccine Development  
Associate Professor, Infectious Diseases, Allergy and Immunology*

*Photo by Paradigm*



Photo by Paradigm

# Ensuring Future Discoveries: The Stephen Peiper and Zi-Xuan Wang Institute for Vaccine Science and Policy

After decades at the forefront of vaccine development, the Center's next chapter will see it expand into a new center of excellence at SLU: The Stephen C. Peiper and Zi-Xuan Wang Institute for Vaccine Science and Policy.

**Established in 2020 with a gift from Stephen C. Peiper and Zi-Xuan Wang, the Institute is an interdisciplinary hub for vaccine research at SLU.** With the Center for Vaccine Development's success as its foundation, the Institute will unite the strengths of the University's vaccine science, public health and health law programs, bringing together the expertise of more than 35 faculty from SLU's School of Medicine, College for Public Health and Social Justice, College of Arts and Sciences, and School of Law to address complex global challenges to human health.

# How can your gift help?

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Now is a crucial time for the Center for Vaccine Development, with further investment necessary to secure its continued leadership in vaccine science for decades to come.

**Saint Louis University seeks to raise \$30 million for its Center for Vaccine Development.** Your gift will help enable the Center's ongoing discoveries by expanding the depth and breadth of its research, securing future leadership, increasing its specialized team of physician scientists, and ensuring its infrastructure and equipment remain state-of-the-art.

Donor support will allow the CVD to add a new computational biology team, as well as the infrastructure and personnel to support interdisciplinary omics experimentation, pilot projects and collaborative trainee awards, programs for post-doctoral fellows and visiting scholars, workshops and symposiums. Importantly, increased funding will also support the recruitment of new physician scientists who will become future CVD leaders, enabling the smooth transition from one generation of vaccine research leadership to the next.



Photo by Paradigm



# About Saint Louis University

Founded in 1818 as the first university west of the Mississippi River, Saint Louis University is one of the nation's oldest and most prestigious Catholic institutions.

Research is a central component of both the undergraduate and graduate experience at SLU. From day one, the student experience at SLU is enriched by a vibrant research community that creates pathways for real change.

**The University is steadfast in promoting teaching, learning and research that exemplify discovery, transformative outcomes and engaged citizenship in a global society.** Informed by our Jesuit mission, our researchers are motivated by a concern for the most vulnerable members of our society. From the discovery of the life-saving properties of vitamin K to more recent breakthroughs at our federally funded Center for Vaccine Development, all of our research is defined by compassion, ambition and innovation.

The University's endowment is \$1.25 billion and its current fundraising campaign, Accelerating Excellence, has raised more than \$470 million of its \$500 million goal.

**If you are inspired to support the  
Center for Vaccine Development at  
Saint Louis University, please contact:**

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