








integrated Translational Health Research Institute of Virginia

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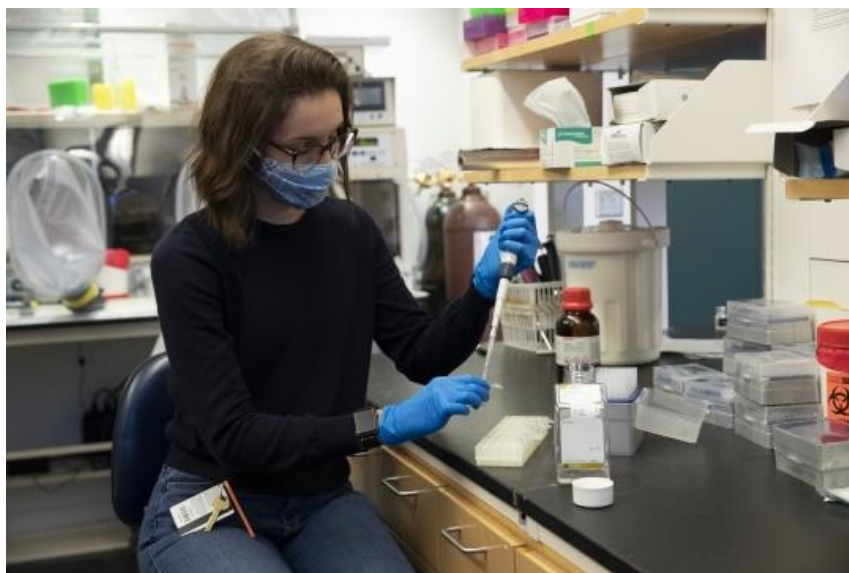
iTHRIV Supports Novel COVID Therapy Research

The ongoing efforts to combat the COVID-19 pandemic have led to groundbreaking research that has resulted in life-saving therapies. A problem as large as COVID-19 requires a dynamic response. The National Institutes of Health funded [Integrated Translational Health Research Institute of Virginia \(iTHRIV\)](#) facilitates research teams tackling system-wide scientific and operational problems in clinical and translational research. One such team, led by [Dr. William Petri and Dr. Alexandra Donlan](#), is studying the body's immune response to COVID-19. The team hopes that by understanding the immune response to the virus, they can then focus on identifying potential therapies.

Currently, COVID-19 is a primary focus for the immunology and infectious disease field, as people aim to learn more about the host response to infection. Though tragic, the pandemic has provided an opportunity for researchers to explore novel therapies to treat patients and ultimately better understand the virus. Donlan explains that she has “always been fascinated by infectious diseases, new emerging pathogens, and the unique individual responses to infection.” Her colleague Petri is driven by a “desire to personally be part of the solution.”

Large problems, like COVID-19, require a collaborative, team-based approach. Sandra Burks Program Director for iTHRIV, clarifies that “team science happens when people with training and expertise in different areas come together to integrate their gifts and abilities to address a single research initiative. It's messy, challenging, and extremely rewarding!”

iTHRIV supported Petri and Donlan's efforts in several ways. Johanna Loomba, Director of the Informatics Core at iTHRIV, supported research team access to the [National COVID Cohort Collaborative \(N3C\)](#) and developed code to extract the relevant data set for analysis. Dr. Sarah Ratcliffe, Project Lead for Research Methods and Co-Lead for



BERD¹ at iTHRIV used this derived data to assist Donlan with early exploratory analyses on the effects of Interleuken 13 (IL-13) in an immune response. iTHRIV's efforts paid off; Donlan explains “the observation that IL-13 may be promoting disease severity highlights that blocking this pathway in humans may provide clinical benefits.”

The N3C dataset has grown substantially since that first analysis; it now contains medical record data from 8.4 million patients. iTHRIV is working to refresh the IL-13 data analysis for Petri's team.

In the lungs, IL-13 is a protein that is the central mediator of allergic asthma. IL-13 is influential in inflammation, mucus secretion, and airway responses. The team decided to focus on this protein after Donlan made a breakthrough discovery that IL-13 is associated with acute hypoxic respiratory failure in COVID-19. “One mechanism by which IL-13 causes respiratory failure is by inducing the production of a sugar polymer called hyaluronan in the lungs. We hypothesize that inhibiting IL-13 signaling will be therapeutically beneficial” explains Petri. “Based off of Dr. Donlan's research, we propose that inhibiting IL-13, and the IL-13-induced production of hyaluronan, would be a new, effective approach to reducing the incidence or severity of acute hypoxic respiratory failure in COVID-19 disease.”

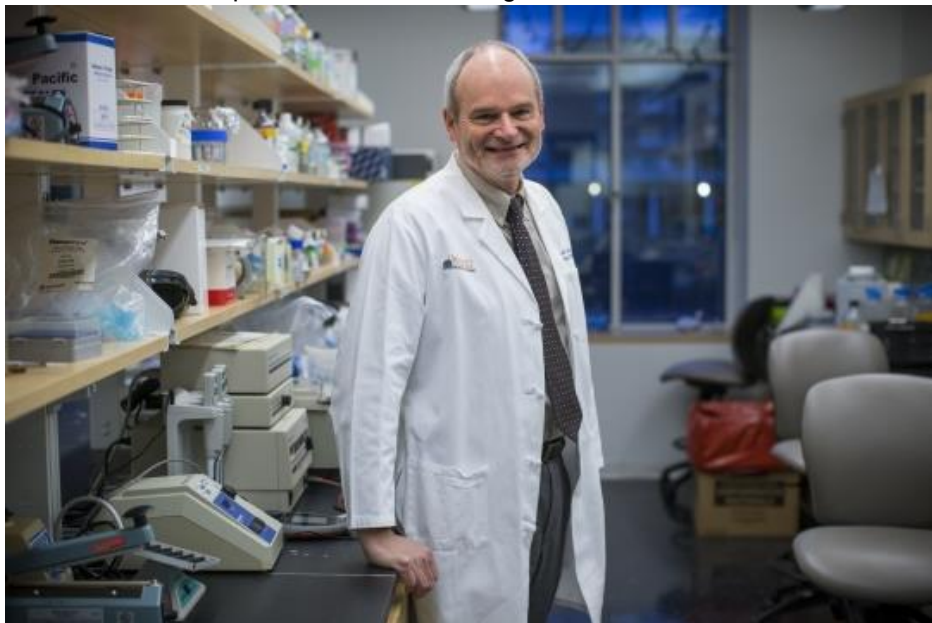
Using Donlan's results, Petri designed a clinical trial for which iTHRIV Scholar alum, [Dr. Jeff Sturek](#), is a lead clinical investigator. As a pulmonary critical care physician, Sturek's expertise is a natural fit. Petri's trial was approved by the COVID Research Prioritization Committee (CRPC) at UVA which reviews and approves all COVID clinical research. Several iTHRIV team members serve on the CRPC, working with researchers to help manage limited resources for human subjects research during the pandemic. Prior to Petri's trial opening the enrollment at UVA, the team utilized a

¹ Biostatistics, Epidemiology, and Research Design (BERD)

[Community Engagement Studio](#) to obtain expert feedback from community members about the study design. As of October, the clinical trial phase is still on-going.

In the midst of the groundbreaking research, the team remains cautiously optimistic. Donlan hopes her work and translational research in general will “help the public understand why a treatment may work and that we can trust a treatment to be beneficial and safe. We want patients to feel more comfortable with and informed about the care they receive.” Petri, for his part, is touched to be a mentor and colleague to Donlan, noting that “supporting the career development of an extraordinarily gifted researcher such as Dr. Donlan, will have a short-term scientific gain, but it is a much more profound honor to support and facilitate her development as an immunologist.”

iTHRIV believes that healthcare solutions are often hidden in underutilized data. Our overall goal is to support clinical translational research for the benefit of the diverse residents of Virginia. We are proud to have supported Petri and Donlan’s study from early data exploration all the way through the clinical trials phase. iTHRIV is ready to assist translational health research teams in a variety of ways including data access, study design, and seed funding. To find out more please visit iTHRIV.org.



Inova to Host Third Annual Healthcare Disparities Conference

The title for this year's Annual Healthcare Disparities Conference is A Call for Transformation: Impactful Strategies for Sustainable Change.

by: Anne-Marie O'Brien, PhD, WHNP-BC, Nursing Research Scientist, Inova and Leigh Guarinello, MPH, Community Relations Director, Inova

The virtual conference was held on Tuesday, October 5th, 2021, you view the conference here:
https://www.youtube.com/watch?v=IBtd8z_8x88

Virginia Tech Celebrates Fralin Biomedical Research Institute at VTC Addition Grand Opening

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Guests earlier had settled beneath a tent on the Riverside Circle to hear remarks before touring the state-of-the-art research facilities and meeting scientists who work there. The \$90-million, 139,000-square-foot expansion enables the institute to double its workforce by 2027.

During the ceremony, Virginia Tech's President Tim Sands underscored the importance of biomedical research – especially now, in the wake of a global pandemic.

“As the past several months have demonstrated, the nexus of health, science, and technology is the place where humanity confronts the challenges of the future,” Sands said.

Michael Friedlander, Virginia Tech's vice president for health sciences and technology and the Fralin Biomedical Research Institute's founding executive director, echoed Sands and emphasized the powerful public-private partnerships that have led to the institute's rapid growth and success.

“This effort demonstrates the commitment of the Commonwealth of Virginia, Virginia Tech, and Carilion Clinic to discovery in the service of health,” Friedlander said. “I am certain that even beyond the timeframe of the careers and lives of those of us who have the privilege of serving in this enterprise today, what you have all built here will continue to provide life changing discoveries in the service of health and a catalyst for the economic vitality of this region for decades to come.”



Noting the transformation of the region's economy and Roanoke's growing position as a hub for the biosciences, Carilion Clinic President and CEO Nancy Howell Agee said, “One of my favorite proverbs describes 'collaboration' well: 'If you want to go fast, go alone. If you want to go far, go together.' Well, we've gone far and fast. Just look at what we've accomplished.”

Watching the proceedings was Heywood Fralin, whose family donated a [record \\$50-million gift](#) to name the Fralin Biomedical Research Institute at VTC in

2018. He helped spur the institute's rapid progress. Four years have passed since the [groundbreaking ceremony](#), which followed a 2016 [appropriation of \\$45 million](#) by the Virginia General Assembly to support the new development.

"It truly is remarkable how this place has transformed in the past decade," said Roanoke Vice Mayor Patricia White-Boyd.

Founded in 2010, the research institute currently employs more than 400 faculty, staff and students, including 37 faculty-led research teams addressing addiction, brain health and disease, cardiovascular disease, cancer, children's health, infectious disease, and neurorehabilitation. These research teams have cumulatively published more than 1,000 discoveries in leading scientific journals and currently hold \$140 million in active research grants and contracts, with over \$200 million in grants awarded.

Eileen Filler-Corn, speaker of the Virginia House of Delegates, expressed gratitude for the institute's "incredible scientists" and their contributions to research benefitting families in Virginia – particularly in addressing substance use disorders and mental health.

"On behalf of the Commonwealth of Virginia, I want to express how grateful I am to the incredible scientists and all of you who have contributed to the research that has already done so much to help Virginia families, especially during such a difficult time for mental health," said Filler-Corn, who mentioned state priorities for mental health and substance services. "I know I am only preaching to the choir – the Fralin [Biomedical Research] Institute's innovations in the development and implementation of addiction treatment have been critical as we navigate this public health crisis."

Reiterating the importance of brain and mental health research, Walter Koroshetz, director of the National Institute of Neurological Disorders and Stroke, part of the National Institutes of Health, emphasized the importance of translational health research operations like the Fralin Biomedical Research Institute during his video address to the outdoor audience.

The research institute's faculty currently provide training and mentorship to 130 Virginia Tech graduate and medical students conducting innovative research. Among the institute's 80 previous doctoral trainees, graduates have acquired competitive positions at Duke, Mayo Clinic, Harvard, MIT, Stanford, the U.S. Food and Drug Administration, and in private industry.

The campus has attracted award-winning students from across the world, including Rachana Deven Somaiya, a first-generation college student from India. Somaiya is a graduate student in Virginia Tech's Translational Biology, Medicine, and Health Program and expects to defend her doctoral dissertation this spring.

"As a first-generation college student, I did not know any scientists nor what research was growing up. When I started graduate school, I questioned my ability to succeed," Somaiya said.

"This institute gave me a chance with a great education and a welcoming environment to conduct extraordinary scientific research."

A virtual tour of the new facility and the archived ribbon cutting ceremony are accessible via the [Fralin Biomedical Research Institute's website](#).

iTHRIV Under the Microscope

Amy Harrigan is the iTHRIV Training Programs Manager. Prior to her position with iTHRIV, she was a Clinical Research Coordinator (CRC) with UVA Colorectal Surgery. The studies she once managed ranged from outcomes research to phase III cancer trails. During her time as a CRC she held memberships to the Protocol Review Committee (PRC) for the UVA Cancer Center, where she reviewed cancer clinical trial protocols for feasibility and safety for four years, and the Association of Clinical Research Professionals (ACRP) Fall Symposium Planning Committee, in which she contributed to the development and implementation of the annual ACRP Central Virginia Chapter Fall Symposium for three years. She also served as a mentor in conducting clinical research to undergraduate interns as well as medical students and surgical residents.

Amy's background in multiple domains and phases of research has primed her for her role in managing all aspects of the iTHRIV Scholars Program. With a consistent mindset of process improvement and resource efficiency, Amy values the opportunity she has to apply her skills to iTHRIV's impactful programs designed to empower researchers with knowledge, experiences, and diverse collaboration.

When she is off the clock, Amy enjoys spending time with her husband, two young boys, dog, and two cats. Any chance she gets to enjoy the outdoors she fills with gardening, hiking, kayaking, camping or relaxing.



Intro to Data Science Learning Short Series

iTHRIV is excited to present the "Intro to Data Science Series", a series of Learning Shorts designed to provide an introduction to the field of data science. This series is designed for the clinical translational researcher who is interested in learning more about data science and how it might be incorporated into health-related research. The series will include both didactic lectures as well as provide real-world examples of data science in research.

These brief 15-30 min presentations, called Learning shots, are designed to provide flexible learning at the learners own pace.

Brian Wright, Ph.D., developer of the series, is an Assistant Professor in the School of Data Science at the University of Virginia. He is also the Vice President for DC Data Community a non-profit organization with roughly 25,000 members focusing on data science education and networking across the DC area. He received his Ph.D. from the University of Tennessee in Higher Education in 2017 and his current research interests focus on applications to the field of Education and methods associated with research replication. He has partnered with some outstanding faculty members to bring you this exciting series.

Learning Shots in this series can be accessed using the links below or the search feature. Keep checking back as more will be added in the near future.

Survey:

In order to help us understand better how effective this series is, please take a few minutes after viewing each Learning Shot in the series to complete the survey attached to each one.

Support:

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Learning Shots:

[Learning Shot 1: Data Science: Past, Present....Future!](#)

[Learning Shot 2: Data Science Framework](#)

[Learning Shot 3: Value Domain \(Ethics\)](#)

[Learning Shot 4: Analytics](#)

[Learning Shot 5: Data Science in Clinical Research: Injury Prevention](#)