

Translational Research

An Interview with Serpil Erzurum, M.D.,
Chair, Lerner Research Institute, Cleveland Clinic

EDITORS' NOTE Dr. Serpil Erzurum was appointed in 2016 as Chair of Lerner Research Institute, home to all basic, translational and clinical research at Cleveland Clinic. A renowned scientist and clinician, she has published more than 200 peer-reviewed articles and has been principal investigator on more than 20 federal grants with more than \$60 million in research funding, including several large, multi-investigator program project grants and network trials. She was elected in 2017 to the National Academy of Medicine, one of the highest honors in health and medicine. A member of Cleveland Clinic's staff since 1993, Dr. Erzurum is a professor at Cleveland Clinic Lerner College of Medicine and staff physician in the Respiratory Institute. She holds the Alfred Lerner Memorial Chair in Innovative Biomedical Research. Dr. Erzurum received her medical education at Northeastern Ohio Universities College of Medicine.



Serpil Erzurum

INSTITUTION BRIEF Based in Cleveland, Ohio, Cleveland Clinic (my.clevelandclinic.org) is a nonprofit multispecialty academic medical center that integrates clinical and hospital care with research and education. It was founded in 1921 by four renowned physicians with a vision of providing outstanding patient care based upon the principles of cooperation, compassion and innovation. Cleveland Clinic has pioneered many medical breakthroughs, including coronary artery bypass surgery and the first face transplant in the United States. U.S. News & World Report consistently names Cleveland Clinic as one of the nation's best hospitals in its annual "America's Best Hospitals" survey. Cleveland Clinic has approximately 66,000 caregivers including more than 4,200 full-time salaried physicians and researchers and 16,000 nurses who represent 120 medical specialties and subspecialties.

Lerner Research Institute (lerner.ccf.org) is one of the largest research institutes in the nation with nearly \$300 million in research funding annually and 1,500 researchers and support personnel. Lerner Research Institute had great commercialization success last year with 52 patents awarded.

How do you define the Cleveland Clinic difference?

Cleveland Clinic has been a fabulous place to work since I joined in 1993. From the very first day that I came to Cleveland Clinic to interview, I knew it was a very special place. It's the people and the culture we have that has really revolved around teamwork from the very founding of Cleveland Clinic, as well as our focus on patients first. That's what drives our mission to care for the patient of today and tomorrow.

Will you provide an overview of Lerner Research Institute and the key areas of focus for the Institute?

Cleveland Clinic always had in its mission investigating the problems of our patients and research was part of its tripartite mission. Lerner Research Institute serves a large part of the mission statement in translational research for Cleveland Clinic. The Institute is housed in 500,000 square feet of space with about 1,500 people conducting research. We have four disease areas that we do a particularly good job of doing research within – we call them our "impact areas."

One is heart and vascular research. From the very origins, heart research here at Cleveland Clinic was at the top of cutting-edge research.

Another impact area is focused on brain and eye diseases. The Neurological and Eye Institutes partner with the Research Institute in these areas of research.

Cancer research is another very important impact area at Cleveland Clinic and across the city of Cleveland. We all work together in the Comprehensive Cancer Center research programs funded by the National Cancer Institute.

Our fourth impact area focuses on inflammation. Inflammation is a global term that encompasses diseases like asthma, inflammatory bowel disease, and arthritis. These are common diseases that share a common theme of the organs and tissues being inflamed and disease pathology occurring.

Is there close collaboration within these four impact areas?

There's a great deal of crossover among these research impact areas. I work in two impact areas, but I crossover to a third. Many of us participate in all four impact areas. Even if a researcher is focused on a certain area, collaborations with another impact area

researcher allows them both to consider new approaches and opens the way to innovation. It is the collaborative process by these teams to which we look for our research to accelerate. The endgame for all of us is to work together to rapidly advance research discoveries in the lab to the benefit of our patients at the Clinic.

You have focused around pulmonary research and respiratory medicine. Will you highlight the advances taking place in this area?

Pulmonary medicine has greatly advanced over the last several decades. I've been very fortunate to have excellent training and mentorship in disease research, and talented colleagues and teams, that allowed me to contribute to some of the discoveries. In the early 1990s, when I started studying pulmonary hypertension, high blood pressure in the lungs, the lifespan for an individual newly diagnosed was estimated at two years. There were no effective medications available to treat it.

Now, we have three different drug classes that we can use to treat pulmonary hypertension which have markedly increased life expectancy and improved the quality of life for these patients.

Asthma is one of the most common chronic diseases that can affect people. Twenty million Americans are impacted by asthma and about two million of those Americans have severe asthma which means that their lives are disrupted by the disease, often with emergency room visits and hospitalizations.

Over the past 15 years, we have carefully detailed the inflammatory cascade from which asthma stems, and now our patients benefit from biologics where specific inflammatory pathways are blocked and improvement in asthma control is achieved. This age of biologics has been translated to patient care over the last three to four years. It is very satisfying to see the tremendous progress in lung disease research for our patients.

How critical is it for the Lerner Research Institute to have a diverse workforce?

Diversity at the Research Institute is a priority. We have researchers from all over the world. We have diverse disciplines of study, diverse ways we do research and diverse people. Our teams are multidisciplinary. We aim for diversity in our thinking because we're then able to come up with better solutions. The diversity of thinking and culture at the Research Institute has been critical for the successes we've been able to achieve. ●