

A Bridge to Better Patient Care



Serpil Erzurum, MD

As Chair of the Institute's Department of Pathobiology, Serpil Erzurum, MD, is a well-known researcher and clinician involved in the causes and treatment of asthma. She also investigates the causes of pulmonary hypertension, a debilitating respiratory disease that's particularly deadly among women.

She is among the ranks of clinician-scientists — medical professionals with one foot planted firmly in the laboratory and the other next to patients' bedsides. In addition to supervising Pathobiology and its laboratories, Dr. Erzurum is Co-Director of Cleveland Clinic's Asthma Center and sees patients through its Department of Pulmonary, Allergy and Critical Care Medicine.

"I really see the benefit of an environment that lets clinicians and researchers talk and share their experiences. You can learn so much from one another in informal settings," she said. "There are so many times when I hear what a researcher is doing that could apply to my patients, or what I'm seeing with patients that could have an impact on laboratory projects."

CTSA by the Numbers

- 2,359: Outpatient visits
- 310: Overnight research admissions
- 15,000: Samples processed in laboratory
- 139: Research projects
- 35: Departments involved
- 225: Principal Investigators who use the Clinical Research Unit
- 41: Refereed journal publications from studies done on the Unit

12-month period

Dr. Erzurum is well positioned to encourage that interaction as the Director of the Clinical Research Unit of the Cleveland Clinical Science and Translational Consortium. The collaborative is possible through a Clinical and Translational Science Award, a \$64 million National Institutes of Health grant providing resources for the coordinated development of clinical and translational sciences. One of 38 academic health center awards nationally, CTSA is a partnership of Cleveland Clinic, Case Western Reserve University, University Hospitals Case Medical Center, MetroHealth Medical Center, and the Louis Stokes Cleveland VA Medical Center.

The Clinical Research Unit provides the equipment, nursing support and support staff for more than 200 investigators carrying out more than 125 clinical research projects. Most such projects are NIH-supported and are under way at Cleveland Clinic, from diabetes research and exercise studies to storing and shipping samples and investigating acute heart attacks. W.H. Wilson Tang, MD, Cell Biology and Cleveland Clinic's Department of Cardiovascular Medicine, directs the inpatient research services, and Lara Danziger-Isakov, MD, MPH, Cleveland Clinic's Pediatric Infectious Diseases, directs the pediatric studies in the research unit.

The services range from the ordinary (e.g., echocardiograms of people's hearts) to the extraordinary, such as "apheresis and elutriation" — collecting blood from volunteer donors and separating out the billions of white blood cells, then returning the red blood cells to the volunteer. With the support of the CTSA, Peter Cohen, MD, formerly of Immunology, and Clemencia Colmenares, PhD, Cancer Biology and Co-Director of the Institute's Research Core Services, who leads the translational technologies component of the CTSA at Cleveland Clinic, launched this new research service, in which healthy human volunteers undergo collection of their blood to obtain human circulating cells, which are then separated into the various components for use by basic science researchers.



“Bridging the gap between laboratory and clinical research is integral to patient care, and it would be much more challenging to do without the CTSA,” said Dr. Erzurum, who credits Richard Rudick, MD, for spearheading the application for the CTSA. Dr. Rudick is Vice Chair of Research at Cleveland Clinic’s Neurological Institute. All projects in the CTSA undergo review by the Protocol Review Committee, which is led by David Van Wagoner, PhD, Molecular Cardiology and Chair of the committee, and Bret Lashner, MD, Gastroenterology and Hepatology, and Co-Chair of the committee.

“Our Clinical Research Unit enables us to bring our research to the patient in a larger way than before. It allows rapid translation of our findings in the lab to the patient. Our staff — led by Charlotte Bhasin, our unit administrator, and Kay Stelmach, our nurse administrator — is dedicated to helping the investigators on our unit advance patient-oriented research,” Dr. Erzurum said.

Just as important, the unit serves as an advocate for the members of the public who volunteer for the various research projects. “Our participants are equal partners in the clinical research enterprise. Without them, we couldn’t advance medical care, and in the CTSA structure, they are partners in the research in the CTSA,” she said.

As much as the Clinical Research Unit provides to investigators, Dr. Erzurum sees potential for growth.

“We have a need to expand the clinical unit, in particular into nutritional and metabolic areas,” she said. “We are starting to organize for the development of a nutritional research center to focus on that facet of the disease process, which is so important for diabetes and obesity research. We have also begun to create a research participant membership that will allow greater and more meaningful involvement of our volunteers in our ongoing studies, including the sharing of research findings.”

Clinical Research Unit Resources

The Clinical Research Unit provides molecular biology, specimen processing and analytical work.

Its primary functions are to provide technical support for sophisticated chemical analyses called assays and to develop or validate new laboratory methods. The unit provides staffing for specific laboratory procedures.

Specimen Processing

The unit performs minimal to complex specimen processing. Among its services are blood, serum, plasma or urine collection; highly consistent, project-specific processing; specimen shipping; and large-volume blood cell separation.

Research Assays

The unit can provide chemical analysis assays that offer a complete chemical analysis of blood and the detection of antibodies or antigens, among other services.

Specimen Storage

Researchers have access to a 4°C refrigerator, one upright -20°C and one -70°C freezer for short-term specimen storage. All refrigerators and freezers are equipped with centrally monitored alarm systems for efficient and accurate temperature control.

Specimen Shipment

The unit has the capability to ship ambient or frozen specimens to other laboratories.