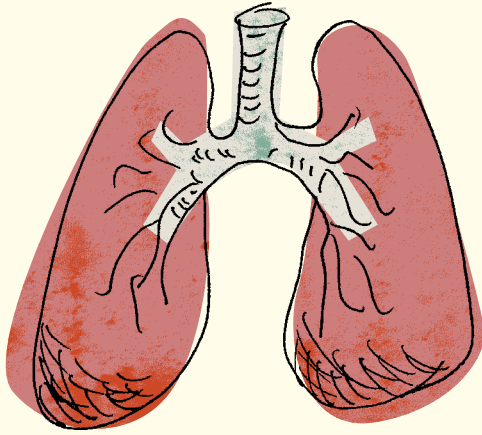


Harnessing vast data to understand COPD and speed up new treatments



Ten clinics in six study centers. Thousands of patients who suffer from a disease that has multiple variations. Three years' worth of clinical and molecular data for each patient.

How do you capture and organize the information a study like that generates? How do you analyze all that complex data to make it useful to those searching for treatments?

Through the groundbreaking methods of UNC's Collaborative Studies Coordinating Center—that's how.

Lisa LaVange, PhD, director of the CSCC and professor of biostatistics at the UNC Gillings School of Global Public Health, leads data collection and analysis effort for a project called SPIROMICS, a nationwide study that aims to help the more than



Dr. Lisa LaVange

12 million people with chronic obstructive pulmonary disease (COPD), a progressive

condition that makes breathing difficult.

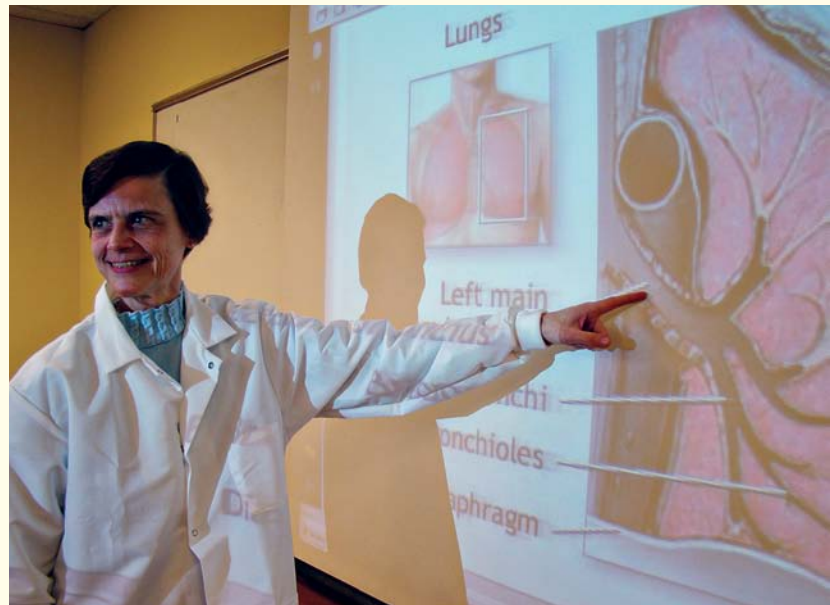
SPIROMICS is short for SubPopulations and Intermediate Outcome Measures in COPD Study. That mouthful of a moniker indicates the project's two goals: to identify and better understand the various kinds of COPD—known types include chronic bronchitis and emphysema—and to discover quicker ways to measure whether new treatments will work. LaVange and her team won a seven-year, \$8 million contract from the National Institutes of Health's National Heart, Lung and Blood Institute to serve as SPIROMICS' Genomics and Informatics Center.

"It's a real pan-campus research project," says LaVange. She believes the award came to UNC because of its reputation for state-of-the-art approaches to biostatistics, data management and pulmonary research.

The Genomics and Informatics ▶▶



PHOTOS BY LINDA KASTLEMAN



Center draws together the expertise of Richard Boucher, MD, Claire Doerschuk, MD, and Wanda O’Neal, PhD, at the UNC School of Medicine; Jane Greenberg, PhD, and Javed Mostafa, PhD, at the School of Information and Library Science; and Fred Wright, PhD, and Wei Sun, PhD, at the UNC Gillings School of Global Public Health’s Department of Biostatistics, where CSCC is based. The

York City and Salt Lake City will conduct a wide range of clinical testing, collect biological specimens, and take both baseline and follow-up radiological scans of more than 3,200 patients.

“The fun comes when we start putting clinical, radiological, molecular and biological variables together,” says LaVange.

LaVange’s team will test specific hypoth-

At left, Dr. Richard Boucher examines a lung tissue sample while Drs. Claire Doerschuk and Wanda O’Neal look on. At right, Doerschuk presents information about the effect of chronic obstructive pulmonary disease (COPD) on the human lung.

indicate how severe a patient’s disease is and potentially can provide a sense of whether a therapeutic agent is working or not. Clinical trials to test new pharmaceuticals can take years to complete, LaVange points out. Finding markers that predict long-term outcomes in a shorter period of time can accelerate the development process and, combined with more targeted patient enrollment, has the potential to improve the chance of success in future COPD clinical trials. ■

—Kathleen Kearns

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CSCC team includes programmers, statisticians, clinical monitors and project assistants and is led by CSCC faculty member David Couper, PhD, and project manager Betsy Carretta. A fifth-generation, state-of-the-art data management system, recently upgraded to enhance data security and implement industry-wide data standards, will be used for the massive amounts of data to be collected as part of the project.

Chronic obstructive pulmonary disease is the fourth leading cause of death in the United States, and currently no drugs bring about long-term improvement. Study centers in Winston-Salem, N.C., Ann Arbor, Mich., San Francisco, Los Angeles, New

eses about new subgroups of COPD patients.

“Not all people are affected by all forms of COPD in the same way,” she explains.

“If we better understand the subtypes of the disease, we can better target patients for enrollment in clinical trials designed to investigate a particular therapeutic agent.”

The team also will identify biological, clinical and radiological markers that

Project manager Betsy Carretta, MPH (foreground), reviews materials with SPIROMICS team members including Dr. Patricia Basta (right), co-director of the Biospecimen Processing and Storage facility.

LINDA KASTLEMAN

