



## At a Glance

The EPA-ORD laboratory in Chapel Hill, NC is an important driver of scientific knowledge about the human health effects of environmental exposures and the impact of environmental actions and decisions on public health. Scientists at the state-of-the-art facility conduct integrated research to improve our understanding of how social, economic, and health related factors affect an individual's or community's health risks. The laboratory actively participates in the local community and contributes to the economy in the surrounding region.

**Science:** The research conducted by scientists in Chapel Hill has broad impacts, including the support of decision making at local, regional, and national levels. A key focus is research on how air pollution affects both healthy people and people with heart, lung, and metabolic diseases such as diabetes that are more sensitive to the adverse health effects of pollution. They also perform population studies on the impact of pollutants and other stressors on pregnant women and children. They are leaders in developing information and tools to allow states and communities to better predict how environmental actions impact public health outcomes.

**Community Engagement:** Representative of a robust engagement program, Chapel Hill researchers recently brought together air pollution scientists, health care providers, and government health policy experts to develop ways to increase awareness of health care providers and their patients about the health effects of air pollution. The workshop also developed ways that patients can reduce their risks during air pollution episodes.

**Economic Impacts:** The \$4.5 million in disposable income from federal jobs and over \$9.2 million in expenditures on contracts, grants, supplies and equipment that are injected into the local economy have broader impacts as that spending supports additional jobs and spending, and as workers buy goods and services in the community using their disposable income.



Chapel Hill Laboratory Impacts by the Numbers

Chapel Hill (RTP Region <sup>1</sup> ), NC		
<b>94</b> Total jobs at the laboratory	<b>\$9.2 million</b> Annual spending in the region on contract, grants, and facility costs	<b>42</b> Federal jobs on-site
<b>1,539</b> Members of the public who have participated in research studies conducted at the lab over the last 5 years	<b>31</b> Post-doctoral, student, and visiting researchers on-site	<b>61</b> Trainees in Environmental Health at the lab over the last 5 years

<sup>1</sup>The Research Triangle Park region where EPA employees live includes Alamance, Chatham, Durham, Orange, and Wake Counties.

### Did you know?

- In addition to federal scientists, the lab provides 52 on-site jobs including post-doctoral researchers, student contractors, and facility staff.
- The lab is located on the campus of the University of North Carolina, and scientists from EPA collaborate with UNC researchers on many projects.





The Chapel Hill research facility is home to the EPA Office of Research and Development's Environmental Public Health Division (EPHD). It is located on the University of North Carolina at Chapel Hill's campus and occupies 155,633 square feet of laboratory, offices, and support operations.

## Mission and Science Facilities

Scientists at the Chapel Hill Facility perform integrated epidemiological, clinical, animal, cellular and statistical modeling research. The research improves our understanding of the links between human health and environmental quality, and identifies the social and economic factors that make some people more vulnerable to these exposures than others. It provides the scientific foundation to protect public health and the environment.

The Chapel Hill facility has unique capabilities. The facility includes a clinical unit, standard laboratories, and unique, state-of-the-art systems designed for studying the health effects of exposure to airborne pollutants. The facility's studies are conducted in accord with the Common Rule for Human Subject Protection. A few examples of research conducted at this facility are summarized below.

## Cardiovascular Effects of Air Pollution

Numerous research studies have shown that increases in air pollution are associated with adverse cardiovascular effects. However, it is still un-



known how factors such as poverty, medication, diet, and genetics may change how individuals or communities react to air pollution. Scientists at the Chapel Hill facility are working on identifying those factors that can modify an individuals or communities' responses to air pollution. Research is also being conducted on testing intervention strategies such as nutritional supplements and medications that

are most effective in decreasing the harmful effects of air pollution. The goal is to provide individuals and communities with information on ways they can decrease their risks to air pollution.

## Wildfires

The number and intensity of wildfires have been increasing. Scientists at the Chapel Hill facility are assessing the health impacts of wildland fire smoke in healthy and at-risk populations, and constructing a system to identify communities at greatest risk. Scientists are also developing ways to communicate information about wildfires to the public. For example, the "Smoke Sense" mobile application has been developed to give guidance to people and communities impacted by wildfire smoke. The app will be used to determine the most effective communications strategies to educate people impacted by wildfire smoke.



## Environmental Public Health

One in three American adults has heart or blood vessel disease, and is at higher risk from air pollution. As part of EPA's efforts to translate science from the clinic to you, researchers from the Chapel Hill facility have led EPA efforts to raise awareness of heart disease and its link to air pollution and other environmental factors. The goal of EPA's Healthy Heart Program is to raise public awareness about the role of outdoor air pollution in cardiovascular health and the steps that individuals can take to reduce their pollution exposures. This program has developed a partnership with the Million Hearts Initiative to prevent heart attacks and strokes, by providing information and to tools to reduce exposure to air pollution in people with heart disease. The Million Hearts Initiative is coled by the Centers for Disease Control and Prevention and the Center for Medicare & Medicaid Services.

