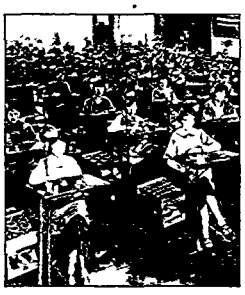
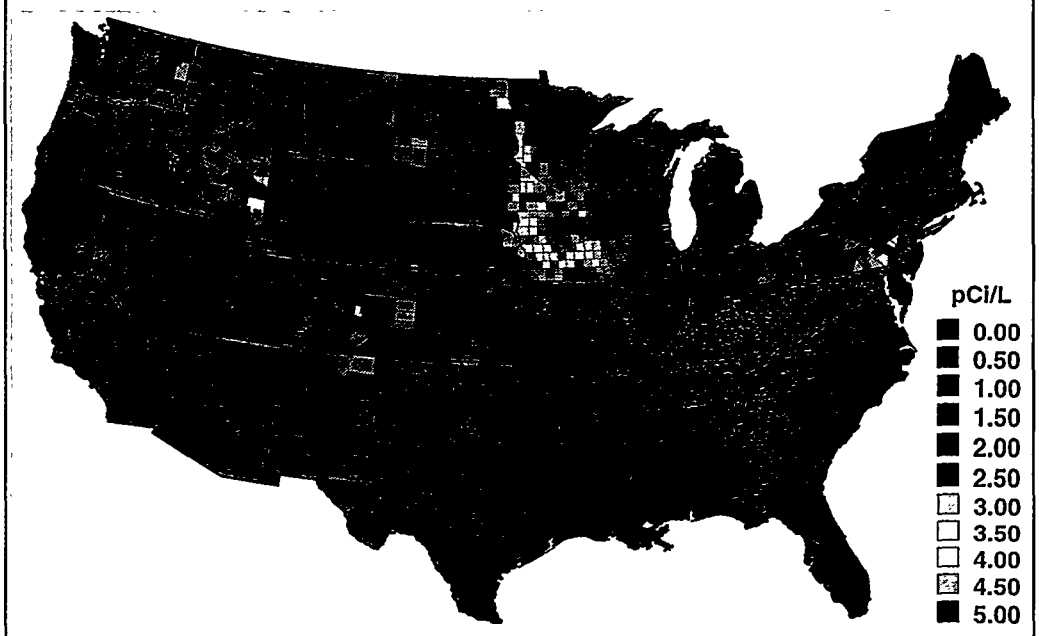


1947 Argonne undertook a long-term study of instrument-dial painters to assess the effects of occupational exposure to radium. As a group, the painters had high rates of bone disease and anemia; below a threshold dose, however, no ill-effects were observed.

1947 Alexander Hollaender created the Biology Division at the Clinton Laboratories. In 1983 Hollaender would receive the DOE's prestigious Enrico Fermi Award, and in 1986 OHER would establish the Alexander Hollaender Distinguished Postdoctoral Fellowships. To date, some eighty-five young investigators of outstanding promise have received fellowships to conduct research in BER-supported programs.

INSIDE THREAT: RADON IN THE HOME



■ In 1984 an employee of a nuclear power plant triggered the facility's radiation detectors when he arrived at work. The cause was a level of radioactive radon gas in the worker's home much higher than allowed in a uranium mine. This incident rekindled smoldering concern about radon in homes and led to a Congressional mandate to study the extent of the risk. Epidemiological data were available for uranium miners exposed to radon, so the key challenge was to define the distribution of radon in American homes and then to relate household exposures to workplace experience. Over the next twelve years, the DOE played a central role in providing the data needed to rationally assess this household risk. The map above, for example, shows median indoor radon concentrations across the country, as estimated by a predictive model based on available monitoring data, together with information on soil types, climatology, and home construction standards. ■ In addition, animal studies at Pacific Northwest uncovered a synergy between radon and cigarette smoke in heightening the risk of lung cancer. The bottom line? We now know that under some circumstances household exposure to radon and its decay products can be a significant health risk, but we also have guidelines that suggest when consumers should take action to reduce exposures—and that point to effective actions they can take. ■

Other animal studies, many with a heritage that predated the AEC, focused on the risks of ingested strontium and transuranics, inhaled plutonium, inhaled fission products, inhaled radon, and later, diesel exhaust and other products of fossil fuel combustion and conversion. At Hanford, site of the nation's first major reactor complex, some early experiments were part exposure study and part ecological research. In both field and laboratory studies, University of Washington scientists looked at the effects of waste effluents on Columbia River biota and cooperated in similar early studies on the fisheries of the Pacific Northwest. Such efforts were "animal studies" in a broader sense and pointed to a whole suite of ecosystem studies that will be one of the subjects of this booklet's third chapter.

Later, between 1975 and 1985, chemists and biologists from Argonne, Oak Ridge, Pacific Northwest, and the Inhalation Toxicology Research Institute (now the Lovelace Respiratory Research Institute) extended their studies to other energy tech-