



IN MEMORIAM

Donald B. Lindsley

Professor of Psychology, Physiology, and Psychiatry, Emeritus
Los Angeles
1907– 2003

Donald Benjamin Lindsley, co- founder of UCLA's Brain Research Institute and a pioneer in the study of human brain waves, behavior and information processing, died of natural causes on Thursday, June 19, 2003, in Santa Monica. He was 95.

Lindsley, a professor of psychology, physiology and psychiatry at UCLA and member of the National Academy of Sciences, used an interdisciplinary approach in brain- behavior research to provide major contributions to the understanding of normal and abnormal functioning of the brain during sleep-wakefulness, perception, emotion, learning and development.

Allan Tobin, director of the UCLA Brain Research Institute, said, "Don Lindsley's role at UCLA and in international neuroscience in some ways resembled that of the brainstem activating systems, whose understanding he did so much to promote. Don was one of those rare people who continually activated the people around him – students, post- doctoral scholars, and colleagues – focusing attention on what was important, exciting and relevant to the future."

Lindsley was one of the first scientists to use the newly discovered technique of electroencephalography, or "EEG," to record electrical brain activity. During his postdoctoral studies with Alexander Forbes and Hallowell Davis at Harvard University at the height of the Depression (1933-35), Lindsley himself served as the subject for the premier public demonstration of EEG to the American medical community. He later carried out the initial investigations of changes in the EEG in the developing brain.

In addition to his EEG research, Lindsley was active in developing measures of human sensory processing that used computer- averaged evoked potentials to assess the influence of attentional processes on rapid electrical changes in the brain produced by significant visual effects.

In landmark papers published in 1949-50 with Horace Magoun at Northwestern University, Lindsley helped define the brainstem activating systems that support wakefulness and arousal. He followed this research with significant contributions to knowledge about brain mechanisms underlying emotion and attention.

Lindsley was born in Brownhelm, Ohio, and attended nearby Wittenberg College. He earned his Ph.D. in psychology at the University of Iowa with Edward Lee Travis. His uncompromising dedication was evident from the start. He perfected his experimental technique by impaling the muscle of his own leg with needle-type electrodes to record the electrical activity of muscles and nerves before trying the same techniques on research subjects.

His early activities included a trip to Europe in 1931, with visits to various scientific laboratories. A fan of the great jazz trumpeter Bix Beiderbecke, Lindsley paid his passage on a ship from the Holland- America Line by playing cornet (trumpet) in a jazz band he formed called "The Four Aces," with whom he toured much of England and France.

After appointments in pediatrics at Western Reserve Medical School in Cleveland, Ohio, (1935-38); psychology at Brown University in Providence, R.I., (1938-46); and neurophysiology at Bradley Hospital in Providence (1938-46), Lindsley became professor of psychology at Northwestern University (1946-51).

Magoun, who moved from Evanston, recruited Lindsley to UCLA's new medical school in 1951. With fellow professor Charles "Tom" Sawyer, they commuted three times a week along the old Pacific Coast Highway from Santa Monica to makeshift labs at the Long Beach Veterans Administration campus until the medical and health sciences research center was built in Westwood. This trio joined with John Douglas French and Theodore Bullock to found UCLA's world- renowned Brain Research Institute in 1959.

In the same year, Lindsley was awarded the Distinguished Scientific Award from the American Psychological Association for his research on the "psychological variables associated with the reticular activating system ... based on interdisciplinary research in which he played an important part. Dr. Lindsley has shown great skill not only in both neurophysiology and in psychology, but also in his unusual insight into the relationships between these two areas."

In 1960, while he chaired the Department of Psychology, Lindsley was selected by his peers and delivered the UCLA Faculty Research Lecture on "Brain Development and Behavior." His retirement in 1977 was celebrated by a major conference on "Neurophysiology and Psychology: Basic Mechanisms and Clinical Applications." Later accolades included the Society for Neuroscience's prestigious Ralph Gerard Prize for Distinguished Contributions to Neuroscience in 1988.

Lindsley always trained a participant- observer's eye on documenting the history of his discipline and its practitioners. His film, *Psychologists Here, There, and Everywhere*, is a moving- picture record of hundreds of scientists - ordinary as well as eminent - in action at the annual professional meetings of the American Psychological Association from 1946 to 1957. With his subsequent voice- added anecdotes, it is an often-requested classic at the University of Akron's Archives of American Psychology.

He recently donated his lifelong accumulation of papers, letters and meticulously identified photographs to UCLA's Neuroscience History Archives.

Lindsley was elected to the Society for Experimental Psychologists (1942), the National Academy of Sciences (1952), and the American Academy of Arts and Sciences (1965). Among the numerous professional societies, committees and editorial boards to which he belonged, Lindsley was a charter member of the International Brain Research Organization (IBRO) and the Society for Neuroscience, and he served as president of Division 6 (Physiological and Comparative Psychology) of the American Psychological Association (1947) and the American Electroencephalographic Society (1964-65).

The Lindsley Lab at UCLA hosted 84 postdoctoral fellows and visiting scientists from more than 25 countries. Lindsley edited a series of translations of previously inaccessible works by Russian neurophysiologists, thus shepherding some of the first major exchanges of information on brain electrophysiology between the Soviet Union and the United States.

More than anything in his career, including nearly 250 scientific papers, Lindsley took great pride in the 48 Ph.D. aspirants who completed their doctorates under his guidance and mentorship. He continued voluminous typewritten correspondence with most of them as he earnestly followed and advised them in their careers.

The feeling was mutual, as then UCLA Brain Research Institute Director Carmine Clemente noted in 1978: "I have been touched by Don Lindsley's humane approach to his students, by the friendly twinkle in his eye and by his uplifting smile," Clemente said. "Somehow I think that the warm regard held for him by his students means more to him than the honors he has achieved through his work - but he, indeed, has both."

Lindsley's commitment to the recognition and advancement of young scientists was memorialized by Albert and Ellen Grass, EEGers whom he had known and with whom he collaborated in the development of electrophysiology since 1935. The Society for Neuroscience, through the support of the Grass Foundation, awards the Donald B. Lindsley Prize each year to the author of the most outstanding Ph.D. thesis in the area of behavioral neuroscience. The fruits of this lasting tribute have been presented to 26 recipients since 1978.

Huda Akil, president of the Society for Neuroscience and Gardner C. Quarton Distinguished Professor of Neurosciences at the University of Michigan, recalls: "I had the great honor of meeting Professor Lindsley when I was a graduate student at UCLA. Having studied his work and being in awe of him, I was surprised by his kindness to a mere student. I then learned of his deep commitment to his students and younger colleagues. It is therefore extremely apt that the Society for Neuroscience honors one of its charter members and a giant

in the field of brain research by awarding the Donald B. Lindsley Prize, which recognizes scientific talent among young investigators. The Society for Neuroscience mourns the passing of a brilliant scientist and a great man, and will continue to celebrate his spirit through the annual Lindsley Prize."

Lindsley's wife of 69 years, Ellen Ford Lindsley, died in November 2002. He is survived by his children, David, Margaret and Robert Lindsley, all of Santa Monica, and Sara Ellen Lyons of Carpenteria, as well as six grandchildren and seven great- grandchildren.

Russell Johnson
Charles L. Wilson
V. Reggie Edgerton