Dr. Lloyd Noel Ferguson, Sr., a world-renowned chemistry professor, celebrated author and a pioneer in helping eliminate racial barriers for African Americans in the field of chemistry, died on November 30, 2011.

Lloyd, who is survived by his wife Charlotte, three children, Lloyd Jr, Stephen, Lisa, and seven grandchildren, was born February 9, 1918, in Oakland, California. His parents were Noel and Gwendolyn Ferguson, a businessman and maid. In spite of the hard times his family experienced during the Great Depression, Lloyd, at the age of 12, was able to buy a chemistry set and carry out experiments in a backyard shed that he built.

By the time he reached high school he had already developed products that could be used for various household purposes, including a moth repellent, spot remover, and lemonade powder. As a high school teenager, he wrote letters to the heads of all the major chemical companies asking them to keep him apprised of any new and exciting discoveries. He kept an accurate record of the responses that he received. The budding talents of this future chemist were quickly recognized by his chemistry teacher at Oakland Technical High School who strongly encouraged him to go to college.

Lloyd graduated from high school at the age of 16 and worked for a couple of years as a porter on the railroad to earn money for college. He enrolled at University of California, Berkeley, and received a B.S. degree in chemistry with honors in 1940. Three years later, he received his Ph.D. in chemistry, ***becoming the first African American to receive a Ph.D. in Chemistry from UC Berkeley*** . While at Berkeley, he worked with two Nobel

Laureates: Dr. Melvin Calvin and Dr. Glenn T. Seaborg. Calvin spoke at Lloyd's retirement celebration at California State University, Los Angeles (CSULA) in 1986.

When Lloyd graduated in 1943, in contrast to his classmates, none of the major chemical companies would interview African Americans or consider them for employment. Lloyd therefore accepted a position as an assistant professor at North Carolina Agricultural and Technical College in Greensboro, North Carolina, an historically black college (HBCU), where he taught for two years before joining the faculty in 1945 at Howard University, an HBCU in Washington, D.C.

At Howard, Lloyd became a full professor of chemistry in 1955 and then head of the Chemistry department in 1958. He established the first Ph.D. program in chemistry at another HBCU. Subsequently, the Chemistry department at Howard University has graduated more African Americans with Ph.D.s than any other college or university in the United States. He personally served as the research adviser for six students, all of whom were African Americans who earned Ph.D.s in chemistry. Howard University honored him with an honorary doctorate in 1970.

Lloyd received a Guggenheim Fellowship in 1953 that enabled him to do research at the Carlsberg Laboratory in Copenhagen, Denmark, and at the Swiss Federal Institute of Technology in Zurich, Switzerland. In 1961, he received support from the National Science Foundation to conduct research once again at same the Swiss institute. He was a visiting professor at the University of Nairobi in Kenya during 1971-72. In 1984-85, the United Negro College Fund supported his visiting professorship at Bennett College, an HBCU for women in Greensboro, North Carolina.

Lloyd came to CSULA in 1965 as a professor in the Department of Chemistry and Biochemistry and was chair of the Department from 1968 to 1971. He led the establishment of Cal State L.A.'s Minority Biomedical Research Support (MBRS) program and served as its director from its inception in 1973 through 1984.

Dr. Carlos Gutierrez, the current director of the Minority Opportunities in Research (MORE) Programs, believes that Dr. Ferguson's "greatest legacy is the generations of our students who benefitted through participation in the Minority Biomedical Research Support program that he

established in 1973, and resulted in hundreds of professor, research scientist, and health professional careers. MBRS has become part of the MORE Programs, which continue to further his work."

Lloyd was a recipient Cal State L.A.'s 1973-74 Outstanding Professor Award and the CSU Trustees' 1980-81 Outstanding Professor Award. In 1995, the Department of Chemistry and Biochemistry established the Lloyd Ferguson Distinguished Lecture Series, which each year brings a distinguished chemist to campus to present a luncheon lecture that is well-attended by hundreds of faculty and students. The "Lloyd Ferguson Scholarship" (established by Lloyd) is given annually to a Cal State L.A. undergraduate chemistry major.

Lloyd seldom missed the lunch time pick-up bridge games with other chemistry faculty members, including Professors Harold Goldwhite and Hank Keyszer where he garnered the reputation of being somewhat of a local card shark. As a colleague, he provided quiet yet effective leadership for the Chemistry Department and its faculty. As a teacher, he demanded excellence from his students. Former students from both Howard University and Cal State LA, many years later, still have nightmares about his tests and final examinations.

In addition to serving as chairman of the American Chemical Society's Division of Chemical Education, other numerous distinctions and national awards that Lloyd garnered include the *Chemical Manufacturers Association Award in Chemical Education, and the American Chemical Society Award in Chemical Education.*
He also participated in the formulation of the Support for the Educationally and Economically Disadvantaged Program (SEED) of the American Chemical Society. This continues to be a very active program serving to broaden the participation of underrepresented minority students in undergraduate research in chemistry.

Lloyd's research sought to elucidate the relationships between molecular structure and biological activity, with a specific focus on the relationship of molecular structure to the sense of taste. For example, what specific structural features make a substance taste "sweet." In this regard, he also did some work in cancer chemotherapy and the molecular structure of biologically-active compounds.

Dr. Robert Vellanoweth—the current chair of the Department of Chemistry and Biochemistry at

Cal State L.A, an alumnus of the Department, and an undergraduate participant in the MBRS program—is one of many underrepresented students who went on to successful careers. Dr. Vellanoweth states, “While Lloyd was in the Chemistry department here, he made many contributions to alicyclic chemistry, especially in regard to the structural basis of sweetness. This concept of structure defining function has long been a central tenet of chemistry and Lloyd’s own work pushed that concept directly into biology, where it is continually demonstrated to this day. Lloyd’s most important legacy, though, is his strong support for a true teacher-scholar model, where one’s research endeavors are most meaningful when they provide opportunities for students to directly engage in expanding our knowledge.”

Lloyd was the author of more than 50 scientific journal publications and six books, including three widely-used organic chemistry textbooks: *Electron Structures of Organic Molecules, Textbook of Organic Chemistry,* and *The Modern Structural Theory of Organic Chemistry.*
Among the stories that have become a part of chemistry folklore is that while James Meredith was being barred from entering the University of Mississippi, the armed state troops could not keep Ferguson’s textbook out—it was being used by the Chemistry department there. Two of his textbooks have been translated into Hindi and Japanese.

At the national level, in 1972, Lloyd was one of the founders of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE). Each year NOBCChE bestows the “*Lloyd N. Ferguson Young Scientist Award*” to scientists with “technical excellence and documented contributions to their field.” This award was established in recognition of the large number of minority students who Lloyd has mentored over the years.

On February 18, 2011, the beautiful courtyard area between La Kretz Hall and Wing B of the Wallis Annenberg Integrated Sciences Complex at Cal State L.A. was dedicated as the “Ferguson Courtyard.” The standing-room-only dedication ceremony included remarks by the CSULA President James M. Rosser, among others, and included the unveiling of a bronze plaque engraved with Ferguson’s name and portrait. Lloyd was in attendance and briefly expressed his humble gratitude. He was received with a standing ovation.

“Dr. Ferguson’s legacy of working hard to achieve his educational goals, continually encouraging students to share his love of chemistry, and working tirelessly to give others educational opportunities, make the naming of this courtyard in his honor a legacy that will inspire students for generations to come,” said Dr. James Henderson, Dean of the College of Natural and Social Sciences at Cal State L.A. “It is only right and fitting that a gathering place for students where they can learn science and make the most of their learning opportunities

would be named for Dr. Ferguson."

His remarkable impact is seen in the thousands of minority students, scientists and educators who he has directly or indirectly impacted through the courses he offered, his lectures, his research and leadership in professional organizations.

"Words cannot capture the awe, excitement and motivation an 18 year old black kid from the rural tobacco fields of North Carolina experienced as a college sophomore at Hampton University when his organic chemistry professor showed him the *Textbook of Organic Chemistry* with a photograph on the jacket cover of the author, an African American professor at Howard University named Dr. Lloyd Ferguson," said Dr. Costello Brown, emeritus professor of chemistry at Cal State L.A. "As students, we were struggling with equations and nomenclature, and here was someone who looked like us who had written a whole book on organic chemistry! This was inspiring! Wow."

Brown continued, "Never could one have ever imagined that that same kid would one day have the honor of having an adjacent research laboratory for almost 15 years with this author and being able to call this distinguished scientist, a mentor, a colleague and true friend."