A BLACK
SCIENTIFIC
RENAISSANCE

Bell Laboratories

"Bell Labs of the 1970s, '80s, and '90s was to black scientists what Harlem of the 1920s was to black writers, artists and musicians. It was a true renaissance."

~ Dr. William Massey, Engineer

Bell Laboratories

Alexander Graham Bell, the inventor of the telephone, founded Bell Laboratories in Washington, D.C in the late 19th century as the Volta Laboratory and Bureau. Bell Labs has a long history as a center of scientific innovation; the transistor, laser, microphone, radio astronomy, and the C programming language, among other innovations, all trace their roots to Bell Labs. In addition, seven Nobel Prizes have been awarded to scientists for their work at Bell Labs.

Bell Laboratories in Murray Hill, New Jersey.
Photo from of Wikimedia Commons

Physicist James West joined Bell Laboratories in 1957 after he received his B.S. in physics from Temple University. When he arrived, there were at least seven African American technical workers at Bell Labs including Lincoln Hawkins, Ray Story, Charlie Miller, Bill North, and others. During the 1950s and 1960s, the civil rights movement was sweeping the country as African Americans and other minorities were demanding equal rights. In 1970, West co-founded the Association of Black Laboratory Employees (ABLE). At the urging of ABLE, Bell Labs initiated the Cooperative Research Fellowship Program (CRFP) for minorities in 1972. It was one of the first programs of its kind.

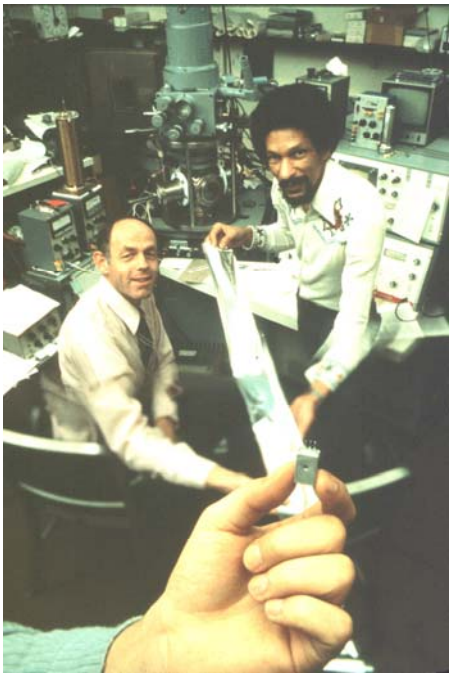
The program provided minority students enrolled in universities local to the New Jersey Bell Labs facilities financial support for their graduate study as well as a technical mentor who was a senior member of the Research & Development staff. These senior members served as mentors and advocates for the students, even in their graduate programs. In 1974, a similar program began for women. Through these programs, dozens of African American scientists were able to pursue their Ph.D. in physics and other subjects and make important contributions to the development of communications technologies.

The CRFP and the African American scientists that were a part of it, are a testament to the impact and significance of affirmative action programs that target underrepresented minorities. The program continued until 1996 when AT&T divided Bell Labs into AT&T Labs and Lucent Technologies.

AIP
Center for History of Physics

The American Institute of Physics' Center for History of Physics works to preserve and make known the historical record of modern physics and allied sciences. Through documentation, archival collections and educational initiatives, the Center ensures that the heritage of modern physics is safeguarded and its story is accurately told. The AIP Teacher's Guide on African Americans in Physics, Astronomy, and Related Disciplines is part of an initiative to increase knowledge on the history of women and minorities in the physical sciences. More information at http://www.aip.org/history-programs.

Profiles of Two "Bell Labbers"



James West (right) with fellow researcher Gerhard Sessler at Bell Labs in 1976, with their electret microphone. Image reprinted with permission of Alcatel-Lucent USA Inc.

Dr. James West

Dr. James West was born in Farmville, Virginia on February 10, 1931. West's interest in electricity began when he was twelve years old and worked with his cousin to install electrical wiring in homes in Virginia. While he originally considered attending medical school, West decided to pursue a B.S. degree in solid state physics at Temple University which he received in 1957. After receiving his B.S., West was hired at Bell Laboratories where he began working on his Ph.D. At Bell Labs, West worked with German researcher Gerhard Sessler to develop the foil-electret microphone — a small microphone that did not require a battery — which revolutionized the communications industry. Today, around 90% of microphone technology is based on the electret microphone and Dr. West's invention has been used in devices such as hearing aids and space technology. While at Bell Labs, West also co-founded the Association of Black Laboratory Employees (ABLE) in 1970. ABLE advocated on behalf of Black employees at Bell Labs from scientists to janitors and was a critical force behind the Cooperative Research Fellowship Program for minorities in 1972.

Dr. West retired from Bell Laboratories in 2001 after a more than 40-year career. In 1999, he became the fourth African American inducted into the National Inventors Hall of Fame. In 2006, he was awarded the U.S. National Medal of Technology.

Dr. Anthony Johnson

Anthony Johnson was born in Brooklyn, New York on May 23, 1954. Initially, Johnson was interested in math and chemistry and was introduced to physics by a teacher in high school. He received his B.S. in physics in 1975 from Polytechnic Institute. Through the Bell Labs Cooperative Research Fellowship Program for minorities, Johnson earned his Ph.D. in Physics from the City College of New York in 1981. After graduating, Johnson was hired at Bell Labs as a member of the Quantum Physics and Electronics Research Department. He later joined the Photonic Circuits Research Department. In 1995, he became a professor of physics at the New Jersey Institute of Technology. In 2002, Johnson became the first African American to serve as president of the Optical Society of America. In 2003, he became the Director of the center for Advanced Studies in Photonics Research (CASPR). He was then hired as a professor of physics, computer science, and electrical engineering at University of Maryland, Baltimore County. His research has been on ultrafast optics and optoelectronics.

Dr. Anthony Johnson conducting experiments on the optical properties of glass fibers at the Quantum Physics and Electronics Research Department at AT&T Bell Laboratories. Image reprinted with permission of Alcatel-Lucent USA Inc.

BLACK SCIENTISTS AT BELL LABS

- William Lincoln "Link" Hawkins
- Shirley Ann Jackson
- James West
- Anthony Johnson
- Donnell Walton
- George Campbell, Jr.
- Michael Spencer
- Arlene Maclin
- Peter Delfyett
- William Massey
- James Mitchell
- Jesse Russell
- Donald Lyons

Note: This is not a comprehensive list of African American scientists that were at Bell Labs in the 1970s-1990s.

RESOURCES

ScienceMakers, "Biography of James West," http://www.thehistorymakers.com/biography/james-west.

ScienceMakers, "Biography of Anthony Johnson," http://www.thehistorymakers.com/biography/anthony-johnson.

Elaine P. Laws, "AT&T Labs and Lucent Bell Laboratories Ph.D. Fellowship Programs, 1972-2002," AT&T (2002).