

Lonnie G. Johnson

Inventor, engineer (1949-)



African-American engineer and inventor Lonnie G. Johnson was born in Alabama in 1949. After graduating from Tuskegee University with a bachelors' degree in mechanical engineering and a master's degree in nuclear engineering, Johnson joined the U.S. Air Force and was assigned to the Strategic Air Command, where he helped develop the stealth bomber program. His other assignments included working as a NASA satellite systems engineer for the Galileo mission to Jupiter and the Cassini mission to Saturn.

In his spare time Johnson continued to work on side projects while working for NASA. In 1982 he developed an air nozzle as part of an experiment in developing a heat pump that used water rather than Freon. The first test of the air nozzle resulted in a stream of water being shot across Johnson bathroom. After seven years of tinkering and tireless marketing this air nozzle became the Super Soaker squirt gun, one of the most popular toys in the world.

Propelled by the success of the Super Soaker, Johnson founded his own company, Johnson Research and Development, and went on to acquire more than 100 patents. Some of his inventions including a ceramic battery, hair rollers that set without heat and the launching system for Nerf guns have achieved significant commercial success. He is currently working on the Johnson Thermoelectric Energy Converter, an advanced heat engine that can reportedly convert solar energy into electricity with twice the efficiency of current methods, and without any moving parts.



Sylvia Earle

Marine Biologist, explorer, author (1935-)

Dr. Sylvia Earle is an American born marine biologist and National Geographic Explorer-In- Residence

Sylvia Earle was born in New Jersey and raised on a small farm near Camden. As a small child Sylvia loved exploring the woods near her home. She was fascinated by the creatures and plants that lived in the wild. Neither of her parents had a college education, but they too loved nature, and they taught young Sylvia to respect wild creatures and not to be afraid of the unknown.



When Sylvia was 13, her family moved to Clearwater, Florida, and she began to learn all she could about the Gulf of Mexico and its coast. Her parents could not afford to send her to college themselves, but she was an exceptional student and won scholarships to Florida State. Throughout her school years she supported herself by working in university research laboratories.

In 1966 Sylvia Earle earned her Ph.D. from Duke University. Her dissertation created a sensation in the oceanographic community. Never before had a marine scientist made such a long and detailed first-hand study of aquatic plant life. Since then she has made a lifelong project of cataloguing every species of plant that can be found in the Gulf of Mexico.

In 1970 Dr. Earle led and all female research expedition known as Tektite II. She and four other women lived in a small structure on the ocean floor for 2 weeks. The publicity surrounding this project propelled Dr. Earle into one of the most recognizable faces in the scientific community. She became an outspoken advocate for undersea research and sounded early warnings about the damage being done to the aquasphere by pollution.



In her deep ocean exploration career spanning over 4 decades Dr. Earle has lead over 70 research expeditions. She holds the record for the deepest untethered dive at 1, 250, and the solo submersible record for women at over 3,600 feet. She was the first women to serve as the Chief Scientist of the National Oceanographic and Atmospheric Administration, is the founder of 3 companies, as well as an author, film producer and has a Lego figure in her likeness.



Luis Walter Alvarez

Physicist, inventor (1911-1988)

Luis Walter Alvarez was an American experimental physicist, inventor and professor who was awarded the Nobel Prize in Physics in 1968. After receiving his PhD in Physics from the University of Chicago, Alvarez joined the research faculty at the University of California, Berkeley where he would teach until his death in 1998. Along with his love of physics Alvarez was an accomplished pilot. During WWII working with the MIT Radiation Laboratory Alvarez was an essential member of the teams that developed

and improved aviation radar systems, including Ground Control Approach (GCA) the international standard for over 40 years of commercial aviation. Alvarez held the patent for the basic radar transponder in all airplanes which he sold to the U.S. Government for \$1.

Alvarez then joined the Manhattan Project and worked on the detonator systems for the first nuclear weapons. As the co-pilot of the B-29 superfortress *The Great Artiste* in formation with the *Enola Gay* Alvarez was a scientific observer at the bombing of Hiroshima and Nagasaki Japan.

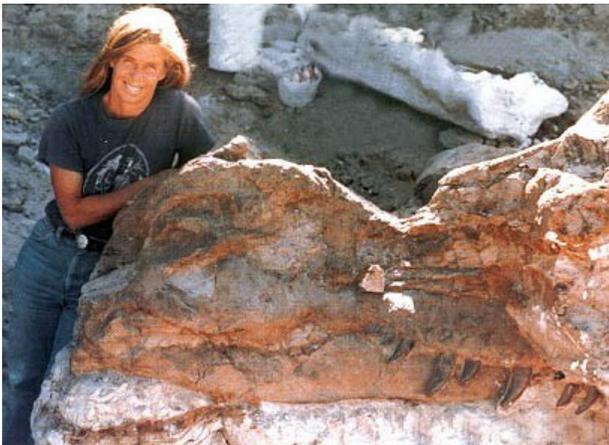
After the war Alvarez returned to UC Berkeley and his research in particle physics. His invention of a liquid hydrogen bubble chamber allowed his team to take millions of photographs of previous unknown particles and developed computer models of their interactions. This work led to his Nobel Prize in 1968.

In 1980 working with his son, a geologist, and 2 nuclear chemists, Alvarez proposed a theory on the extraterrestrial cause of the extinction of dinosaurs at the end of the Cretaceous Era. Their theory based on evidence of an abundance of rare minerals found in asteroids and shocked crystal, glassy spherules, microscopic diamonds and soot trapped in a thin layer of clay, pointed to an asteroid impact as the likely trigger for the rapid extinction. Their theory was widely rejected for more than 10 years until the discovery of the Chicxulub impact crater on the coast of Mexico 2 years after Alvarez died. In 2010 a panel of 41 international scientists agreed that the Chicxulub asteroid impact is the most likely trigger for the mass extinction.

Susan Hendrickson

Fossil hunter, marine archeologist, adventurer and explorer (1949-)

Sue Hendrickson is a self-taught fossil hunter (specializing in fossil inclusion in amber), marine archaeologist, adventurer, and explorer. Stranded by a broken down truck in South Dakota in 1990, Hendrickson along with her golden retriever, Gypsy discovered the remarkable T.rex fossil that is now known as Sue. This T.rex fossil is the largest and most complete T.rex found to date. Sue (the T.rex fossil) is now displayed at the Field Museum in Chicago, Illinois.



year-old sunken Spanish galleon (the San Diego) off the coast of the Philippines.



Hendrickson has found important fossils, artifacts and shipwrecks around the world, including ancient fossilized whales in the Peruvian desert, 24-million-year old amber encased butterflies and other insects in the Dominican Republic, ancient Egyptian and Napoleonic treasures sunken in the Alexandria River in Egypt and Chinese porcelain and other treasures from a 400-



E.O. Wilson

Biologist, researcher, theorist, naturalist and author (1929-)

Edward Osborne Wilson, known as E.O. Wilson is a retired professor of biology and curator of entomology at Harvard University. Wilson's specialty is Myrmecology, the study of ants, on which he is considered the world's leading expert.

As a child E.O. Wilson was forced to move often due to his father's job as a government accountant. He found solace in exploring nature every where he moved. At age 7, while fishing, he scratched his right eye permanently damaging his distance vision and depth perception. He retained sharp near-distance vision in his left eye and began to focus on insect life at close range. A war time shortage of insect pins interrupted his collection of flies and turned his attention to ants, which could be stored in jars. By age 11 he had determined he would become an entomologist and set himself the task of cataloging every species of ant in Alabama.

At age 13 he discovered a colony of non-native fire ants near the docks in Mobile and reported his finding to authorities. By the time he entered the University of Alabama the fire ant, a potential threat to agriculture was spreading beyond Mobile and the state requested Wilson carry out a survey of the fire ants progress. The resulting study completed in 1949 was his first scientific publication. He entered Harvard in 1950 and received a fellowship for international research. Over the next 5 years he exhaustively collected and catalogue ant species around the world. He earned his PhD in 1955 and joined the faculty in 1956. In the 1960's working with mathematician and ecologist Robert MacArthur, Wilson first identified the chemical compounds, known as pheromones, which allow insects to communicate by sense of smell. They went on to collaborate on theories of population dynamics and species equilibrium, and social behavior. Their observations of social behavior in ants, bees, wasps and termites established the basis of a new scientific field now known as Sociobiology.

Although officially retired, E.O. Wilson continues to research, publish and lecture around the world.