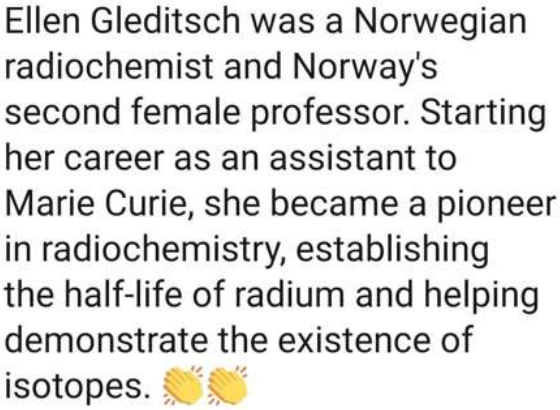
DESCRIPTIONS OF FAMOUS PEOPLE IN SCIENCE

Compiled By Howie Baum

Scientists make important breakthroughs in research, technology, mathematics and the natural and physical sciences. From Stephen Hawking, Marie Curie and Isaac Newton to Jane Goodall, Albert Einstein and Charles Darwin, scientists advance society and our understanding of the world.



She was Vice President of the Norwegian Association for Women's Rights 1937–1939.

Brian May is a founding member of the music group **Queen**, a world-renowned guitarist, songwriter, producer and performer, also a Doctor of Astrophysics, and a passionate advocate and campaigner for animal rights.

Accomplished Astronomy student Brian's PhD studies were stalled when a musical career superseded. The music group "Queen" remains the most successful albums act in UK chart history.

Brian penned 22 Queen top 20 hits, among them the powerful ballads 'Who Wants to Live Forever', 'No-One But You' and 'Save Me', along with anthems 'The Show Must Go On', 'I Want It All' and 'We Will Rock You'.

He retains his keen passion for Astronomy and after a 30-year break returned to Astrophysics to update his doctoral thesis on the Motions of Interplanetary Dust, achieving his PhD from Imperial College, London, in 2007.

As a lifelong advocate of animal welfare, he set up the "Save Me" campaign to champion all, but predominantly British wildlife. "Save Me" works at grass roots level in conjunction with a local animal rescue and re-homing center, as well as doing work with the major animal welfare groups.

He was appointed Commander of the Order of the British Empire in 2005 for 'services to the Music Industry' and for his charity work.

Beatrice Shilling - (March 1909 – November 1990)

She was an aeronautical engineer during WWII. She started her career in engineering early, buying her first motorbike at the age of 14 and tinkering with it. In 1934 she earned an Masters in Science degree in Mechanical Engineering at Manchester University.

She is most famous for the 'Miss Shilling's Orifice' a simple repair for Merlin Engines fitted to Spitfire and Hurricane fighter planes.

The engine suffered from stalling during a nosedive, as fuel would flood the engine. This meant German planes were able to outmaneuver British planes easily. She devised a simple thimble shape with a hole cut in that limited the fuel flow and allowed British pilots to regain the advantage.

Outside of airplanes Shilling raced motorbikes. She beat professional riders, such as Noel Pope, and was awarded the Gold Star for lapping the Brooklands circuit at 106 miles per hour on her Norton M30. Between 1959 and 1962 she raced with her husband in an Austin-Healey Sebring Sprite.

Linus Pauling – He was born on February 28, 1901 in Portland, Oregon. He was the first of three children in the financially stretched family of Herman Pauling, a pharmaceuticals salesman, and Lucy Darling.

He became an American chemist, biochemist, chemical engineer, peace activist, author, and educator. He published more than 1,200 papers and books, of which about 850 dealt with scientific topics. New Scientist called him one of the 20 greatest scientists of all time, and as of 2000, he was rated the 16th most important scientist in history

He was claimed to be the greatest chemist of the twentieth century, and arguably ever. He was a founder of quantum chemistry, molecular biology, and molecular genetics. He also discovered that sickle-cell anemia is a molecular disease.

In an extraordinary and long life, Pauling was the sole recipient of two Nobel Prizes – an unequaled achievement – one for chemistry and another for peace.

Katherine Johnson - August 26, 1918 – February 24, 2020) was an American mathematician whose calculations of orbital mechanics as a NASA employee were critical to the success of the first and subsequent U.S. crewed spaceflights.

During her 33-year career at NASA and its predecessor, she earned a reputation for mastering complex manual calculations and helped pioneer the use of computers to perform the tasks. The space agency noted her "historical role as one of the first African-American women to work as a NASA scientist".

Her work included calculating trajectories, launch windows, and emergency return paths for Project Mercury spaceflights, including those for astronauts Alan Shepard, the first American in space, and John Glenn, the first American in orbit, and rendezvous paths for the Apollo Lunar Module and command module on flights to the Moon.

Her calculations were also essential to the beginning of the Space Shuttle program, and she worked on plans for a mission to Mars.

In 2015, President Barack Obama awarded her the Presidential Medal of Freedom.

In 2016, she was also presented with the Silver Snoopy Award by NASA astronaut Leland D. Melvin and a NASA Group Achievement Award.

She was portrayed by Taraji P. Henson as a lead character in the 2016 film **Hidden Figures.**

In 2019, Johnson was awarded the Congressional Gold Medal by the United States Congress and in 2021, she was inducted into the National Women's Hall of Fame.

Luis Alvarez – He was born on June 13, 1911, in San Francisco, California. His father, Walter Clement Alvarez, was a doctor and author who wrote a large number of medical books. His mother was Harriet Smyth.

He was a Nobel Prize winning physicist, probably most famous for the discovery of the iridium layer and his theory that the mass extinction of dinosaurs was caused by an asteroid or comet colliding with Earth.

Besides doing the normal work you might expect of a physics professor, Alvarez took on more unusual projects, like making use of cosmic rays to search for hidden chambers in an Egyptian pyramid.

Alvarez was an enthusiastic pilot; he learned to fly in 1933.

In the early 1940s he invented the Microwave Phased Array Antenna. This was a form of radar that gave ground crew unparalleled precision in determining the position of an aircraft in flight. The invention was a big improvement that let ground crew to give clear instructions to pilots, as their aircraft approached runways preparing to land.

The system was particularly useful when visibility was poor, such as in fog, or other adverse weather, or when pilots were inexperienced. Alvarez's invention was used by the military and civil authorities in various countries for decades, greatly enhancing air safety.

Marie Curie – was born in Warsaw, Poland on November 7, 1867, the daughter of a secondary-school teacher.

She received a general education in local schools and some scientific training from her father.

She became involved in a students' revolutionary organization and found it prudent to leave Warsaw, then in the part of Poland dominated by Russia, for Cracow, which at that time was under Austrian rule.

In 1891, she went to Paris to continue her studies at the Sorbonne where she obtained degrees in Physics and the Mathematical Sciences.

She met Pierre Curie, Professor in the School of Physics in 1894 and in the following year they were married. She succeeded her husband as Head of the Physics Laboratory at the Sorbonne, gained her Doctor of Science degree in 1903, and following the tragic death of Pierre Curie in 1906, she took his place as Professor of General Physics in the Faculty of Sciences, the first time a woman had held this position.

She was also appointed Director of the Curie Laboratory in the Radium Institute of the University of Paris, founded in 1914.

Timothy Berners-Lee – He is a computer scientist, best known as the inventor of the World Wide Web (sorry but it wasn't Al Gore 😂)

Tim was honored as the "Inventor of the World Wide Web" during the 2012 Summer Olympics opening ceremony. In 2009, he was elected as a foreign associate of the United States National Academy of Sciences. And in 2004, he was knighted by Queen Elizabeth II for his pioneering work.

He graduated from Queens College, Oxford and worked as an independent contractor at the European Organization for Nuclear Research (CERN) from June to December 1980. While there, he proposed using hypertext to facilitate sharing and updating information among researchers.

Over a decade later, he built the first website at CERN, and it was first put online in August of 1991. The acronym CERN comes from calling it the European Council for Nuclear Research (in French *Conseil Européen pour la Recherche Nucléaire)* was adopted.

In November 2009, He launched the World Wide Web Foundation "to tackle the fundamental obstacles to realizing his vision of an open Web available, usable, and valuable for everyone."

In 2013, the Alliance for Affordable Internet was launched, and he is leading the coalition of public and private organizations, including Google, Facebook, Intel, and Microsoft.

In 2013, he was one of five Internet and Web pioneers awarded the inaugural Queen Elizabeth Prize for Engineering. He was also awarded an honorary Doctor of Science degree from the University of St. Andrews. And in 2012, he was inducted into the Internet Hall of Fame by the Internet Society.

Tedros Adhanom Ghebreyesus:

The public-health leader faced challenges from all sides in trying to rally the globe against COVID-19.

He was born on March 3,1965 and is an Ethiopian biologist, public health researcher, and official who has been Director-General of the World Health Organization (WHO) since 2017.

He is the first African in the role and was endorsed by the African Union. He also played a role in the response to both the Ebola outbreak.

Before serving as Director-General, he held two high-level positions in the government of Ethiopia: Minister of Health from 2005 to 2012 and Minister of Foreign Affairs from 2012 to 2016. Tedros was included in Time magazine's 100 Most Influential People of 2020.

He also worked with the Global Fund to Fight AIDS, Tuberculosis and Malaria, as well as overseeing a Maternal and Child Health program introducing 30,000 health extension workers, focused on reducing maternal mortality and child mortality.

Wilhelm Röntgen – (**1845 – 1923)**

He was born to Friedrich Conrad Röntgen, a German merchant and cloth manufacturer, and Charlotte Constanze Frowein. At age 3, his family moved to Holland where her family lived.

He attended high school at Utrecht Technical School in Utrecht, Netherlands and took courses at the Technical School for almost two years.

Upon hearing that he could enter the Federal Polytechnic Institute in Zurich, he passed the entrance examination and began studies there as a student of mechanical engineering. In 1869, he graduated with a PhD from the University of Zurich

On November 8th, 1895, he produced and detected electromagnetic radiation in a wavelength range known as X-rays or Röntgen rays. Within two weeks of first generating X-rays, he had invented X-ray photography.

The first ever X-ray photograph was of the bones in his wife's hand.

It was an achievement that earned him the inaugural Nobel Prize in Physics in 1901.

The discovery of X-rays was perhaps the single most important event in atomic and molecular science, not to say surgery.

Rosalind Franklin – She contributed to the discovery of the structure of DNA.

British chemist Rosalind Franklin was born in 1920 in Notting Hill, England.

In 1942, she brought her physics and chemistry expertise to the London Coal Co., where she investigated the properties of carbon. This was crucial to the war effort, which relied on coal and carbon for strategic equipment like gas masks. This research was the basis of her PhD thesis at Cambridge.

In 1950 during her research, she discovered that there were two forms of DNA and was offered a three-year scholarship to undertake further investigation at King's College in London.

Here she found the basic dimensions of DNA strands and the likely helical structure. She also found that when DNA is exposed to high levels of moisture, its structure changed.

In 1953, her colleague Maurice Wilkins showed James Watson and Francis Crick the X-ray data that Rosalind had obtained, confirming the 3D structure that the pair had speculated about for DNA.

In March 1958, she passed away at the age of 37 from several illnesses, including ovarian cancer. In 1962, the Nobel Prize in Physiology or Medicine was awarded to James Watson, Francis Crick and Maurice Wilkins for solving the structure of DNA.

Watson suggested that Rosalind, along with Wilkins, should also be awarded a Nobel Prize for Chemistry, but the Nobel Committee does not make posthumous nominations.

In his 1968 book, The Double Helix, Watson outlined how the two had become friends while working together. He also remarked that he would never have won a Nobel Prize or published a famous paper if it wasn't for Rosalind.

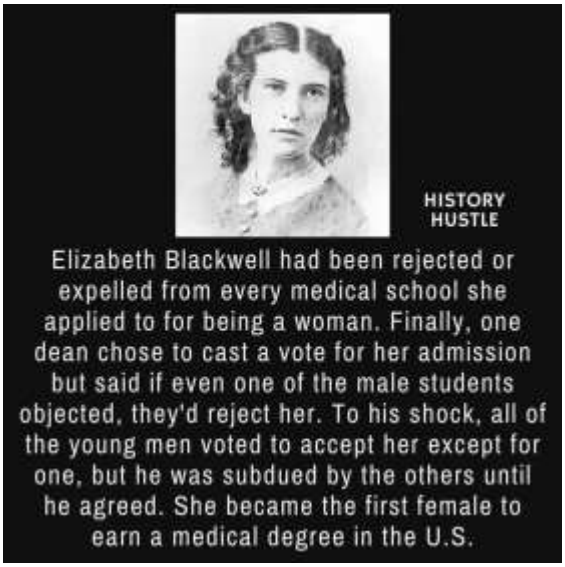
THE STORY OF ONESIMUS, THE ENSLAVED MAN WHO HELPED SAVE BOSTON FROM SMALLPOX

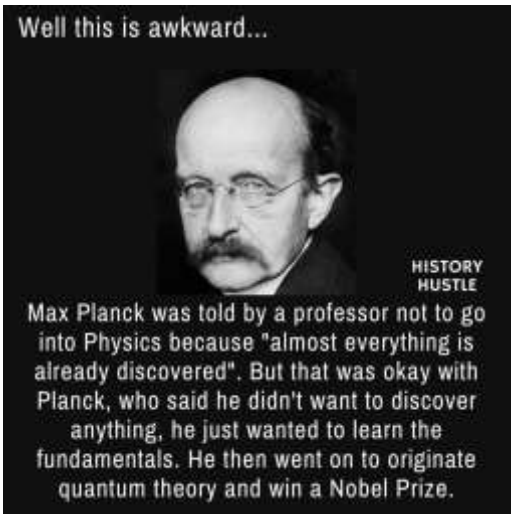
During the 1721 smallpox outbreak in Boston, a slave named Onesimus taught his master an early version of inoculation — and saved hundreds of people.

In the 18th century, Onesimus was a slave who many consider the father of vaccines.

His contribution to modern medicine cannot be overstated, and he helped eradicate one of the world's deadliest diseases. Yet, because he came to the United States as part of the trans-Atlantic slave trade, little of Onesimus exists in the historical record. There are no known depictions of him — and historians aren't even sure of his true birth and death dates.

Puritan minister Cotton Mather initially distrusted his slave, Onesimus — until he showed him how to inoculate against smallpox.



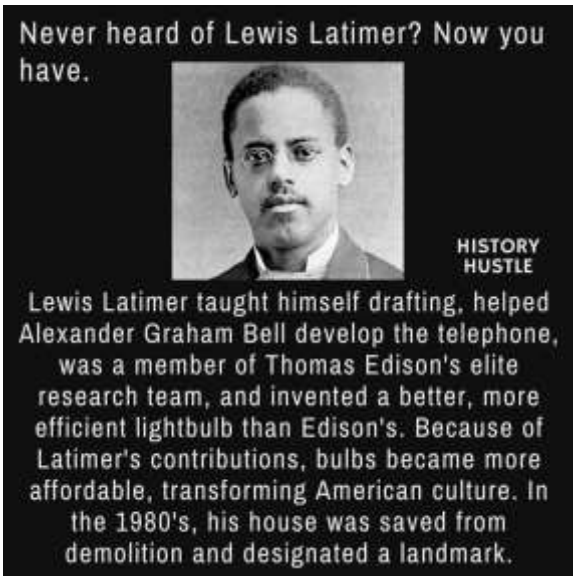


Margaret Mead -Anthropologist - Years ago, she was asked by a student what she considered to be the first sign of civilization in a culture. The student expected her to talk about fishhooks or clay pots or grinding stones.

But no. Mead said that the first sign of civilization in an ancient culture was a femur (thighbone) that had been broken and then healed. Mead explained that in the animal kingdom, if you break your leg, you die. You cannot run from danger, get to the river for a drink or hunt for food. You are meat for prowling beasts. No animal survives a broken leg long enough for the bone to heal.

A broken femur that has healed is evidence that someone has taken time to stay with the one who fell, has bound up the wound, has carried the person to safety and has tended the person through recovery. Helping someone else through difficulty is where civilization starts, Mead said."

We are at our best when we serve others. Be civilized.



Clyde Foster –

He was born in Birmingham, Alabama, on November 21, 1931, as the sixth child of twelve. He attended A. H. Parker High School, and the experience of living as an African American in segregated Birmingham made him realize he needed to get away; for that reason, he attended Alabama A&M University (a historically black university in the north of the state), where he received his BS degree in Mathematics and Chemistry in 1954.

He was an American scientist and mathematician. He worked for the Army Ballistic Missile Agency and then for NASA, and from 1975 to 1986 was the head of Equal Employment Opportunity at Marshall Space Flight Center in Huntsville, Alabama.

Foster worked regularly as a recruiter, trying to attract black workers to Marshall

The problem, both for hiring new workers and promoting current workers at NASA, was that training was required, and while NASA itself, as a federal entity, did not segregate, its location in a segregated state meant that employees and future employees who were African-American could not attend the kinds of training programs they needed in order to be hired or promoted, since those were held in public facilities, which were segregated (such as ballrooms of hotels that allowed whites only).

Soon after he joined NASA, he was asked to train a white colleague to become his boss, at a time when the Civil Rights Movement in Alabama was demanding change.

Foster complained to his boss and refused the assignment, and then demanded that NASA start a program to train black workers. In the end, NASA agreed and started a training program in collaboration with Alabama A&M University.

After serving two years in the United States Army, he moved to Selma, Alabama, and worked as a science teacher in Dallas County, Alabama, from 1956 to 1957.

Judith Love Cohen (August 16, 1933 – July 25, 2016) was an American aerospace engineer and author.

She was born in Brooklyn, New York. By the fifth grade, her classmates were paying her to do their math homework. She was often the only woman in her math classes, and decided she wanted to be a math teacher.

By age 19, she was both studying engineering in college, and dancing ballet in the Metropolitan Opera Ballet company in New York.

After two years at Brooklyn College, Cohen married and moved to California, working as a junior engineer for North American Aviation, attending College at night

She worked as an electrical engineer on the Minuteman missile, the science ground station for the Hubble Space Telescope, the Tracking and Data Relay Satellite, and the Apollo Space Program.

During the Apollo 13 mission, the service module was damaged on the way to the moon and the power in the command module almost failed. Luckily, the Orbitology team that she was a part of, persuaded NASA to include the Abort Guidance System in the Lunar Module, and it was used by them, to navigate back safely to Earth.

According to her son Neil, "My mother usually considered her work on the Apollo program to be the highlight of her career. When disaster struck the Apollo 13 mission, it was the Abort-Guidance System she designed, that brought the astronauts home safely. She was there when the Apollo 13 astronauts paid a 'thank you' to the TRW facility in Redondo Beach."

After her retirement as an engineer, she founded a children's multimedia publishing company, eventually publishing more than 20 titles before her death in 2016.

She was the mother of computer scientist and engineer Neil Siegel and actor Jack Black.

She was an advocate for gender equality in the workplace and worked to have job openings posted inside the company so that anyone (including women) could apply.

Alexander Graham Bell is most famous for his invention of the telephone. He first became interested in the science of sound because both his mother and wife were deaf. His experiments in sound eventually let him to want to send voice signals down a telegraph wire. He was able to get some funding and hire his famous assistant Thomas Watson and together they were able to come up with the telephone. The first words spoken over the telephone were by Alex on March 10, 1876. They were "Mr. Watson, come here, I want to see you".

Alexander Graham Bell
by Moffett Studio

It turns out that other scientists had similar ideas. Bell had to race to the patent office in order to get his patent in first. He was first and, as a result, Bell and his investors had a valuable patent that would change the world. They formed the Bell Telephone Company in 1877. There have been many mergers and name changes over the years, but this company is known today as AT&T.

Where did Alexander Graham Bell grow up?

Bell was born on March 3, 1847 in Edinburgh, Scotland. He grew up in Scotland and was initially homeschooled by his father who was a professor. He later would attend high school as well as the University of Edinburgh.

Did Alexander Graham Bell only invent the telephone?

Bell actually had many inventions and did experimentation in many areas of science. Some of these include:

- The Metal Detector - Bell invented the first metal detector which was used to try and find a bullet inside of President James Garfield.
- Audiometer - A device used to detect hearing problems.
- He did experimental work on aeronautics and hydrofoils.
- He invented techniques which helped in teaching speech to deaf persons.
- He made a device to help find icebergs.

Rachel Louise Carson was born in Springdale, Pennsylvania on May 27, 1907. She grew up on a large farm where she learned about nature and animals. Rachel loved to read and write stories as a child. She even had a story published when she was only eleven years old. One of Rachel's favorite subjects was the ocean.

Rachel attended college at the Pennsylvania College for Women where she majored in biology. She later got her masters degree in zoology from Johns Hopkins University.

Rachel Carson
Source: US Fish and Wildlife Service

Career

After graduation, Rachel taught for a while and then got a job with the U.S. Fish and Wildlife Service. At first she wrote for a weekly radio program that educated people on marine biology. Later, she became a full-time marine biologist and was chief editor of publications for the Fish and Wildlife Service.

Writing

In addition to her work at the Fish and Wildlife Service, Rachel wrote articles for magazines about the ocean. In 1941, she published her first book called *Under the Sea Wind*. However, it was her second book, *The Sea Around Us*, which made her famous. *The Sea Around Us* was published in 1951 and was on the New York Times Best Seller List for over 80 weeks. With the success of the book, Rachel quit her job at the Fish and Wildlife Service and began to write full time.

Dangers of Pesticides

During World War II, government research had developed synthetic pesticides. Pesticides are used to kill pests such as insects, weeds, and small animals that can destroy crops. After the war, farmers began to use pesticides on their crops. One of the main pesticides used was called DDT.

Rachel was concerned about the effects that large scale spraying of DDT may have on the health of people as well as the environment. DDT was being sprayed onto crops in huge quantities from the air. Carson began to gather research on pesticides. She found that certain pesticides could adversely affect the environment and make people sick. She began to write a book about the subject.

Silent Spring

Carson spent four years gathering research and writing the book. She named it *Silent Spring* referring to birds dying due to pesticides and the spring being silent without their song. The book was published in 1962. The book became very popular and brought the environmental issues of pesticides to the general public.

- **Occupation:** Businessman and Inventor
- **Born:** February 11, 1847 in Milan, Ohio
- **Died:** October 18, 1931 in West Orange, New Jersey
- **Best known for:** Inventing many useful items including the phonograph and a practical light bulb

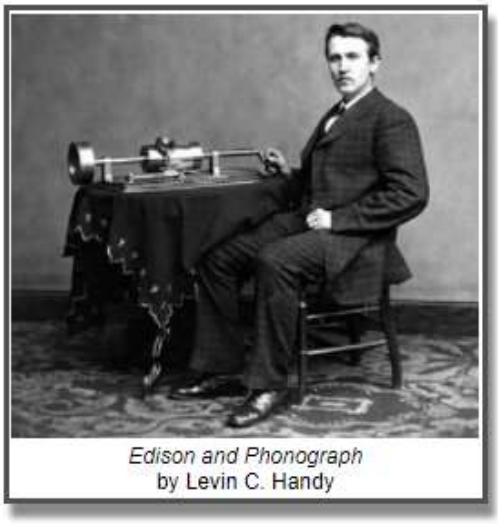
Thomas Edison
by Louis Bachrach

Biography:

Thomas Edison may be the greatest inventor in history. He has over 1000 patents in his name. Many of his inventions still have a major effect on our lives today. He was also a business entrepreneur. Several of his inventions were group efforts in his large invention laboratory where he had lots of people working for him to help develop, build, and test his inventions. Edison used his inventions to form companies including General Electric, which is one of the biggest corporations in the world today.

Where did Edison grow up?

Thomas Edison was born in Milan, Ohio on February 11, 1847. His family soon moved to Port Huron, Michigan where he spent most of his childhood. Surprisingly, he did not do well in school and ended up being home schooled by his mother. Thomas was an enterprising young man, selling vegetables, candy and newspapers on trains. One day he saved a child from a runaway train. The child's father repaid Edison by training him as a telegraph operator. As a telegraph operator, Thomas became interested in communications, which would be the focus of many of his inventions.



Edison and Phonograph
by Levin C. Handy

What are Thomas Edison's most famous inventions?

Thomas Edison has the patents and credits for many inventions. Three of his most famous include:

The Phonograph - This was the first major invention by Edison and made him famous. It was the first machine that was able to record and playback sound.

Light Bulb - Although he did not invent the first electric light, Edison made the first practical electric light bulb that could be manufactured and used in the home. He also invented other items that were needed to make the light bulb practical for use in homes including safety fuses and on/off switches for light sockets.

The Motion Picture - Edison did a lot of work in creating the motion picture camera and helping move forward the progress of practical movies.

Jane Goodall was born on April 3, 1934 in London, England. Her father was a businessman and her mother an author. Growing up, Jane loved animals. She dreamt of someday going to Africa in order to see some of her favorite animals in the wild. She particularly liked chimpanzees. One of her favorite toys as a child was a toy chimpanzee which she loved to play with.

Going to Africa

Jane spent her late teens and early twenties saving money to go to Africa. She worked various jobs including as a secretary and a waitress. When she was twenty-three Jane finally had enough money to visit a friend who lived on a farm in Kenya.

Jane fell in love with Africa and decided to stay. She met British archaeologist Louis Leakey who offered her a job studying chimpanzees. Jane was so excited. She moved to the Gombe Stream National Park in Tanzania and began to observe the Chimpanzees.

Studying Chimpanzees

When Jane began studying chimpanzees in 1960 she had no formal training or education. This may have actually helped her as she had her own unique way of observing and recording the chimp's actions and behaviors. Jane spent the next forty years of her life studying chimpanzees. She discovered many new and interesting things about the animals.

Jane learned a lot about chimpanzees and made some important discoveries:

- Tools - Jane observed a chimp using a piece of grass as a tool. The chimp would put the grass into a termite hole in order to catch termites to eat. She also saw chimps remove leaves from twigs in order to make a tool. This is first time that animals had been observed using and making tools. Prior to this it was thought that only humans used and made tools.
- Meat eaters - Jane also discovered that chimpanzees hunted for meat. They would actually hunt as packs, trap animals, and then kill them for food. Previously scientists thought that chimps only ate plants.
- Personalities - Jane observed many different personalities in the chimpanzee community. Some were kind, quiet, and generous while others were bullies and aggressive. She saw the chimps express emotions such as sadness, anger, and joy.

Over time, Jane's relationship grew closer and closer to the chimpanzees. For a period of nearly two years she became member of a chimpanzee troop, living with the chimps as part of their day to day lives. She was eventually kicked out when Frodo, a male chimp who didn't like Jane, became the leader of the troop.

Later Life

Jane wrote several articles and books about her experiences with chimpanzees including *In the Shadow of Man*, *The Chimpanzees of Gombe*, and *40 Years at Gombe*. She has spent much of her later years protecting chimpanzees and preserving the habitats of animals throughout the world.

Stephen Hawking

Early Life

Stephen Hawking was born in Oxford, England on January 8, 1942. He grew up in a highly educated family. Both of his parents had attended Oxford University and his father, Frank, was a medical researcher.

Stephen enjoyed math and science in school where he earned the nickname "Einstein." He wanted to study math at university but Oxford didn't have a math degree at the time so he chose physics and chemistry instead. Stephen found college coursework to be very easy. He enjoyed being a member of the school's boat club as well as classical music. After graduation, he went to Cambridge to study for his PhD.

Diagnosed with ALS

While Hawking was working on his PhD at Cambridge University, he began to have health issues. His speech became slurred and he became very clumsy, often dropping items or falling for no reason. After going through a series of tests, doctors discovered that Hawking had a disease called ALS (also called Lou Gehrig's disease). At the time, the doctors said he only had a few years to live.

Hawking meeting President Obama by Pete Souza

Overcoming ALS

Although Hawking was initially depressed over his diagnosis, he decided that there were things he wanted to accomplish with his life. He began to study and work harder than ever before. He wanted to earn his PhD before he died. Around the same time, he met and fell in love with a girl named Jane Wilde. Between his work and Jane, Hawking had a reason to live.

Interesting Facts about Stephen Hawking

- He was born on the 300th anniversary of the death of the famous scientist Galileo .
- He has been married twice and has three children.
- Stephen has been on several TV shows including *The Simpsons* and the *Big Bang Theory*.
- The book *A Brief History of Time* only has one equation, Einstein's famous $E = mc^2$.
- Hawking has co-written several children's books with his daughter Lucy including *George's Cosmic Treasure Hunt* and *George and the Big Bang*.
- He received the Presidential Medal of Freedom in 2009.
- He hoped to travel to space one day and trained with NASA on their zero gravity aircraft.

Mary Anning

Mary Anning (1799–1847) was a famous English fossil hunter. The cliffs near where she lived in Dorset, England, are rich in fossils from the Jurassic Period. Anning spent months uncovering the body of her first fossil, a marine reptile that swam in the time of the dinosaurs. It was later named *Ichthyosaurus*, which means "fish lizard." She found the first plesiosaur (a type of swimming reptile) in 1823 and an early pterosaur (a flying reptile) in 1828. She carefully recorded each find, before selling the fossils. Anning was not taken seriously because she was a woman and from a poor background, while most scientists of the time were men from wealthy families.

George Washington Carver

Carver was born into slavery in 1864, in Diamond Grove (now Diamond), Newton County, Missouri, near Crystal Place, sometime in the early or mid-1860s.

Black people were not allowed at the public school in Diamond Grove. George decided to go to a school for black children 10 miles south, in Neosho. When he reached the town, he found the school closed for the night. He slept in a nearby barn.

By his own account, the next morning he met a kind woman, Mariah Watkins, from whom he wished to rent a room.

When he identified himself as "Carver's George", as he had done his whole life, she replied that from now on his name was "George Carver". George liked Mariah Watkins, and her words "You must learn all you can, then go back out into the world and give your learning back to the people" made a great impression on him.

He was an American agricultural scientist and inventor who promoted alternative crops to cotton and methods to prevent soil depletion and the most prominent black scientist of the early 20th century.

While a professor at Tuskegee Institute, Carver developed techniques to improve soils depleted by repeated plantings of cotton.

He wanted poor farmers to grow other crops, such as peanuts and sweet potatoes, as a source of their own food and to improve their quality of life.

Apart from his work to improve the lives of farmers, Carver was also a leader in promoting environmentalism.

Marie Maynard Daly (April 16, 1921 – October 28, 2003) was an American biochemist. She was the first African-American woman in the United States to earn a Ph.D. in chemistry (awarded by Columbia University in 1947). She made important contributions in four areas of

research: the chemistry of histones that allow DNA to wind up in coils, protein synthesis, the relationships between cholesterol and hypertension, and creatine's uptake by muscle cells.

Her father, Ivan C. Daly, had immigrated from the British West Indies, found work as a postal clerk and eventually married Helen Page of Washington, D.C. They lived in New York City, and Marie was born and raised in Corona, Queens.

She often visited her maternal grandparents in Washington, where she read about scientists and their achievements in her grandfather's extensive library. She was especially impressed by Paul de Kruif's "The Microbe Hunters", a work which influenced her decision to become a scientist.

Daly's interest in science was also influenced by her father, who had attended Cornell University with intentions of becoming a chemist but had been unable to complete his education, due to a lack of funds.

Daly would then continue her father's legacy by majoring in chemistry. Years later, she started a Queens College scholarship fund in his honor to assist minority students majoring in chemistry or physics.

Lonnie George Johnson (born October 6, 1949) is an American inventor, aerospace engineer, and entrepreneur, whose work includes a U.S. Air Force-term of service and a twelve-year stint at NASA, where he worked at the Jet Propulsion Laboratory.

He also invented the Super Soaker water gun in 1989, which has been among the world's bestselling toys ever since. He also invented the Nerf Gun when he patented "a pneumatic launcher for a toy projectile" which revolutionized toy blasters.

He was born in Mobile, Alabama. His mother, who finished high school, worked as a nurse's aide and his father, who didn't finish high school, was a World War II veteran.

He explained the basic principles of electricity to Johnson at an early age. Stating that he "always liked to tinker with things," Johnson earned the nickname "the Professor" from kids in the neighborhood. He once tore up his sister's doll to see what made the eyes close. He also tried to cook up rocket fuel in a saucepan but in doing so almost burned down the house.

As a teenager, Johnson attended Williamson High School, an all-black school in Mobile. He drew much of his inspiration from George Washington Carver.

In 1968, Johnson represented his high school at a science fair in Alabama, where he was the only black student attending the fair; This was a time when African Americans had very little presence in science. There, he presented a robot he created, which he named "Linex," taking home the first-place prize. The robot was powered by compressed air.

In 1969, shortly after graduating from high school, Johnson attended Tuskegee University, obtaining a B.S. in mechanical engineering in 1973 and a master's degree in nuclear engineering.

He also holds an honorary Ph. D. in Science from Tuskegee University. He then worked for the U.S. Air Force, where he worked on the stealth bomber program, before eventually joining NASA's Jet Propulsion Laboratory in 1979.

Grace Hopper (1906 – January 1, 1992) American computer scientist. She worked as a programmer on the Harvard Mark I computer. Hopper helped to develop programming languages which translated English into code understandable by computers. This became the industry standard. Her work led to the creation of COBOL, a programming language still influential today. She also served as a rear-admiral in the US Navy.

Grace Brewster Murray Hopper (née Murray December 9, 1906 – January 1, 1992) was an American computer scientist and United States Navy rear admiral.

One of the first programmers of the Harvard Mark I computer, she was a pioneer of computer programming and a programming language that she created was later extended to create COBOL, an early high-level programming language, still in use today.

Prior to joining the Navy, Hopper earned a Ph.D. in mathematics from Yale University and was a professor of mathematics at Vassar College. Hopper attempted to enlist in the Navy during World War II but was rejected because she was 34 years old. She instead joined the Navy Reserves.

In 1966, she retired from the Naval Reserve, but in 1967 the Navy recalled her to active duty.

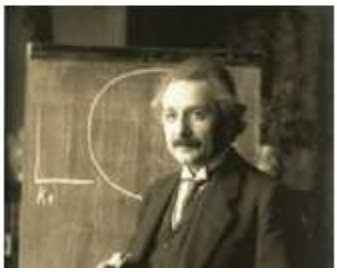
She retired from the Navy in 1986 and found work as a consultant for the Digital Equipment Corporation, sharing her computing experiences.

The U.S. Navy Arleigh Burke-class guided-missile destroyer USS Hopper was named for her, as was the Cray XE6 "Hopper" supercomputer at NERSC.

Albert Einstein was a scientist in the early 1900s. He came up with some of the most important discoveries and theories in all of science. Some people consider him to be one of the smartest people of the 20th century. His face and name are often used as the picture or description of the consummate scientist. Read here to learn more about Albert Einstein; what he was like and what discoveries and inventions he made.

Where did Einstein grow up?

Albert Einstein was born in Ulm, Germany on March 14, 1879. He spent most of his childhood in Munich, Germany. His father had an electronics company and Albert learned a lot about science and electronics from his dad. He really liked math and wanted to pursue math and science in school. He didn't finish school in Germany, but ended up his schooling in Switzerland. After school, Einstein searched for a job as a professor, but ended up working in a patent office in Bern, Switzerland.



$E=mc^2$ and Einstein's Theory of Relativity

Albert Einstein had many discoveries as a scientist, but he is most known for his Theory of Relativity. This theory changed much in the way scientists look at the world and set the foundation for many modern inventions, including the nuclear bomb and nuclear energy. One equation from the theory is $E=mc^2$. In this formula, "c" is the speed of light and is a constant. It is assumed to be the fastest speed possible in the universe. This formula explains how energy (E) is related to mass (m). The Theory of Relativity explained a lot of how time and distance may change due to the "relative" or different speed of the object and the observer.

Fun Facts about Albert Einstein

- Albert experienced speech problems as a child. His parents were worried that he wasn't very smart!
- He failed his first try on his entrance exam for college (this gives us all hope!).
- He was offered the presidency of Israel .
- He auctioned off a hand written version of his Theory of Relativity in 1940 for 6 million dollars in order to help with the war effort.
- Albert had a sister named Maja.

Alice Augusta Ball (July 24, 1892 – December 31, 1916) was an American chemist who developed the "Ball Method", the most effective treatment for leprosy during the early 20th century.

She was the first woman and first African American to receive a master's degree from the University of Hawaii and was also the university's first female and African American chemistry professor.

She was born on July 24, 1892, in Seattle, Washington, to James Presley and Laura Louise (Howard) Ball and was one of four children, with two older brothers, William and Robert, and a younger sister, Addie.

She attended Seattle High School and achieved top grades in the sciences and graduated in 1910.

She went on to study chemistry at the University of Washington, earning a bachelor's degree in pharmaceutical chemistry in 1912 and a second bachelor's degree in the science of pharmacy two years later in 1914.

At the College of Hawaii, her master's thesis involved studying the chemical properties of the Kava plant species. Because of this research and her understanding of the chemical makeup of plants, she was later approached by Harry T. Hollmann, who was an Acting Assistant Surgeon at the Leprosy Investigation Station of the U. S. Public Health Service in Hawaii, to study chaulmoogra oil and its chemical properties.

Chaulmoogra oil had been the best treatment available for leprosy for hundreds of years, and at age 23, she developed a much more effective injectable form that was very successful for eliminating the disease.

She died young and unfortunately, she was unable to publish her revolutionary findings.

Arthur L. Dean, a chemist and later the president of the University of Hawaii, stole her work, published the findings, and began producing large quantities of the injectable chaulmoogra extract.

Dean published the findings without giving Ball credit and named the technique after himself.

It was not until years after her death that Hollmann attempted to correct this injustice. He published a paper in 1922 giving credit to Ball, calling the injectable form of the oil the "Ball method."

Unfortunately, she still remained forgotten in the scientific record. In the 1970s, Kathryn Takara and Stanley Ali, professors at the University of Hawaii, searched the archives to find Ball's

research. After numerous decades they were able to bring her efforts and achievements to light, giving her the credit, she deserved.

Henry Ford

- **Occupation:** Businessman and Inventor
- **Born:** July 30, 1863 in Greenfield Township, Michigan
- **Died:** April 7, 1947 in Dearborn, Michigan
- **Best known for:** Founder of the Ford Motor Company and helped develop the assembly line for mass production

Henry Ford
by Hartsook

Biography:

Henry Ford is most famous for founding the Ford Motor Company. Ford is still one of the world's largest producers of cars including brands such as Ford, Lincoln, Mercury, Volvo, Mazda, and Land Rover. Ford was a pioneer in manufacturing using the assembly line. This enabled his company to manufacture cars on a large scale at a cheap price. For the first time, cars were affordable for the average American family.

The Model T Ford - This was the original car that Ford manufactured using the assembly line process. It was revolutionary in many ways, but primarily in its cost. It was very cheap compared to competitive cars and it was easy to drive and to repair. These features made it perfect for the middle class American. Over 15 million Model T cars were made and, by 1918, over 50% of the cars in America were Model Ts.

Mr and Mrs Henry Ford in his first car
by Unknown

Fun facts about Henry Ford

- Henry worked as an engineer at the Edison Illumination Company where he met Thomas Edison.
- His first try at an automobile company was in collaboration with Thomas Edison and was called the Detroit Automobile Company.
- Ford had Edison's last breath saved in a test tube and you can still see the test tube at the Henry Ford Museum.
- In 1918 he ran for a US Senate seat, but lost.
- He was a race car driver early in his career.

Dorothy Hodgkin (1910–1994) British chemist. She was awarded the Nobel prize for her work on critical discoveries of the structure of both penicillin, the structure of vitamin B12, and later insulin.

These discoveries led to significant improvements in health care. An outstanding chemist, Dorothy also devoted a large section of her life to the peace movement and promoting nuclear disarmament.

She also advanced the technique of X-ray crystallography to determine the structure of biomolecules, which became essential for structural biology.

She was born in Cairo, Egypt, the eldest of the four daughters of John Winter Crowfoot, then working for the country's Ministry of Education, and his wife Grace Mary. The family lived in Cairo during the winter months, returning to England each year to avoid the hotter part of the season in Egypt.

In 1928 at age 18 she entered Somerville College, Oxford, where she studied chemistry. She graduated in 1932 with a first-class honors degree, the third woman at this institution to achieve this distinction.

In the autumn of that year, she began studying for a PhD at Newnham College, Cambridge, under the supervision of John Desmond Bernal. It was then that she became aware of the potential of X-ray crystallography to determine the structure of proteins.

In 1934, at the age of 24, Dorothy began experiencing pain in her hands. A visit to a doctor led to a diagnosis of rheumatoid arthritis which would become progressively worse and crippling over time, with deformities in both her hands and feet. In her last years, Hodgkin spent a great deal of time in a wheelchair but remained scientifically active.

Nikola Tesla was born and raised in the Austrian Empire. He studied engineering and physics in the 1870s without receiving a degree, gaining practical experience in the early 1880s working in telephony and at Continental Edison in the new electric power industry.

In 1884 he emigrated to the United States, where he became a naturalized citizen. He worked for a short time at the Edison Machine Works in New York City, before he struck out on his own.

With the help of partners to finance and market his ideas, he set up laboratories and companies in New York to develop a range of electrical and mechanical devices. His alternating current (AC) induction motor and related polyphase AC patents, licensed by Westinghouse Electric in 1888, earned him a considerable amount of money and became the cornerstone of the polyphase system which that company eventually marketed.

Attempting to develop inventions he could patent and market, Tesla conducted a range of experiments with mechanical oscillators/generators, electrical discharge tubes, and early X-ray imaging.

He also built a wireless-controlled boat, one of the first-ever exhibited. Tesla became well known as an inventor and demonstrated his achievements to celebrities and wealthy patrons at his lab and was noted for his showmanship at public lectures.

Later in life, he experimented with a series of inventions in the 1910s and 1920s with varying degrees of success. Having spent most of his money, he lived in a series of New York hotels, leaving behind unpaid bills.

He died in New York City in January 1943. His work fell into relative obscurity following his death, until 1960, when the General Conference on Weights and Measures named the SI unit of magnetic flux density, the tesla in his honor.

There has been a resurgence in popular interest in Tesla since the 1990s.

Margaret Hamilton (born August 17, 1936) is an American computer scientist, systems engineer, and business owner.

She was director of the Software Engineering Division of the MIT Instrumentation Laboratory, which developed on-board flight software for NASA's Apollo program.

One example of the value of Hamilton's software work occurred during the Apollo 11 mission. Approximately three minutes before Eagle's touchdown on the moon, the software overrode a command to switch the flight computer's priority processing to a radar system who's 'on' switch had been manually activated due to a faulty written operations script provided to the crew. The action by the software permitted the mission to safely continue.

She later founded two software companies—Higher Order Software in 1976 and Hamilton Technologies in 1986, both in Cambridge, Massachusetts.

She has published more than 130 papers, proceedings and reports about sixty projects and six major programs. She is one of the people credited with coining the term "software engineering".

On November 22, 2016, Hamilton received the Presidential Medal of Freedom from President Barack Obama for her work leading to the development of on-board flight software for NASA's Apollo Moon missions.

Margaret Hamilton – actress -

Margaret Brainard Hamilton (December 9, 1902 – May 16, 1985) was an American film actress best known for her portrayal of the Wicked Witch of the West, and her Kansas counterpart Almira Gulch, in Metro-Goldwyn-Mayer's film The Wizard of Oz (1939).

A former schoolteacher, she worked as a character actress in films for seven years before she was offered the role that defined her public image. In later years, Hamilton made frequent cameo appearances on television sitcoms and commercials. She also gained recognition for her work as an advocate of causes designed to benefit children and animals and retained a lifelong commitment to public education.

THE END