



Women in Physics

Margaret Reid

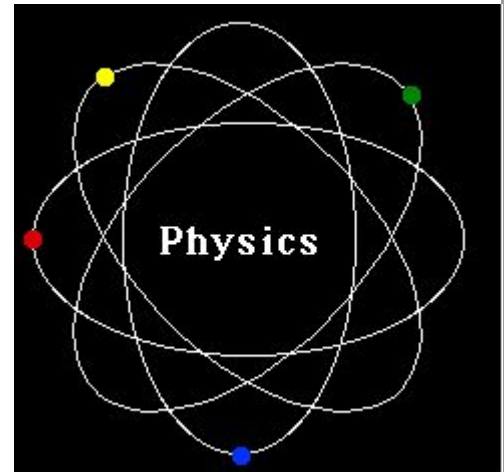
Clare Robertsen

Margaret Reid is an achieved physicist. She graduated from the University of Auckland in 1984, where she received her masters in theoretical physics. She is currently working on testing fundamental mechanics. She is known for having attained several awards. She is the first woman to be awarded the Moyal Medal, an award that recognizes outstanding studies in physics, mathematics, and statistics. She is living in Australia and acting as the head researcher at the Swinburne University of Technology. She is a great role model for young women looking to enter the STEM program.



Willie Hobbs Moore

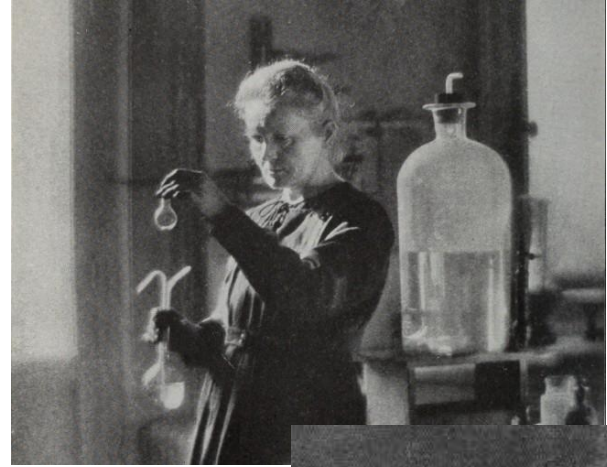
- Mikayla Campbell
- Willie was born on May 24th 1934 in Atlantic City, NJ. She and her sisters were the first in the family to become college graduates. She attended the University Of Michigan College of Engineering in 1954.
- She received her Bachelor's in 1958, her masters in 1961 and became the first woman to earn a doctorate in Physics in 1972.
- Many of her studies and research were published in many scientific journals ranging from those specific for chemical physics to Molecular Spectroscopy.
- She also held engineering positions in big companies and soon worked her way up an executive position at the Ford Motor Company.
- She passed away at the age of sixty in 1994.
- She was awarded the Edward A. Bouchet award at the National Conference of Black Physics Students in 1995.



Marie Curie

-Gillian Galvin

Marie Curie was born on November 7, 1867 in Warsaw, Poland. She received standard education at her local secondary school and scientific studies with her father. In 1891, she left Warsaw to continue her studies in Paris. She received licenciateships in Physics and Mathematical sciences. Curie and her husband's studies led to the isolation of Polonium. Curie also developed methods for the separation of radium from radioactive residues which allowed the characterization and study of its properties. Throughout her life, Marie Curie promoted the use of radium to alleviate pain. Many scientist throughout the world held her in high regard. Together with her husband, she was awarded half of the Nobel Prize for Physics in 1903, for their study into the spontaneous radiation discovered by Becquerel, who was awarded the other half of the Prize. In 1911 she received a second **Nobel Prize, this time in Chemistry**, in recognition of her work in radioactivity. She also received, jointly with her husband, the Davy Medal of the Royal Society in 1903 and, in 1921, President Harding of the United States, on behalf of the women of America, presented her with one gram of radium in recognition of her service to science. She was the first person to receive two Nobel Prizes.



Chien-Shiung Wu

By: Isabella Caban

Chien-Shiung Wu was a Chinese American physicist. She was born on May 31, 1912 in Liuhe, China. At a young age she developed a love for science.

Chien-Shiung earned an undergraduate degree in physics in 1934 at National Central University. Chien-Shiung then attended the University of California at Berkeley. In 1940, Wu earned her Ph.D. During World War II jobs were limited but, she worked at Smith College and Princeton. Later she was invited to work on the

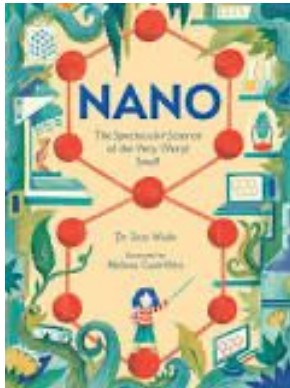
Manhattan Project at Columbia University. While working on the Manhattan Project it had helped her become an expert on nuclear physics. She is known for the research on the law of conservation of parity. In 1957, a Nobel Prize in physics was given to two male physicists, but many believe that Wu should of received an award for proving that their ideas were correct. Chien-Shiung believed that the industry was sexist but that didn't prevent her from continuing to make more accomplishments. Wu has won the National Medal of Science in 1975, the Wolf Prize in Physics in 1978 and many other awards for her hard work. She continued to do research and teach at Columbia until 1981. In retirement she spoke to young girls and women about her personal struggle to earn recognition for her work. In 1997, she died in New York from a stroke and was buried in her homeland.



Jess Wade

By: Lisa Jafferakos

Jess Wade is a 33 year old British physicist who on her free time creates and edits wikipedia pages to better represent women, so they get the recognition their success and talent deserves. She is currently working at the Blackett Laboratory at Imperial College London on Raman spectroscopy. Her research investigates “polymer-based organic light emitting diodes.” Jessica has won both the British Empire Medal and the 2020 SPIE Diversity Outreach Award. Both awards recognizing her contributions to gender equality in STEM. Jessica's book, that is about to be published, is write n to build the next generation of scientists.



Jocelyn Bell Burnell

By: Frankyana Merizier

- Born July 15, 1943
- Field: Astrophysics
- Education:
 - University of Glasgow (1965): Bachelors in Physics
 - University of Cambridge (1969): Doctorate in Radio Physics
- Burnell discovered pulsars: a highly magnetized compact star that emits radiation out of magnetic poles
- Burnell was not given the Nobel Prize of Physics for discovery, many protested on her behalf, but she believed the Nobel Prize was awarded appropriately because she was still a student at the time.
- Awards: Special Breakthrough Prize in Fundamental, Herschel Medal, Beatrice M. Tinsley Prize, Royal Medal, Magellanic Premium, Gold Medal of the Royal Astronomical Society, Grand Medaille, and J. Robert Oppenheimer Memorial Prize



Evangelina Rodriguez

By: Taylor Cole

Evangelina was born on November 10th, 1879 in the Dominican Republic. She was raised by her grandmother and from when she was young she exhibited signs of intelligence and ambition. After finishing high school, she studied medicine at the University of the Dominican Republic and in 1909, she became the first woman in the Dominican Republic to earn a degree in medicine. She began her practice in a town called Ramon Santana and she treated patients that were poverty stricken free of charge or for the little money they could spare. After saving up enough money to pursue her dream, Rodriguez went to France and studied gynecology, obstetrics, and pediatrics at the University of Paris. After graduating, she moved into the areas of social work and gave prostitutes advice and medical treatment when she noticed an increase in STDs. When she wasn't practicing medicine, she was advocating for women's suffrage and rights.

Website used:

<https://www.encyclopedia.com/women/encyclopedias-almanacs-transcripts-and-maps/rodriguez-evangelina-1879-1947>



Ruby Payne-Scott

Emily Andrade

Ruby Payne-Scott was born on May 28, 1912 in Grafton, New South Wales. She then moved to Sydney, graduated from high school, and got a diploma from Sydney university where she studied physics, math, botany, and chemistry. She completed both a B.Sc. (1933) and M.Sc. (1936) in Physics. Payne-Scott conducted research with William H. Love at the Cancer Research Laboratory in 1936. There, they concluded that the earth's magnetism has little to no effect on living on earth by growing chick embryos with no distinctions between them even though they were out in a magnetic field 5,000 times as powerful as earth's. She later worked for the Australian government in the Commonwealth Scientific and Industrial Research Organisation. Here she discovered Type I and Type III bursts and took part in the discovering of Type II and IV bursts. During World War II, Payne-Scott took part in work investigating radar and excelled in the exposure of aircraft using PPI (Plan Position Indicator). She also created more career opportunities for women in science. She later married and changed her name to Ruby Hall. In the last years of her life, she suffered from Alzheimer's. Payne-Scott died on May 25, 1981 in Mortdale, New South Wales.



Katherine Johnson by Madison Garrett

Katherine Johnson was born on August, 26th 1918 in White Sulphur Springs, West Virginia. After graduating both highschool and college, she continued her studies in mathematics as a graduate student at West Virginia University.

Originally an elementary teacher, Johnson's life plans changed when the National Advisory Committee for Aeronautics (NASA) recruited her to compute trajectories and orbits. While at NASA, Johnson helped to launch the the first American in space and she also performed calculations for the *Apollo 11* mission that landed man on the Moon.

In November 2015, Johnson was awarded the Presidential Medal of Freedom. She is most famously recognized as one of the three Black women mathematicians featured in the book and movie *Hidden Figures*.

Katherine Johnson recently died in February 2020 at age 101. Her impact as a Black female physicist will be eternally remembered in both the STEM field and world.



Maria Goeppert Mayer

Maria Goeppert Mayer was a German-American theoretical physicist and a Nobel laureate. She was born June 28, 1906 in Katowice, Poland. She died on February 30, 1972 in San Diego, California. She was married to Joseph Edward Mayer from 1930 to the time of their death; she has 2 children. She attended University of Göttingen in Germany during 1930. She later attended John Hopkins University where she studied Physics and the New Field of Quantum physics. She later made discoveries about nuclear structure, and is the second woman to win the Nobel Prize. In 1949, she released an article detailing the evidence for the nuclear shell model. In 1963, Jensen and Maria won the Nobel Prize of 1963 for their discoveries in physics.

Patricia

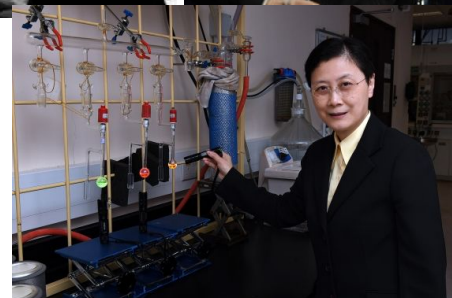


clear Shell Model

Vivian Wing-Wah Yam

Talia McCray

A Hong Kong chemist and physicist born February 10, 1963. Yam's research focuses on organic light-emitting diodes. As when she was younger her interest in science grew from being intrigued by mercury flowing from a broken thermometer. In 1988, where there were no facilities to teach chemistry or physics, Yam helped establish the first chemistry books and ordering the first beakers and chemicals. Continuing her science journey she went to study at Imperial College London in 1990; studying organometallic synthesis. In 2001, while being associated with the elements osmium, platinum and ruthenium; Yam taught about Chemistry and Energy. Yam was the youngest member to be elected to Chinese Academy of Sciences.



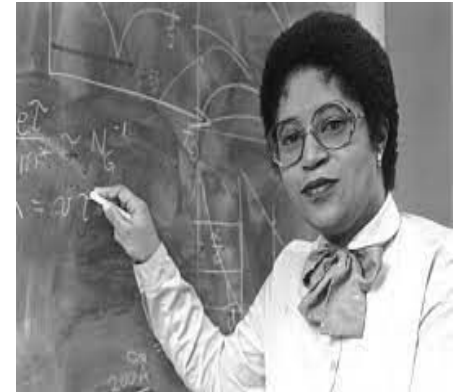
Shirley Ann Jackson



- Shirley is a woman physicist
- She is 74 years old. As she was born August 5th, 1946 in Washington D.C.
- She has a husband (Morris A. Washington) and a son (Alan Washington)
- In 1993, she won the New Jersey Governor's Award in Science.
- She has written two books: Published in 1996, Challenges for the nuclear power industry and its regulators.
- Published in 2003 was Envisioning a 21st century science and engineering workforce for the United States.
- Shirley attended Massachusetts

Institute of Technology

Trinity James



Mae Jemison

Danielle Cassata

Mae Jemison was born on October 17th 1956. She was the first African American woman to do go to space. She went to Stanford University and Cornell Medical school. Mae worked as a general practitioner before she worked at NASA. She also appeared on an episode of Star Trek. After being an astronaut for 6 years Jemison left NASA and taught at Dartmouth College. Mae wrote a book called "where the wind blows" which is about her life. She has won many awards such as the National Organization for Women's Intrepid Award and the Kilby Science Award.



NADYA MASON - by Abigail Spencer

- Nadya Mason grew up in Brooklyn heights. At the age of 7 she moved to D.C. with her mom, then at the age of 14 they moved to Houston.
- Nadya Mason is now a physics researcher.
- She received her bachelor's degree in physics from Harvard University in 1995 and received her doctorate in physics in 2001 from Stanford University, working in the group of Aharon Kapitulnik.
- She is a Professor of Physics at the University of Illinois at Urbana-Champaign. Where she focuses on how electrons behave in low-dimensional, correlated materials, where enhanced interactions are expected to give novel results.



Jami Valentine

By: Kann Grogan

Jami was born December 3, 1974 in Philadelphia. At a young age she had a love for math. As a highschooler, she knew she would be majoring in something in the math or science field. She attended Florida A&M University and got her Bachelors of Science in physics; then attended Brown for her Masters. Lastly, she attended John Hopkins for her PhD making her the first African American woman to do so. In 2016, she was honored with the Florida A&M University Distinguished Alumni Award. In February 2017 she was honored by the National Society of Black Physicists for distinguished service to the organization. Today Jami is 46 years old.



Helen R. Quinn

By: Kaitlyn Cortez

- She was born on May 19, 1943 in Melbourne, Australia.
- She got her Ph.D at Stanford (1967)
- She taught at Harvard and Stanford.
- She received many awards for her work in particle physics including: Sakurai prize, Dirac medal of the ICTP, the Benjamin Franklin Medal in Physics, etc.
- She helped form the Peccei-Quinn theory which basically predicted the axion.
- She was also a president of the American Physical Society.
- She retired in 2010.



Donna Theo Strickland



Donna Theo Strickland was born on May 27, 1959 in Ontario, Canada. She is a Canadian physicist who has made a great impact on the world of science. As a young adult, she always had an interest in physics.

Strickland attended McMaster University in Ontario. This is where she became interested in laser and electro-optic studies. In 1981, Donna Strickland graduated with a bachelor's degree in engineering physics. For further studies, she attended the University of Rochester. She worked

more with lasers with Gerard Mourou, a French physicist. They studied and experimented with ways a laser could have a short pulse, but produce a high, but safe amount of power. Together, they invented the CPA, Chirped Pulse Amplification. Strickland and Mourou did this by increasing the duration of the pulse to decrease the amount of power. This process is known as a chirp. The duration was then decreased to have a shorter pulse. Although the power was lowered, it still had a great impact because the time period of the pulse was

shortened. The laser can produce a petawatt (10^{15} watts) of power in about 10^{-15} of a second. This invention has made a great impact in the physics field of science and is able to help many people. The Chirped Pulse Amplification is now used in many eye surgeries. Donna Strickland became the third woman to win the Nobel Peace Prize for Physics in 2018 for the invention of the CPA. Donna Theo Strickland is currently working at the University of Waterloo in Ontario.

Interview with Donna Theo Strickland:
<https://youtu.be/fMRJTve47Lw>

By Sienna Mastroviti

Lise Meitner

Lise Meitner was born on November 7, 1878 in Austria. She received her doctorate from the University of Vienna in 1906. She was part of a team that helped isolate the isotope protactinium-231. Her team also products of neutron bombardment of uranium and beta decay. She fled from Nazi Germany to Sweden in 1938. In 1944 Hahn received the Nobel Prize for Chemistry for discovering nuclear fission. Meitner died October 27, 1968.

Kaymora Roberts





Vera Rubin

Allie Giordano

Vera Rubin (1928-2016) was an American astronomer who conducted pioneering work on galaxy rotation rates. Her work provided evidence for dark matter's existence. Rubin discovered an inconsistency between the predicted and the observed angular motions of galaxies by studying galactic rotation curves. This is what provided the strong and convincing evidence for dark matter, or matter that is composed of particles that do not reflect, absorb, or emit light. Rubin became an advocate for women in science and was honored with the National Medal of Science in 1993.



Marcia Keith

By: Isabella Chavez

- Marcia Keith was a physicist, teacher of physics to women, and a charter member of the American Physical Society since its founding in 1899.
- She was born in Brockton Massachusetts on September 10th, 1859.
- She attended Mount Holyoke College earning her Bachelor's of Science degree.
- Beginning in 1855, Keith taught mathematics at Mount Holyoke, and then became the school's first full time physics teacher in the physics department there.
- She was a pioneer in the education of women in the science of physics, and it is believed that she was the first to introduce individual laboratory work to students.
- **Research:** investigated the physics of heat transmission in gases at low temperatures
- Marcia Keith died in 1950 at age 90.



Sandra Moore Faber

Sandra Moore Faber was born on December 28, 1944, in Boston, Massachusetts. She is an American Astrophysicist. In 1966, she earned a Bachelor's Degree in Physics and then in 1972, she earned her PH.D. from Harvard. In the early seventies, she became the first woman on staff at the Lick Observatory, which is located in Mount Hamilton, California. Also at this time she was a professor of Astronomy and Astrophysics at the University of California, Santa Cruz. She made important discoveries in the linking of the brightness of galaxies to the speed of stars. In 1985 she was involved in the construction of the Keck Telescope and building the first wide-field planetary camera for the Hubble Space telescope. In 1985, she was awarded with Dannie Heineman for Astrophysics. Then in 2013, she was awarded with National Medal of Science for Physical Science.



By: Lily Torre

Fabiola Gianotti

By: Meghan Abruzzese



Fabiola Gianotti was born in 1960. She received her Ph.D. in experimental particle physics from the University of Milano in 1989. Since 1994 she has been a research physicist at CERN and since August 2013 an honorary Professor at the University of Edinburgh. She is a foreign associate member of the Italian Academy of Sciences, the national Academy of Sciences of the United States, the French Academy of Sciences, the Royal Society London, the Royal Academy of Sciences and the Arts of Barcelona and the Royal Irish Academy. She was included among the “Top 100 most inspirational women” by The Guardian newspaper (UK, 2011), ranked 5th in Time magazine’s Personality of the Year (USA, 2012) and included among the “Top 100 most influential women” by Forbes magazine (USA, 2013 and 2017). On January 1st, 2016 she became the first female Director-General of CERN. In 2019, she was renewed for a second term of office to start on 1st January 2021 .

Hedy Lamarr

By Elisabella Recio

Hedy Lamarr was an actress and pioneer inventor born in Vienna, 1914 and died in Casselberry, 2000. Lamarr made her great breakthrough in the early years of World War II when trying to invent a device to block enemy ships from jamming torpedo guidance signals. She discovered a way for the radio guidance transmitter and the torpedo's receiver to jump simultaneously from frequency to frequency, making it impossible for the enemy to locate and block a message before it had moved to another frequency. This came to be known as "frequency hopping." Lamarr is one person people can thank for their Wifi. When she died her son stated "She would love to be remembered as someone who contributed to the well-being of humankind."



Sabrina Gonzalez Pasterski

By: Sibelle Gutierrez Martinez

Pasterski is a female Cuban- American 24 year old physicist. She has been said to be, “The Next Albert Einstein”. She studies black holes and spacetime, particularly trying to explain gravity within the context of quantum mechanics. She has been cited by Stephen Hawking and Andrew Strominger, and has been offered jobs by NASA and Blue Origin, an aerospace research and development company Amazon.com founder Jeff Bezos. She’s also received hundreds of thousands of dollars in grants to support her work. She is extremely intelligent and talented.



Annie Jump Cannon

By: Yaretzi Moreno

Annie Jump Cannon was an American astronomer. She was born on December 11, 1863 in Dover, Delaware. She suffered from hearing loss. Cannon is known as the “census taker of the sky”. Cannon developed the Harvard spectral system and classified about 350,000 stars. She was the first woman to earn a Doctor of Astronomy degree from Groningen University and the first woman to receive an honorary degree from Oxford University. In 1931, Cannon was awarded the Henry Draper Medal of Honor from the National Academy of Sciences, the first woman to be awarded the medal. Cannon died on April 13, 1941.



Vera Rubin

By Lauren McCoy

Vera Rubin was born on July 23 in the year 1928. Vera Rubin grew up in Pennsylvania and then Washington D.C. where she found interest in the universe. Graduating from Vassar college with high honors, she went on to Cornell University to continue her study of astronomy. She was an important figure in the physics world because of her discoveries in the field of cosmological theory. Through her research she discovered the reason for the existence of dark matter, known as the galaxy rotation problem. Vera Rubin has been honored with multiple awards such as the National Medal of Science and the Bruce Medal for her research. She died on December 25, 2016.



Dr. Ann Preston

By: Madison Feliciano

Dr. Ann Preston was born in 1813 and she dies in 1872. She went to Female Medical College of Pennsylvania. Preston was a physician, activist, and teacher. Growing up her family's farm was used as a safe spot for runaway slaves. During her life time she fought against slavery and fought for women's rights. She was the first ever female dean of the Women's Medical College of Pennsylvania. When she did graduate she was one of eight women to have gotten a degree. Preston was one of the first women to get a degree and one of the first in her field and she fought for what she believed in. She inspires many girls who wish to teach or get into physics.



Carolyn Beatrice Parker

By : Gabrielle John

- Parker was born on November 18th, 1917 and succumbed to leukemia on March 17th, 1966.
- She is a physicist who worked on the Dayton Project. This was the research on plutonium and developing the Manhattan Project, she worked on this for four years from 1943-1947.
- Parker is considered to be the first African American to ever achieve a postgraduate degree in physics and in physics at MIT.
- Her illness prevented her from finishing her doctoral program: her death is thought to be a result of her research work during the Dayton Project.



Marietta Blau

By: Frida Mesa

Marietta Blau was born to a middle-class Jewish family, on April 29, 1894, Vienna. She studied physics and mathematics at the University of Vienna from 1914 to 1918. Blau is credited with developing (photographic) nuclear emulsions that were usefully able to image and accurately measure high energy nuclear particles and events. Which also established a method to accurately study reactions caused by cosmic ray events. Her nuclear emulsions significantly advanced the field of particle physics in her time. For her work she was nominated for the 1950 Nobel Prize in Physics. She died on January 27, 1970.



Current Women in Physics



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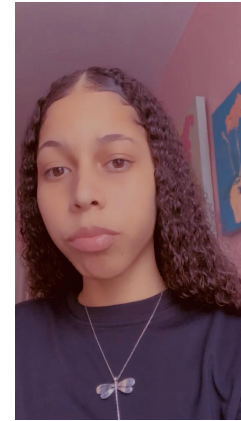
Kaymora Roberts



Talia McCray



Patricia Smith



Abigail Spencer