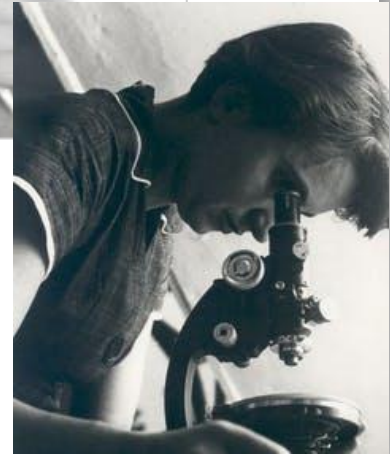




Women in Chemistry

Rosalind Franklin-Amber H

Rosalind Elsie Franklin (born July 25, 1920, in London, England—died April 16, 1958, in London) was a British scientist best known for her contributions to the molecular structure of deoxyribonucleic acid (DNA), a component of chromosomes that encodes genetic material. Franklin also added new knowledge about the shape of viruses, which helped develop structural virology. Her work contributed to the understanding of the structure of DNA, the building blocks of life. Franklin took X-Ray images of a molecule in 1952, revealing that DNA is made up of two strands intertwined in a double helix, similar to a twisted ladder.



Laila Mansour

Mary Lowe Good was born in 1931 in Texas. She had planned to become a home-economics teacher, but after learning about Marie Curie in a chemistry class at the University of Central Arkansas, she decided to pursue a career in chemistry. Most significantly, Good developed the Mössbauer spectroscopy, a technology able to examine the molecular structures of complex compounds that contain metal ions. Normally, this type of research on compounds would take a year to complete; she was able to do it in a few hours with her new technology. From there she became the Boyd Professor of Chemistry at LSU, the director of research and vice president of Universal Oil Products, the president of the American Chemical Society, served on the National Science Board and the Council of Advisors on Science and Technology in Washington D.C., and served as the undersecretary for technology in the U.S. Department of Commerce for four years. Good also collected numerous rewards. She became the first woman to be awarded the Priestley Medal by the American Chemical Society and was also awarded the National Science Foundation Distinguished Public Service Award, the American Institute of Chemists' Gold Medal, and the Othmer Gold Medal. Before her death in 2019, she also became president of the American Association for the Advancement of Science and was elected to the National Academy of Engineering. There is an interesting video about her successes from Science History Institute's Women in Chemistry page:

<https://youtu.be/TkS3nB529eo>

<https://www.sciencehistory.org/historical-profile/mary-lowe-good>

<https://www.sciencehistory.org/learn/women-in-chemistry>



Olivia Mansour

is a professor of engineering and the head of of engineering at MIT and has a PhD. She fell in love with chemistry in high nanotechnology and “has found polymers that increase the amount of p materials that reorganize their own molecules”. (sciencehistory.org) She Nanotechnology back in 2002, and has worked to try to make soldiers sa achieve this was a spray that almost instantly can clot blood. She has wo Research Program Teal Innovator Award in 2013 and the Distinguished S Foundation in 2010. This link shows the full list of her honors and award

<https://cheme.mit.edu/profile/paula-t-hammond/>

<https://www.sciencehistory.org/learn/women-in-chemistry>



This video is part of sciencehistory.org’s catalyst series, where they highlight the lives and achievements of female scientists:

Nyissa Jacques

From 1993 to 2001, Winifred Burks-Houck was the first woman president of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers.

Burks-Houck graduated from Dillard University with a bachelor's degree in chemistry and Atlanta University with a master's degree in organic chemistry. She was born in Anniston, Alabama, in 1950. She spent many years as an environmental chemist at the Lawrence Livermore National Laboratory, observing environmental risks, reducing possible threats to workplace safety, and guaranteeing that the lab had minimal impact on the environment throughout its operations.

3rd person:

<https://cen.acs.org/people/profiles/Six-black-chemists-sould-know/97/web/2019/02>



Nancy Chang- Elizabeth Berrie

Born in Taiwan in 1950 she worked her way up to be one of the most successful chemists. Nancy Chang was born in 1950 in Taiwan. Her family were not allowed to return to China due to political instability, so they remained in Taiwan. She co-founded Tanox in 1986 to resolve patient needs in the fields of allergy, asthma, inflammation, and immune system diseases. Tanox developed Xolair, an asthma medication that operates on the allergic reaction basis of asthma, in a unique way. She helped to cure thousands of lives as we know of today.



Kiran Mazumdar-Shaw

Kiran wanted to change society's view of women in India. She searched for a way to be herself no matter what her father wanted of her. She attended a private high school and graduated from Bangalore University in India with a double major in biology and zoology with dreams of becoming a doctor. After not passing a scholarship test for medical school, Kiran fought for a job knowing she didn't have another option. She became a brewmaster with her father, even though it wasn't in her comfort as a woman. Her father then made her attend a brewing school in Australia in an all-male class, but she got her sense of confidence. She got rejected as a brewmaster back in India and that is why she wanted to fight for women's rights. Aicon was a businessman that proposed with Kiran, to join a venture with his firm to create industrial enzymes for makes of beer, food, and textiles. The project involved growing microbes in large vats with specific pressure and temperature which she revealed herself to while learning to become a brewmaster.

By Mckayla Ramroop



Alice Ball

By: Liana Saunov

Alice Ball was born on July 24, 1892 in Seattle Washington. She was an African American chemist who invented a successful treatment for leprosy disease. Ball was also the very first African American and the first woman to graduate with a Masters in Science degree in chemistry from the University of Hawaii. Sadly, Alice Ball died at the age of 24 due to tuberculosis. She did not get to see the great impact her treatment had on people. Later on, she got credit for the treatment she discovered and earned it.



Stephanie Kwolek (1923-2014)- Giovanna Russo

Stephanie Kwolek was born in New Kensington, Pennsylvania. She graduated from Margaret Morrison Carnegie College with her degree in chemistry and applied for a position as a chemist with DuPont Company. In 1965, she had made an unexpected discovery that had eventually led to the creation of super strong fibers; not even bullets could tear through them. These fibers are the same ones that protect and save thousands of lives today. The most famous of these fibers are Kevlar. Kevlar is a heat resistant material that is five times stronger than steel. This is used in hundreds of products including bulletproof vests and tires.



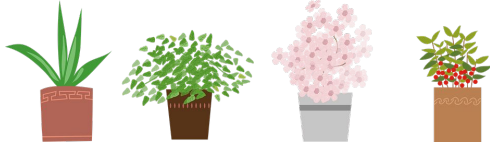
Marie Maynard Daly

Marie Maynard Daly was an American biochemist. She was the first African American woman in the United States to earn a Ph.D. in chemistry. She was born in April 16, 1921, Corona, New York, NY and died on October 28, 2003. Her father was from the West Indies and he wanted to pursue a dream of science but never could. He inspired her to become a biochemist. Daly developed programs to increase the number of minorities in medical schools and graduate science programs. There is a school in Queens named for Daly.

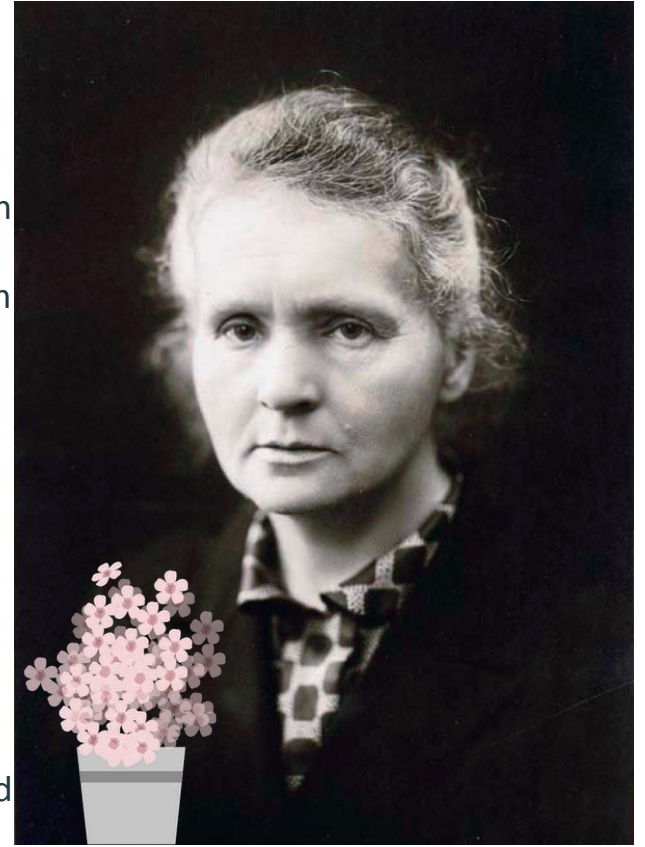
Candace Gittens



Ana Wu



Marie Curie, Born in Poland, more precisely in Warsaw, in 1867, being raised and educated by her father who was a primary school physics and mathematics teacher. Her father always prioritized the study of all children and Marie Curie did not waste this opportunity. Marie Curie in order to study and teach moved to France and in 1893 she became the first woman to complete a Physics Degree at the French University of Sorbonne. Nobel Prize in Physics was awarded in 1903 for studies related to radioactivity and the prize was shared with her husband, Pierre Curie and Henri Becquerel. After eight years she received the Nobel Prize in Chemistry for the discovery of the chemical elements Polonium and Radio, the first having been named in honor of the scientist's native country. For a long time Madame Curie it had a hard time being accepted into the academic and research milieu that was still massively formed by men despite its unprecedented feat of winning two Nobel prizes. In 1906 her husband passed away suddenly and Marie assumed her post as head of the Sorbonne Physics laboratory and Professor of Physics also in Sorbonne and was then the first woman to teach at this University.



Dr. Fe del Mundo

Dr. Fe Del Mundo was the founder of the first pediatric hospital in the Philippines, and she was conferred the rank and title of National Scientist of the Philippines. She first Asian woman admitted into Harvard, she pursued graduate degrees in America after receiving her medical degree from the University of the Philippines. She returned to the Philippines during World War II, and established a children's branch of a Japanese internment camp and directed the Manila Children's Hospital Del Mundo revolutionized Philippine medicine, making major breakthroughs in immunization and in the treatment of jaundice, and providing healthcare to thousands of poor families.

source : https://www.hws.edu/about/blackwell/del_mundo.aspx



Nicole Palmer

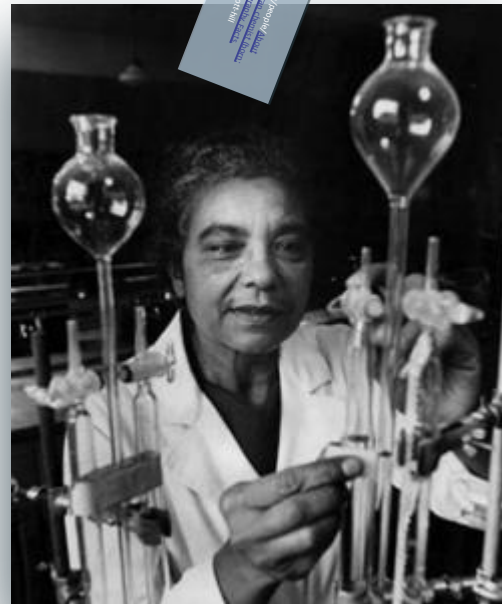
Mary Elliot Hill

Written by: Sabrina S.

Born on January 5th, 1907 in South Mills.,Camden County, North Carolina to Frances Bass and Robert Elliot, Mary Elliot Hill can be regarded as one of the first African-American Women to become a Chemist. She was raised in the segregated part of town, later to attend what was formerly known as Virginia State University for Negroes in 1925, to graduate with a Bachelor's degree in Chemistry, and meet her future husband, Carl McClellan Hill, After gaining her degree, she taught at multiple schools, including VSU Laboratory school in 1930, chemistry part-time at the Hampton Institute in 1937, returning to teach at VSU from 1938 to 1942, undertaking Grad school in the summer. Then from there, Mary awarded the first Black Woman a master's degree, teaching at Bennett College, and was appointed assistant professor of chemistry at Tennessee A & I State University. The following year, she moved to Kentucky State University (KSU), where her husband, Carl McClellan Hill, was head of the chemistry department. She was appointed associate professor, and acting head of the chemistry department from 1951 to 1952.

At KSU, Hill studied ultraviolet spectrophotometry, as well as working in Carl Hill's team. Carl Hill received funding for research on ketene synthesis, including from the National Science Foundation (NSF) and the U.S. Air Force. Mary Hill worked on monomeric ketenes, which could undergo polymerization, which is a step in the creation of plastics. The team used Grignard reagents to study chemical reactions in ketenes, with Mary Hill developing analytical methods for the work. Hill was a co-author on more than 40 papers. She died February 12th, 1969 in Frankfort, Franklin County, Kentucky

Overall, she was an amazing person and had such drive that kept everyone around her going!



Marie-Anne Paulze Lavoisier - Hayley Singh

Marie-Anne Paulze Lavoisier was born on January 20, 1758 in Morbitson, France. She was a french chemist as well as a noblewoman. She is famously known for being the “Mother of Modern Chemistry.” She was the wife of Antoine Lavoisier who was known as the “Father of Modern Chemistry: as well as the “God of Chemistry.” She accompanied her husband in his laboratory where she assisted him as well as contributed to his work. She played a significant role in being able to comprehend and explain scientific works. Both her and her husband is most acknowledged for their discovery of the role oxygen plays in combustion. Her husband named oxygen(1778) as well as hydrogen(1783). SHE contributed to the understanding of chemistry in the late 1700’s. Unfortunately Marie-Anne Paulze Lavoisier passed away on February 10, 1836 in Paris, France.



Dorothy Hodgkin (1910-1994) - Brooke Ferretti

Dorothy was born in Cairo Egypt on May 12, 1910. She was first interested in Chemistry when she received a crystal experiment book as a child. She went to Oxford University and graduated with great grades but still had trouble finding a job. Finally J.D Bernal gave her a chance at Cambridge University. Once Dorothy got her PhD from Cambridge, she returned to Oxford to study molecular biology where she made many different discoveries. She established an X Ray laboratory in the corner of the Oxford Museum of natural history. Later, she began work taking X-ray photographs of insulin. That was put on hold when some of her colleagues asked her to help them solve the structure of penicillin. By 1945, she had been able to describe the arrangement of the atoms. Penicillin was now the largest molecule to have succumbed to X-Ray methods. In 1947, Hodgkins work was recognized and she was elected to join the Royal Society, Britain's prime scientific academy Then, in around 1955, Dorothy discovered the structure of vitamin B. This led to her being nominated for a Nobel Prize and winning in 1964.



Uma Chowdhry

By: Kathryn Bachan

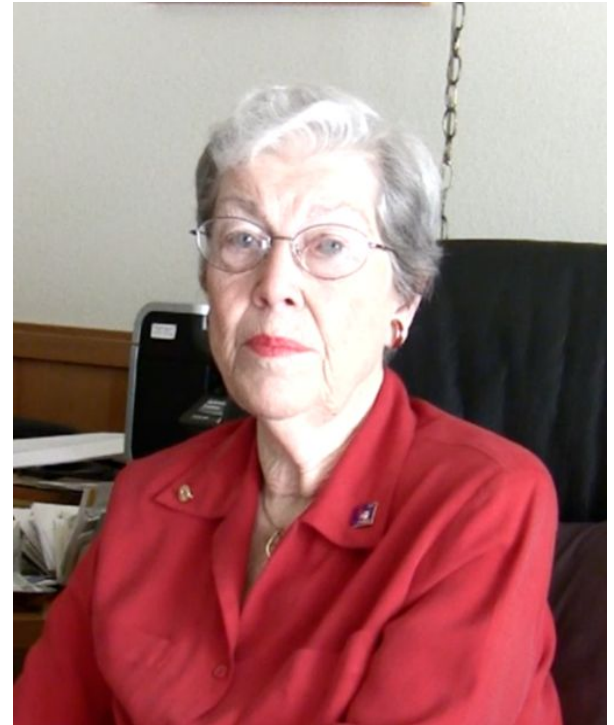
Uma Chowdhry was born in Mumbai, India, in 1947. She studied physics at the University of Bombay and then moved to the United States. She did research on ceramics, materials that do not normally conduct electricity and, in fact, are often used as insulators in electrical gadgets. Chowdhry applied chemistry to make ceramics that conduct electricity. She was able to make these ceramics conduct electricity even better than metals do. They have many potential uses in computers, batteries, and other electrical devices. The technologies she contributed to are now part of electronic packaging, photovoltaics, batteries, biofuel, and many sustainable products that fundamentally change the way we use everyday things.

<https://www.sciencehistory.org/historical-profile/uma-chowdhry>



Darleane C. Hoffman

Darlene Christian Hoffman (born November 8, 1926) is an American nuclear chemist who was among the researchers who confirmed the existence of Seaborgium, element 106. She is also a faculty senior scientist in the nuclear science division Lawrence Berkeley National Laboratory professor in The Graduate School at UC Berkeley. When she was a freshman in college at Iowa State College, she took a required chemistry course taught by Nellie May Nailor , and decided to pursue further study in that field. And in 1951, she got her degree in chemistry (nuclear) from Iowa State University. Darleane C. Hoffman was a chemist at Oak Ridge National Laboratory for a year and then joined her husband at the Los Alamos scientific Laboratory where she began as a staff member in 1953 and then she became the division leader of the chemistry and nuclear chemistry division in 1979. She helped found the seaborg institute for Transactinium science at LBNL in 1991 and became its first director, serving until 1996 when she “retired” to become senior advisor and Charter director.



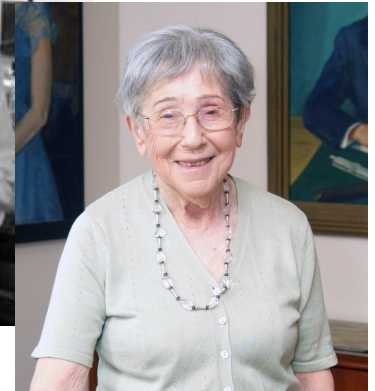
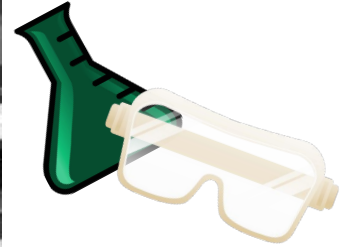
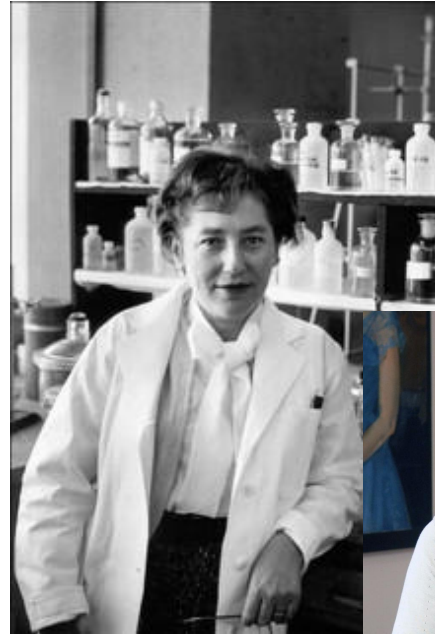
By: Valeria Azomosa

By: Ava Bowes

Mildred Cohn

Mildred Cohn was determined to prove that talent should be the only qualification for working in chemistry. At a time when open displays of prejudice against women and Jews were not uncommon, she fought for and won a place in high-level government and university laboratories.

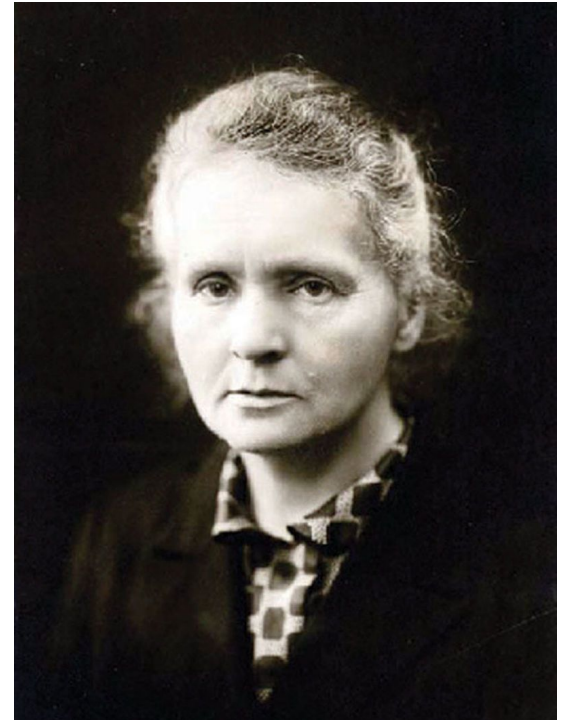
Cohn transformed the study of enzymes, building her own high-tech instruments when the right ones weren't available. She also helped pioneer the technique of nuclear magnetic resonance (NMR) and instruments like NMR spectrometers, which enabled her to study how enzymes and other proteins behave during chemical reactions in the body.



Marie Curie

Marie Curie lived from November 7th, 1867, to July 4th, 1934, she died from overexposure to radiation. Marie was a Pioneer and radioactivity Studies which helped find treatments for numerous diseases, she also worked at field hospitals during World War 1. Marie was born in Poland and studied at the University of Paris, while living in Paris she married her husband Pierre Curie. Marie had two children with Pierre while continuing her job as a chemist and physicist. Marie was so impactful with her research she won multiple Awards including the Nobel peace prize in physics Davy medal, Matteucci medal, Elliott Cresson medal, Albert medal, Nobel Prize in chemistry, Willard Gibbs award, and the Cameron prize for Therapeutics of the University of Edinburgh. She's the only person ever to win two Nobel Peace prizes in two separate fields. Marie also has a master's degree in physics and a degree in mathematics.

By: Sebastiana



Anna J. Harrison



Anna Jane Harrison (born December 23, 1912 in Benton City, MO, U.S.) was a American chemist who became the first woman president of the American Chemical Society and is also known for her advocacy inn increased public awareness for science. In her younger years, her intellectual interests led her to the University of Missouri, earning her bachelor's in 1933 and returned to her hometown to teach before two years later she returned to university and got her masters (1937) and doctorate (1940). Harrison then got a job as an instructor of chemistry at H. Sophie Newcomb Memorial College before performing research for the National Defense Research Council and for Corning Glass Works over the next couple of years. In 1945 she began teaching at Mount Holyoke College where she contributed on the research of ultraviolet light and photolysis. In the 1970s she became increasingly outspoken for the need to improve communication of science to the public and public officials. After her election as president of the American Chemical Society, Harrison continued to encourage the importance of a scientifically informed public. In 1979, she retired from Mount Holyoke but remained active in promoting communication of science and served multiple scientific councils. From 1983-84 she was president of the American Association for the Advancement of Science and in 1989 published **Chemistry: A Search to Understand** with Edwin S. Weaver, a former colleague at Mount Holyoke. She continued to work for the advancement of science until she unfortunately suffered a stroke and passed away in 1998, but her achievements will live on.

By: Ivy Tran

Agnes Pockels Caterina Cirone

Agnes Pockels was born in Venice, Italy in 1862. She and her family moved to Brunswick, Germany, in 1871 after her father fell sick with malaria. She wanted to study physics, but at the time women did not have access to universities. She got her scientific education through her older brother Friedrich Carl Alwin Pockels, known for the Pockels effect. According to several rumors, she discovered the influence of impurities of fluids while doing the dishes utilizing a devised apparatus called the Pockels trough. Irving Langmuir carried this discovery further and earned a Nobel Peace Prize in chemistry in 1932. The Pockels trough also was a direct antecedent of the Langmuir-Blodgett trough, developed by Langmuir and Katharine Blodgett. Agnes published her first paper, "Surface Tensions", in 1891, beginning her study on surface films. In 1931, she received the Laura Leonold award from the Colloid Society, earning an honorary PhD the next year. She died in 1935, never having been married.



Gertrude Elion

Gertrude Elion was an American biochemist and pharmacologist who developed drugs to treat leukemia and other diseases. Using a method known as “rational drug design,” Elion and her colleague George Hitchings were able to successfully interfere with cell growth, giving way to a number of effective drugs for treating leukemia, gout, malaria, herpes, and many other illnesses. She dedicated her life to studying medicine after her grandfather died from stomach cancer. After she graduated from Hunter College in 1937, she struggled finding a research job because she was a woman. In 1944, she was hired as a research chemist by Johnson & Johnson. She was offered another position working with nucleic acids alongside George Hitchings at Burroughs Wellcome Company. By 1950, Elion and Hitchings successfully synthesized two compounds, diaminopurine and thioguanine, which attract metabolic enzymes to latch onto them instead of natural purines, thereby blocking DNA production. This helped develop a treatment that could interfere with the formation of leukemia cells. Elion later went on to discover a series of drugs that attack the life cycle of nucleic acid. In the 1960s, Elion was successful in combating infectious diseases by targeting bacterial and viral DNA. She received the 1988 Nobel Prize in physiology and medicine for discovering methods of rational drug design for the development of new drugs.

By: Annabelle Gerez



Ida Noddack

Ida Noddack is a prominent female chemist born in 1896 in Wesel, Lackhausen. Ida went to the Technical University of Berlin and earned her doctorate degree, then becoming the first woman to earn the professional title of “Chemist”. One of her most notable accomplishments is the discovery of the periodic table element rhenium, that she discovered with Otto Carl Burg. Another thing she is very well known for is being the first person to propose the idea of nuclear fission. Sadly, at the time she proposed this, her ideas were ignored and the topic wasn’t proven until later.

By Giovanna Milisic





Kathleen Lonsdale

Julia Siconolfi

- Kathleen was born on January 28th, 1903, in Newbridge, County Kildare, Ireland. When she was only five years old, her family moved to Seven Kings, Essex, England. There, she earned her Bachelor of Science degree from Bedford College in 1922. In 1924, Kathleen became a part of the crystallography research team. She discovered the structure of benzene and hexachlorobenzene.
- Kathleen was awarded for her many accomplishments. To name a few, she earned a DSc from University of College London, and she was one of the first women to be elected for a Fellow of the Royal Society.
- Kathleen passed away in London, 1971, when she was 68 years old.

Irene Joliot-Curie

Irene Joliot-Curie is a battlefield radiologist, an activist, a politician and the daughter of two of the most famous scientists, Marie and Pierre Curie. With her husband, Fredric, she had discovered the first-ever artificially created radioactive atoms which paved the way for an innumerable amount of medical advances, especially towards the fight against cancer. Her education wasn't very normal as when she was a young teenager, she had attended a cooperative "school" that was organized by her mother where six professors had taught their children in their own subject of expertise which had ranged from physics and mathematics to German and art. Fame had struck her family in 1903 but quickly soon they were struck by tragedy as when Irene was eight years old, Pierre was killed in an accident on 1906. Marie began spending her time more with her daughters and over the years, Irene had taken over the place of her father who was a supporter and a colleague of her mother. In 1934, herself and her husband made a discovery that had altered the course of radiation research. After bombarding aluminum foil with alpha-particles, they noticed that the aluminum continued to emit positrons even after they stopped bombarding alpha-particles. They had concluded that the particle bombardment had converted the stable aluminium atoms into radioactive atoms. Sadly she passed away when she was 58 years old as she had died due to leukaemia which was caused by extensive exposure to radiation in 1956.



Camilla Sidletskeyy

Gerty Theresa Cori

Gerty Cori was Austro-Hungarian and worked as a biochemist and grew to be one of the first few women to ever get a Nobel Peace Prize in Science and the first to get a Nobel Peace Prize in Physiology or Medicine. She had been an extremely significant role in the discovery of the course of the catalytic conversion of glycogen. She constantly tried her hardest and would go to the research laboratory until the end of her life which sadly ended in 1957. Gerty received her deserved recognition for her achievements in chemistry through multiple awards and honors.



By: Jessica Baptiste

The unforgotten moments of my life are those rare ones which come after years of plodding work, when the veil over nature's secret seems suddenly to lift, and when what was dark and chaotic appears in a clear and beautiful light and pattern.

Gerty Cori (1896-1957)



Marie-Anne Paulze Lavoisier~Alicia Teesdale

Marie-Anne Pierrette Paulze (20 January 1758 in Montbrison, Loire, France – 10 February 1836) was a French chemist and noblewoman. Paulze accompanied Lavoisier in his lab during the day, making entries into his lab notebooks and sketching diagrams of his experimental designs. The training she had received from the painter Jacques-Louis David allowed her to accurately and precisely draw experimental apparatuses, which ultimately helped many of Lavoisier's contemporaries to understand his methods and results. Furthermore, she served as the editor of his reports. Together, the Lavoisiers rebuilt the field of chemistry, which had its roots in alchemy and at the time was a convoluted science dominated by George Stahl's theory of phlogiston. Paulze was also instrumental in the 1789 publication of Lavoisier's Elementary Treatise on Chemistry, which presented a unified view of chemistry as a field. This work proved pivotal in the progression of chemistry, as it presented the idea of conservation of mass as well as a list of elements and a new system for chemical nomenclature. Paulze contributed thirteen drawings that showed all the laboratory instrumentation and equipment used by the Lavoisiers in their experiments. She also kept strict records of the procedures followed, lending validity to the findings Lavoisier published.



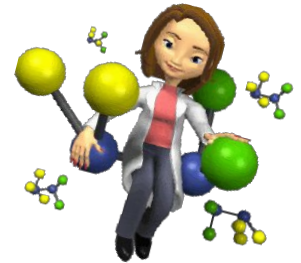
Kathryn Hach-Darrow



By: Ashley Reguillo

Kathryn "Kitty" Hach-Darrow (October 20, 1922 – June 4, 2020) was an American businesswoman who co-founded the Hach Chemical Company in 1947 with her first husband Clifford C. Hach (pronounced ha:k). She was essential to the company's expansion, flying her own plane to small airfields across the country to sell water purification kits. She became president, chief operating officer, and CEO of the Hach company.

Kathryn Hach-Darrow was also the first woman director of the American Water Works Association, an international non-profit working for better water quality. She has been noted for philanthropic work as well as entrepreneurship, and has received a number of awards and honors.





By: Gabrielle Hoque

Uma Chowdhry

Uma Chowdhry was born 1947 in Mumbai India. She is an American chemist whose career has been spent in research and management positions with E. I. du Pont de Nemours and Company. She has specialized in the science of ceramic materials, including catalysts, proton conductors, superconductors and ceramic packaging for microelectronics.

Katharine Burr Blodgett - Eileen Ryan

Katharine Burr Blodgett was an American chemist and physicist. She was born on January 10th, 1898 and died October 12th, 1979 at the age of 81. She was the first woman to get a Phd. in physics at the University of Cambridge. She was known for inventing a nonreflective form of glass. She also worked at the GE Research Laboratory in New York.



Name: Destiny McIntosh

Class: Chemistry 10

Date: March 2021!

**Chemist and Nobel Prize winner: Ada
Yonath**

Ada Yonath was born on June 22, 1939 in Geula Jerusalem. She received a bachelor's degree in chemistry in 1962, along with a master's degree in biochemistry in 1964 from Hebrew University in Jerusalem. She attended the Weizmann institute of science. She studied x-ray crystallography and received a Ph.D in 1968. Yonath joined the department of chemistry at the MIT (Massachusetts Institute of Technology). There she was a postdoctoral fellow and she began to investigate the structure of ribosomes using X-ray crystallography. She pioneered the development of new approaches to the study of the structural characteristics of complex molecules. From 1970 to 1974, she worked as a scientist in the department of chemistry at the Weizmann Institute. Yonath later became the senior scientist, associate professor, and the director of the Mazer Center for Structural Biology. She was also the director of the Kimmelman Center for Biomolecular Structure and Assembly at the Weizmann Institute and was the head of the Max Planck research Unit for ribosomal structure in Germany. In 1980, Ada Yonath became the first person to determine the three-dimensional atomic arrangement of a large ribosomal subunit. She conducted these studies by using ribosomes from the bacterium *Bacillus stearothermophilus*. Her research revealed the complex architecture of ribosomes, and she identified structures resembling tunnels, through newly synthesized polypeptide chains were passed during protein synthesis. She also developed a technique known as cryocrystallography, in which protein crystals are rapidly cooled, overcoming the limitation of radiation damage to protein crystals. She was elected a member of the Israel Academy of sciences and humanities in 2000, and the U.S. National Academy of sciences in 2003. In addition to the 2009 nobel peace prize, she also received the Louisa gross horowitz prize for biology or biochemistry in 2005.



Mary Lowe Good

Mary Lowe Good was born in Grapevine, Texas in 1931. Both of her parents were teachers. In 1943 her family moved to Kirby, Arkansas. She originally planned to become a home-economics teacher but while taking a mandatory chemistry class she learned about Marie Curie and she was inspired about her scientific achievements. She changed her major and graduated with her Ph.D. in chemistry. She served on the National Science Board under President Jimmy Carter and Ronald Reagan. In 1997 she became the first woman to receive the Priestley Medal, the highest honor given by the American Chemical Society. She was also elected to the National Academy of Engineering in 1987 and has received a lot of other awards, including the National Science Foundation Distinguished Public Service Award.



By: Nicole Ogiste



Maud Leonora Menten

Maud Leonora was born on March 20, 1879 in Port Lambton, Canada. Her family was well off owning and operating a Hotel. In 1900 she left Harrison to attend the University of Toronto, where she received a bachelor's degree. In 1904 she began to research and write a thesis on nerve cells. She then got a masters degree. In 1911 she became one of the first Canadian-born women to earn a medical degree. She explored enzyme kinetics with a biochemist named Leonor Michaelis. Both of them working together produced the Michaelis-Menten equation: $V = \frac{V_M[S]}{K_M + [S]}$. She also worked on the mobility of proteins. She published over 70 papers in her career. After retirement, she died of poor health on July 26, 1960 at age 80. She was selected for induction into the Canadian Medical Hall of Fame.

By Je-Niece Caesar

Gertrude B. Elion

Gertrude B. Elion was an American biochemist and pharmacologist, and shared the 1988 Nobel Prize in Physiology or Medicine with George H. Hitchings and Sir James Black for their use of innovative methods of rational drug design for the development of new drugs. She graduated Hunter college in 1937 with a degree in chemistry. From 1967 to 1983, she was the Head of the Department of Experimental Therapy for Burroughs Wellcome. She then published more than 25 papers with the students she mentored at Duke as a Research Professor. She tried to get her doctorate at Brooklyn Polytechnic Institute. But had to give it up for her job. She later earned 3 honorary doctorates from various universities. Her work led to the creation of the AIDS drug AZT.



Edith M. Flanigan

Edith M. Flanigan is a New York born chemist known for her work with the synthesis of emeralds and her work on zeolites for molecular sieves at Union Carbide. She was a chemistry teacher at Holy Angels Academy in Buffalo for some of her life. Before teaching, she majored in chemistry at D'Youville College, she obtained an M.S. in inorganic physical chemistry from Syracuse University in 1952. Flanigan is most famous for developing "zeolite Y," a molecular sieve that is important in refining petroleum. Over her life time, she had recieved many awards including the Chemical Pioneer Award of the American Institute of Chemists (1991), the Perkin Medal of the Society of Chemical Industry (1992), the Garvan Medal of the American Chemical Society (1993), the Lemelson-MIT Lifetime Achievement Award (2014), and the National Medal of Technology and Innovation (2012). Finally, In 2004, she was inducted into the National Inventors Hall of Fame. She is currently still alive, living at 92yrs old.



Helen M. Free (Bria Rollins)



Helen M. Free was born on February 20, 1923 in Pittsburgh. In 1941, she attended the College of Wooster to become an English/Latin Teacher. Around this time males were being drafted for war so women were encouraged to take male dominated classes. Free changed her major, because she realized she loved chemistry more. After finishing her degree in 1944, she got a chance to work with a biochemist. They ended up becoming lifelong research partners. In the first project, they could test a diabetes patient's glucose level from the urine. This test was one of the first tests that could be done without elaborate lab facilities. In 1981, the group developed the revolutionary Multistix, which was a single strip for urinalysis of 10 different clinical tests. In 1993, she was the 3rd of only seven women elected president of ACS. The ACS gave her an award in Public Outreach. Free and her husband also made the National Inventors Hall of Fame in 2000, and the Science and Engineering Hall of Fame.

Jennifer Doudna by Erica Bodkin

Jennifer Anne Doudna was born February 19, 1964. She is an American biochemist known for her pioneering work in CRISPR gene editing. She was awarded the Nobel Prize in Chemistry. Doudna is the Li Ka Shing Chancellor's Chair Professor in the Department of Chemistry and the Department of Molecular and Cell Biology at the University of California. Doudna grew up in Hilo, Hawaii. She graduated from Pomona College in 1985 and received a Phd from Harvard Medical School in 1989. She is the president and chair of the board of the Innovative Genomics Institute. Doudna has been named one of the Time 100 most influential people in 2015. In 2017 she was the lead author of *A Crack in Creation: Gene Editing and the Unthinkable Power to control Evolution*.



Paula Hammond

Paula Hammond is a professor and is the head of MIT Department of Chemical Engineering. While she was working at Radcliffe Institute she discovered a project that allowed for the creation of polymers that form micelles in water. So she started manufacturing them there. This can help assist drug delivery. Paula Hammond made a research agreement with Ferrosan to construct a bandage. She also participated in a Cancer research program and she has helped found the Institute for Soldier Nanotechnologies.



Paula Hammond a woman in chemistry Slide by Vita DiBona