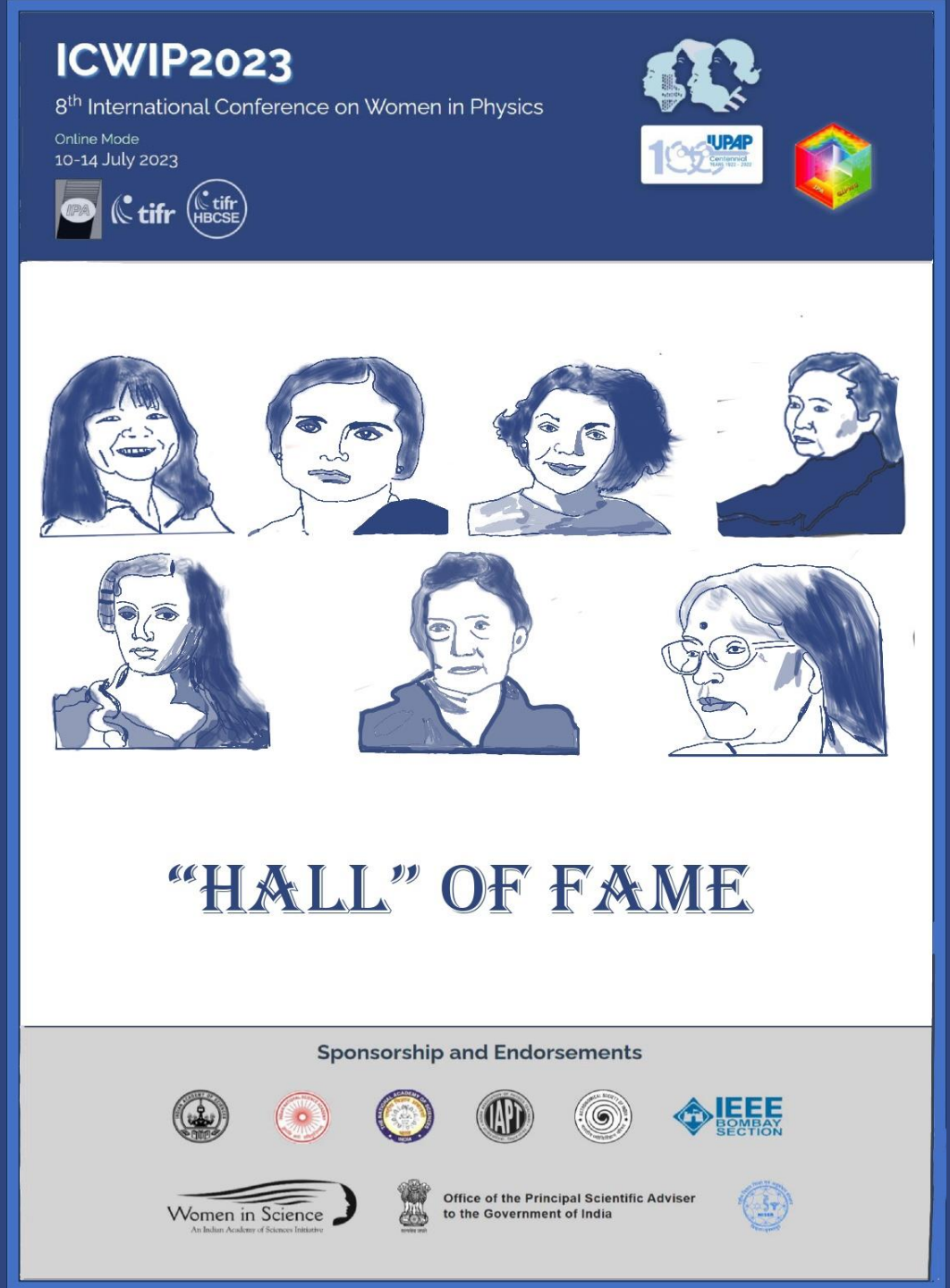
A booklet of biographies of Women after whom the various virtual rooms of the ICWIP 2023 Conference have been named



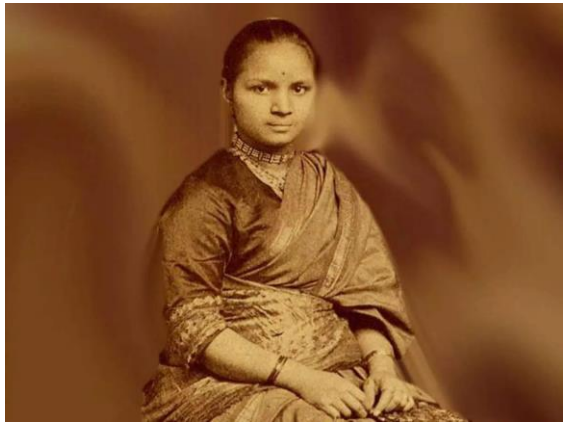
Agnes Luise Wilhelmine Pockels

(February 14, 1862 – November 21, 1935)

A L W Pockels was a German scientist whose research was fundamental in establishing the modern discipline known as surface science, which describes the properties of liquid and solid surfaces and interfaces. Pockels became interested in fundamental research in surface science through observations of soaps and soapy water in her own home while washing dishes. She devised a surface film balance technique to study the behavior of molecules such as soaps and surfactants at air-liquid interfaces. From these studies, Pockels defined the "Pockels Point" which is the minimum area that a single molecule can occupy in monomolecular films. Pockels was an autodidact. She was not a paid, professional scientist and had no institutional affiliation and so is an example of a citizen scientist.

Source: Wikipedia

Anandibai Joshi



- Anandibai Gopalrao Joshi was the first Indian female doctor of western medicine.
- She was the first woman from the erstwhile Bombay presidency of India to study and graduate with a two-year degree in western medicine in the United States.
- She was married at the age of nine to Gopalrao Joshi, a widower almost twenty years her senior.
- At the age of fourteen, Anandibai gave birth to a boy, but the child lived only for a total of ten days due to lack of medical care. This proved to be a turning point in Anandi's life and inspired her to become a physician.
- Despite practicing medicine for only two to three months, she rose to fame for her sheer determination and hardwork, to become the first Indian female to study western medicine, becoming an inspiration to all others who came after her.

https://en.wikipedia.org/wiki/Anandi_Gopal_Joshi

Ann Nelson

- Ann Nelson was a renowned theoretical physicist who specialized in elementary particle physics, and had been at the University of Washington since 1994.
- She was a member of the National Academy of Sciences and the American Academy of Arts and Sciences, and was a recipient of the J. J. Sakurai prize for theoretical Particle Physics.
- She was also a passionate advocate for inclusion and diversity in Physics, penning this article in Physics Today.

https://scholar.google.com/citations?user=-2il5fUAAAAJ&hl=en

Anna Mani

23 August 1918 – 16 August 2001

Anna Mani was an Indian physicist and meteorologist, known as the weather women of India. She retired as the Deputy Director General of the Indian Meteorological Department.

Mani worked under Prof. C V Raman, researching the optical properties of ruby and diamond.

She standardized the drawings of close to one hundred weather instruments, making India independent in weather instruments. In 1957 and '58, she set up a network of stations to measure solar radiation.

In 1963 at the request of Vikram Sarabhai, she successfully set up a meteorological observatory and an instrumentation tower at the Thumba Rocket Launching Facility.

Books : 'Handbook of Solar Radiation Data for India' and 'Solar Radiation Over India'.

She was associated with the Indian National Science Academy, American Meteorological Society, International Solar Energy Society, World Meteorological Organisation, and the International Association for Meteorology and Atmospheric Physics. In 1987, Mani was a recipient of the INSA K. R. Ramanathan Medal.

https://en.wikipedia.org/wiki/Anna_Mani

Bibha Chowdhuri

(July 3, 1913 – June 2, 1991)

Bibha Chowdhuri was an Indian physicist. She joined the Bose Institute after graduating in 1939 and worked with Debendra Mohan Bose. Together, they experimentally observed muons and published on cosmic rays. She studied batches of Ilford half-tone plates that were exposed to cosmic rays at different altitudes. She noticed that the decays were curved, likely due to multiple scattering of particles. They could not take the investigation further because there were not more sensitive emulsion plates available. Chowdhuri joined the laboratory of Patrick Blackett for her doctoral studies, working on cosmic rays at the University of Manchester. The IAU has re-christened the star HD 86081 as Bibha (a yellow-white dwarf star in the constellation Sextans south of the celestial equator) after her.

Source: Wikipedia

Carolyn Parker

(November 14, 1917 – March 17, 1966)

Carolyn Parker was a physicist who worked from 1943 to 1947 on the Dayton Project, the polonium research and development arm of the Manhattan Project. She was one of a small number of African American scientists and technicians on the Manhattan Project. She then became an assistant professor in physics at Fisk University. Parker earned two master's degrees, one in mathematics from the University of Michigan in 1941 and one in physics from MIT in 1951. According to family, her completion of a doctorate in physics at MIT was prevented by the leukemia that would kill her at age 48. Leukemia was an occupational risk for workers on the Dayton Project.

Parker is the first African-American woman known to have gained a postgraduate degree in physics.

Source: Wikipedia

Chien-Shiung Wu

(May 31, 1912 – February 16, 1997)

Chien-Shiung Wu was a Chinese-American particle and experimental physicist who made significant contributions in the fields of nuclear and particle physics. Wu worked on the Manhattan Project, where she helped develop the process for separating uranium into uranium-235 and uranium-238 isotopes by gaseous diffusion. She is best known for conducting the Wu experiment, which proved that parity is not conserved. This discovery resulted in her colleagues Tsung-Dao Lee and Chen-Ning Yang winning the 1957 Nobel Prize in Physics, while Wu herself was awarded the inaugural Wolf Prize in Physics in 1978. Her expertise in experimental physics evoked comparisons to Marie Curie. Her nicknames include the "First Lady of Physics", the "Chinese Madame Curie" and the "Queen of Nuclear Research"

Source: Wikipedia

Deborah S Jin

(November 15, 1968 – September 15, 2016)

Deborah S Jin was an American physicist and fellow with the National Institute of Standards and Technology (NIST); Professor Adjunct, Department of Physics at the University of Colorado; and a fellow of the JILA, a NIST joint laboratory with the University of Colorado. She was considered a pioneer in polar molecular quantum chemistry. From 1995 to 1997 she worked with Eric Cornell and Carl Wieman at JILA, where she was involved in some of the earliest studies of dilute gas Bose-Einstein condensates. In 2003, Dr. Jin's team at JILA made the first fermionic condensate, a new form of matter. She used magnetic traps and lasers to cool fermionic atomic gases to less than 100 billionths of a degree above zero, successfully demonstrating quantum degeneracy and the formation of a molecular Bose-Einstein condensate. In 2002, Discover magazine recognized her as one of the 50 most important women in science.

Source: Wikipedia

Emmy Noether

23 March 1882 – 14 April 1935

Amalie Emmy Noether was a German mathematician who made many important contributions to abstract algebra.

She studied mathematics at the University of Erlangen. She completed her doctorate in 1907 under the supervision of Paul Gordan, she then worked at the Mathematical Institute of Erlangen without pay for seven years. In 1915, she was invited by David Hilbert and Felix Klein to join the mathematics department at the University of Göttingen.

She proved the theorem now known as Noether's theorem, which shows that a conservation law is associated with any differentiable symmetry of a physical system. It had a significant effect upon classical and quantum mechanics, among mathematicians, she is best remembered for her contributions to abstract algebra.

In 1932 Emmy Noether and Emil Artin received the Ackermann–Teubner Memorial Award for their contributions to mathematics. Nevertheless, her colleagues expressed frustration at the fact that she was not elected to Göttingen *Gesellschaft der Wissenschaften* (academy of sciences) and was never promoted to the position of *Ordentlicher Professor*.

https://en.wikipedia.org/wiki/Emmy_Noether

Hema Ramachandran

- Hema Ramachandran a renowned scientist and one of the founding member of Light matter physics department in Raman Research Institute (RRI), Bengaluru, India.
- She was a Professor and served as Head, Research Facilities at RRI.
- She was the recipient of the Homi Bhabha Award in 1984. She also received INSA Young Scientist Award 1992.

https://wwws.rri.res.in/htmls/library/imprints_collection/bios/hema.html

Irawati Karve

15 December 1905 – 11 August 1970

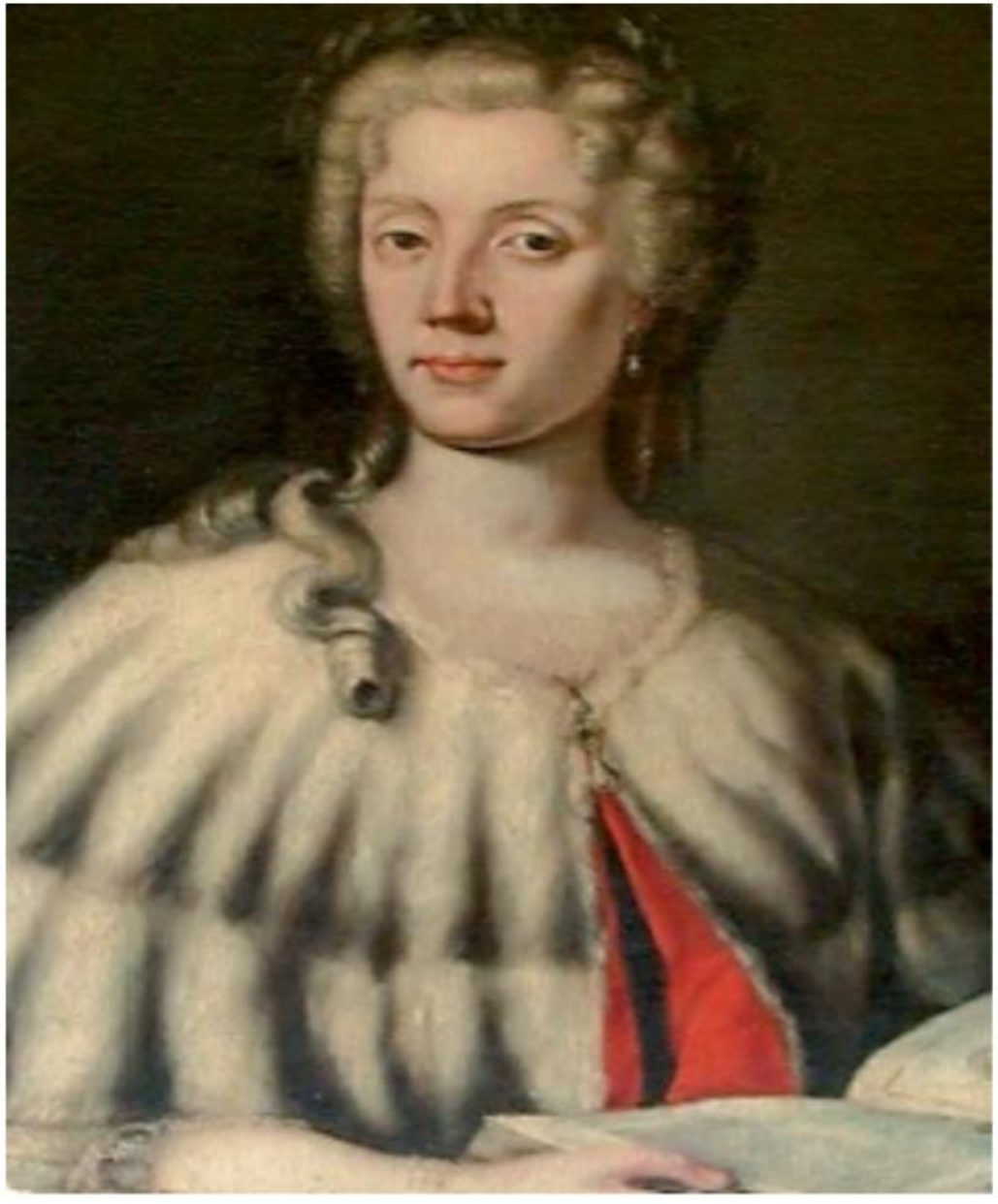
Irawati Karve was a pioneering Indian sociologist, anthropologist, educationist and writer from Maharashtra, India. She has been claimed to be the **first** female Indian Sociologist.

Karve worked as an administrator at SNDT Women's University in Bombay from 1931 to 1936 and then e moved to Pune's Deccan College as a Reader in sociology in 1939 and remained there for the rest of her career. She **founded** the department of anthropology at what was then Poona University (now the University of Pune).

Among Karve's publications are:

- *Kinship Organization in India* (Deccan College, 1953), a study of various social institutions in India.
- *Hindu Society — an interpretation* (Deccan College, 1961), a study of Hindu society based on data.
- *Maharashtra — Land and People* (1968) - describes various social institutions and rituals in Maharashtra.
- *Yuganta: The End of an Epoch*, a study of the main characters of the *Mahabharata* treats them as historical figures and uses their attitudes and behavior to gain an understanding of the times in which they lived. The book won the 1967 Sahitya Academy.

https://en.wikipedia.org/wiki/Irawati_Karve



Laura Maria Caterina Bassi Veratti

(October 29, 1711 – February 20, 1778)

Laura Bassi was an Italian physicist and academic. Recognized and depicted as "Minerva" (goddess of wisdom), she was the first woman to have a doctorate in science, and the second woman in the world to earn the Doctor of Philosophy degree. Working at the University of Bologna, she was also the first salaried female teacher in a university. At one time the highest paid employee of the university, by the end of her life Bassi held two other professorships. She was also the first female member of any scientific establishment, when she was elected to the Academy of Sciences of the Institute of Bologna in 1732 at 21. Bassi became the most important populariser of Newtonian mechanics in Italy. She was inducted by the Pope to the Benedettini as an additional member in 1745. She took up the Chair of Experimental Physics in 1776, the position she held until her death.

Source: Wikipedia

Lise Meitner

7 November 1878 – 27 October 1968

Lise Meitner was an Austrian-Swedish physicist — one of those responsible for the discovery of the element protactinium and nuclear fission.

In 1905, Meitner became the **second woman** from the University of Vienna to earn a doctorate in physics and was the **first woman** to become a full professor of physics in Germany.

While working on radioactivity at the Kaiser Wilhelm Institute of Chemistry in Berlin, she discovered the radioactive isotope protactinium-231 in 1917.

In mid-1938, Meitner with chemists Otto Hahn and Fritz Strassmann at the Kaiser Wilhelm Institute found that bombarding thorium with neutrons produced different isotopes.

Despite the many honours that Meitner received in her lifetime, she did not receive the Nobel Prize although she was nominated 49 times for Physics and Chemistry Nobel Prizes but never won.

https://en.wikipedia.org/wiki/Lise_Meitner

Marietta Blau

29 April 1894 – 27 January 1970

Marietta Blau was an Austrian physicist credited with developing photographic nuclear emulsions, used in the study of cosmic rays, being the first scientist to use nuclear emulsions to detect neutrons.

Her PhD, on the absorption of gamma rays, was awarded in March 1919.

Blau's main interest was the development of the photographic method of particle detection. The methodical goals which she pursued were the identification of particles, in particular alpha-particles and protons, and the determination of their energy based on the characteristics of the tracks they left in emulsions.

Her nuclear emulsions significantly advanced the field of particle physics in her time.

She was awarded the Lieben Prize by the Austrian Academy of Sciences. In 1962, she received the Erwin Schrödinger Prize of the Austrian Academy of Sciences, but an attempt to make her also a corresponding member of the Academy was not successful. She was nominated for Nobel Prizes in both physics and chemistry for her work, but did not win.

https://en.wikipedia.org/wiki/Marietta_Blau

Meenakshi Narain

- Meenakshi Narain was an Indian-born American experimental physicist. She was a Professor of Physics and Chair of the Department of Physics at Brown University, and was also Chair of the Collaboration Board of U.S. institutions in the Compact Muon Solenoid (CMS) Collaboration.
- Narain was a Fellow of the American Physical Society. She had been a Wilson Fellow at Fermilab and had received a Professional Opportunities for Women in Research and Education grant, Major Research Infrastructure grants, and the CAREER Award from the National Science Foundation.
- She is also a recipient of the Outstanding Junior Investigator Award from the US Department of Energy.

https://vivo.brown.edu/display/mnarain

Mrinalini Sarabhai

- Mrinalini Vikram Sarabhai was an Indian classical dancer, choreographer and instructor.
- She was the founder and director of the Darpana Academy of Performing Arts, an institute for imparting training in dance, drama, music and puppetry, in the city of Ahmedabad, India.
- She received Padma Bhushan in 1992 and Padma Shri in 1965. She also received many other citations in recognition of her contribution to art.

https://en.wikipedia.org/wiki/Mrinalini_Sarabhai

Purnima Sinha

(October 12, 1927 – July 11, 2015)

Purnima Sinha was an Indian physicist and was one of the first Bengali women to receive a doctorate in physics. She did tremendous work in the field of x-ray crystallography of clay minerals. She was raised by a progressive family in a traditional era. She was able to further her education and led a life where she was able to pursue her passion of physics and engage in artistic activities such as singing, painting, and writing. She built an X-ray setup, and went on to study different types of clay from all over India. Later on, she joined the Biophysics Department at Stanford University's 'Origin of Life' project, which had an interface with her work. She compared the X-ray structure of clay with DNA patterns, geometrically, and was fascinated to find a connection.

Source: Wikipedia

Rosalyn Sussman Yalow (Nobel Prize in Physiology or Medicine 1977)

- Rosalyn Sussman Yalow became a physicist at a time when being a woman was a serious impediment to success.
- But with her research partner Solomon Berson, she made a transformative contribution to medical research : radioimmunoassay, a method for measuring concentrations of substances in the blood.
- She was the co-winner of the 1977 Nobel Prize in Physiology or Medicine (together with Roger Guillemin or Andrew Schally) for development of the radioimmunoassay technique.

- She was the second woman (after Gerty Cori), and the first American-born woman, to be awarded the Nobel Prize in Physiology or Medicine.

https://www.nobelprize.org/prizes/medicine/1977/yalow/biographical/

Susan Solomon

January 19, 1956 —

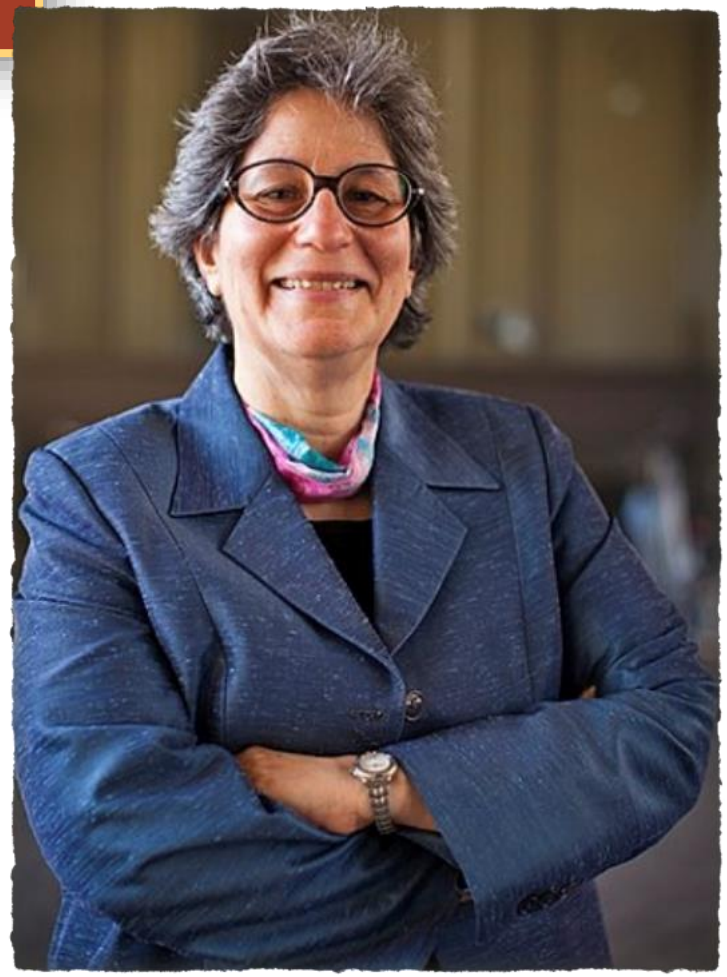
Susan Solomon is an American atmospheric chemist, working for most of her career at the National Oceanic and Atmospheric Administration.

She is currently a faculty of the Department of Earth, Atmospheric and Planetary Sciences at the Massachusetts Institute of Technology.

Solomon, with her colleagues, was the first to propose the chlorofluorocarbon free radical reaction mechanism that is the cause of the Antarctic ozone hole.

Books: The Coldest March: Scott's Fatal Antarctic Expedition, Yale University Press, 2002; Aeronomy of the Middle Atmosphere: Chemistry and Physics of the Stratosphere and Mesosphere, Springer, 2005

Solomon is a member of the U.S. National Academy of Sciences, the European Academy of Sciences, and the French Academy of Sciences.
2002— *Discover* magazine recognized her as one of the 50 most important women in science.
2008 — She was selected by *Time* magazine as one of the 100 most influential people in the world.[21]



https://en.wikipedia.org/wiki/Susan_Solomon