

## Women in Science and Engineering

The Arts & Sciences Libraries (ASL) permanent exhibit: **Women in Science and Engineering**, features photographs and biographies of famous women scientists. The exhibit, on display in the Science & Engineering Library (SEL), provides a visual statement to acknowledge the scientific and technical achievements of women. The current group of women featured in this revolving exhibit are:

 <p>(<a href="http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Wheeler.html">http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Wheeler.html</a>)</p> <p><b>Anna Pell Wheeler</b> (1883-1966) <b>Mathematician</b></p> <p>Emminent scholar and educator; her research centered on functional analysis. First woman to deliver the prestigious Colloquium Lectures of the American Mathematical Society in 1927.</p>	 <p><b>Margaret Mead</b> (1901-1978) <b>Anthropologist</b></p> <p>Authority in cultural anthropology; best known for her research on the impact of culture on gender roles. A prolific and popular author, she published widely on issues including: family, race, and women in world cultures.</p>	 <p><b>Annie Jump Cannon</b> (1863-1941) <b>Astronomer</b></p> <p>Expert in spectrograms, she developed the star classification system; during her more than forty Harvard College Observatory, she cataloged ov</p>
 <p>(<a href="http://nobelprize.org/medicine/laureates/1986/levi-montalcini-autobio.html">http://nobelprize.org/medicine/laureates/1986/levi-montalcini-autobio.html</a>)</p> <p><b>Rita Levi-Montalcini</b> (b. 1909) <b>Biologist</b></p> <p>Researcher noted for her discoveries of the NGF (nerve growth factor) and the EGF (epidermal growth factor); winner of the 1986 Nobel Prize in medicine.</p>	 <p>(<a href="http://nobelprize.org/medicine/laureates/1988/elion-autobio.html">http://nobelprize.org/medicine/laureates/1988/elion-autobio.html</a>)</p> <p><b>Gertrude B. Elion</b> (b. 1918) <b>Pharmacologist</b></p> <p>Researcher and inventor of drugs for the treatment of cancer, rheumatoid arthritis, herpes virus and kidney disease. 1988 Nobel prize winner in medicine for her development of <i>azathioprine</i>, a drug that prevents organ rejection in transplant patients.</p>	 <p>(<a href="http://www.physics.ucla.edu/%7Eecwp/Phase2/Wu_Chien">http://www.physics.ucla.edu/%7Eecwp/Phase2/Wu_Chien</a>)</p> <p><b>Chien-Shiung Wu</b> (b. 1912) <b>Nuclear Physicist</b></p> <p>Awarded the National Medal of Science in 1976 experimental work in the precise measurement various types of interactions, including: weak in sickle cell anemia and X-rays and gamma rays atoms.</p>

Women have contributed richly to the achievements of science and engineering in the United States. As pointed out by the National Women's History Project, it is unfortunate that many of these accomplishments have been forgotten, ignored, and even hidden as a result of cultural and social norms. Recent years have seen great strides in recognizing the contributions of women in all disciplines and fields of study.

The National Women's History Project has been one of the organizations to lead the way. The *Women in Mathematics and Science* poster and *Outstanding Women in Math and Science* photographic series were produced by the National Women's History Project (<http://www.nwhp.org/>) in Windsor, California.

SEL has also acquired the poster set, *Inventive Women*, which features the accomplishments and patents of eleven women inventors. A portrait of the inventor, a brief description of her achievements, and a list of five other women inventors in the same field comprise each poster. These posters are complemented by a poster which provides a narrative of the history of women inventors. (This series was also produced by the National Women's History Project and partially funded by a grant from AT&T.)

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### Profiles:

Ada. Countess of Lovelace (<http://www.agnesscott.edu/riddle/women/love.htm>) (1815-1852) Mathematician  
Ada. Countess of Lovelace (<http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Lovelace.html>) (1815-1852) Mathematician  
Maria Gaetana Agnesi (<http://www.agnesscott.edu/riddle/women/agnesi.htm>) (1718-1799) Mathematician  
Maria Gaetana Agnesi (<http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Agnesi.html>) (1718-1799) Mathematician  
Florence Bascom (<http://www.usgs.gov/125/articles/bascom.html>) (geologist)  
Elizabeth Blackwell (<http://www.nlm.nih.gov/hmd/blackwell/>) (1821-1910) 1st U.S. woman to earn medical degree

[Rachel Brown](http://jchemed.chem.wisc.edu/JCEWWW/Features/eChemists/Bios/Brown.html) (<http://jchemed.chem.wisc.edu/JCEWWW/Features/eChemists/Bios/Brown.html>) (1898-1980) Biochemist

[Rachel Brown](http://www.invent.org/hall_of_fame/20.html) ([http://www.invent.org/hall\\_of\\_fame/20.html](http://www.invent.org/hall_of_fame/20.html)) (1898-1980) Biochemist

[Annie Jump Cannon](http://www.wellesley.edu/Astronomy/annie/) (<http://www.wellesley.edu/Astronomy/annie/>) (astronomer)

[Rachel Carson](http://www.rachelcarson.org/) (<http://www.rachelcarson.org/>) (marine biologist, author)

[Irene Joliot Curie](http://www.physics.ucla.edu/%7Ecwp/Phase2/Joliot-Curie_Irene@841891460.html) ([http://www.physics.ucla.edu/%7Ecwp/Phase2/Joliot-Curie\\_Irene@841891460.html](http://www.physics.ucla.edu/%7Ecwp/Phase2/Joliot-Curie_Irene@841891460.html)) (1897-1956) Nuclear Physics

[Marie Curie](http://www.aip.org/history/curie/contents.htm) (<http://www.aip.org/history/curie/contents.htm>) (1867-1934) Physics Nobel Prize 1903

[Gertrude B. Elion](http://www.nobel.se/medicine/laureates/1988/elion-autobio.html) (<http://www.nobel.se/medicine/laureates/1988/elion-autobio.html>) (pharmacologist; inventor: chemotherapy drugs)

[Dian Fossey](http://www.webster.edu/%7Ewoolfm/dianfossey.html) (<http://www.webster.edu/%7Ewoolfm/dianfossey.html>) (primatologist)

[Rosalind Franklin](http://www.sdsc.edu/ScienceWomen/franklin.html) (<http://www.sdsc.edu/ScienceWomen/franklin.html>) (1920-1958) DNA Structure

[Anna Freud](http://www.webster.edu/%7Ewoolfm/annafreud.html) (<http://www.webster.edu/%7Ewoolfm/annafreud.html>) (1895-1982) Child Psychoanalysis

[Anna Freud](http://www.freud.org.uk/fmanna.htm) (<http://www.freud.org.uk/fmanna.htm>) (1895-1982) Child Psychoanalysis

[Lillian Moller Gilbreth](http://www.sdsc.edu/ScienceWomen/gilbreth.html) (<http://www.sdsc.edu/ScienceWomen/gilbreth.html>) (industrial engineer)

[Maria Goeppert-Mayer](http://www.nobel.se/physics/laureates/1963/mayer-bio.html) (<http://www.nobel.se/physics/laureates/1963/mayer-bio.html>) (nuclear physicist)

[Jane Goodall](http://www.jane-goodall.org/) (<http://www.jane-goodall.org/>) (1934- ) Primatologist

[Olive C. Hazlett](http://www.aqnesscott.edu/iriddle/women/hazlett.htm) (<http://www.aqnesscott.edu/iriddle/women/hazlett.htm>) (mathematician)

[Inge Lehmann](http://www.physics.purdue.edu/wip/herstory/lehmann.html) (<http://www.physics.purdue.edu/wip/herstory/lehmann.html>) (1888-1993) Seismologist

[Beulah Louise Henry](http://www.csupomona.edu/%7Eepin/inventors/henry.html) (<http://www.csupomona.edu/%7Eepin/inventors/henry.html>) (inventor: mechanics, toys)

[Caroline Herschel](http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Herschel_Caroline.html) ([http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Herschel\\_Caroline.html](http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Herschel_Caroline.html)) (1750-1848) Astronomer

[Caroline Herschel](http://www.seds.org/messier/xtra/Bios/cherschel.html) (<http://www.seds.org/messier/xtra/Bios/cherschel.html>) (1750-1848) Astronomer

[Dorothy Crowfoot Hodgkin](http://nobelprize.org/chemistry/laureates/1964/hodgkin-bio.html) (<http://nobelprize.org/chemistry/laureates/1964/hodgkin-bio.html>) (1910-1994) Crystallography Nobel Prize 1964

[Leta Stetter Hollingworth](http://www.webster.edu/%7Ewoolfm/letahollingsworth.html) (<http://www.webster.edu/%7Ewoolfm/letahollingsworth.html>) (education psychologist)

[Grace Murray Hopper](http://www.sdsc.edu/ScienceWomen/hopper.html) (<http://www.sdsc.edu/ScienceWomen/hopper.html>) (mathematician)

[Ida Hyde](http://library.thinkquest.org/20117/hyde.html?tskip1=1&tqtime=0903) (<http://library.thinkquest.org/20117/hyde.html?tskip1=1&tqtime=0903>) (physiologist)

[Hypatia of Alexandria](http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Hypatia.html) (<http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Hypatia.html>) (ca. 37-415) Astronomer

[Marjorie Joyner](http://inventors.about.com/library/inventors/bilovner.htm) (<http://inventors.about.com/library/inventors/bilovner.htm>) (inventor: permanent wave machine)

[Rita Levi-Montalcini](http://nobelprize.org/medicine/laureates/1986/levi-montalcini-autobio.html) (<http://nobelprize.org/medicine/laureates/1986/levi-montalcini-autobio.html>) (biologist)

[Barbara McClintock](http://profiles.nlm.nih.gov/LL/) (<http://profiles.nlm.nih.gov/LL/>) (geneticist)

[Margaret Mead](http://www.mead2001.org/) (<http://www.mead2001.org/>) (cultural anthropologist)

[Margaret Mead](http://www.interculturalstudies.org/Mead/index.html) (<http://www.interculturalstudies.org/Mead/index.html>) (cultural anthropologist)

[Maria Mitchell](http://www.mmo.org/) (<http://www.mmo.org/>) (astronomer)

[Ellen Ochoa](http://www.isc.nasa.gov/Bios/htmlbios/chocha.html) (<http://www.isc.nasa.gov/Bios/htmlbios/chocha.html>) (inventor: optical motion/position systems)

[Mary Engle Pennington](http://www.archives.upenn.edu/histy/features/women/bioq.html) (<http://www.archives.upenn.edu/histy/features/women/bioq.html>) (inventor: cold storage rooms)

[Mary Florence Potts](http://www.irons.com/potts.htm) (<http://www.irons.com/potts.htm>) (inventor: sad irons)

[Judith Resnick](http://www.christa.org/resnick.htm) (<http://www.christa.org/resnick.htm>) (electrical engineer and astronaut)

[Florence Sabin](http://www.nas.edu/history/members/sabin.html) (<http://www.nas.edu/history/members/sabin.html>) (1871-1953) Medical Researcher

[Miranda Stuart](http://www.geocities.com/eschiva/stuart.html) (<http://www.geocities.com/eschiva/stuart.html>) (1795?-1865) AKA: Dr James Barry, 1st woman MD in UK

[Harriet Russell Strong](http://www.csupomona.edu/%7Eepin/inventors/strong.html) (<http://www.csupomona.edu/%7Eepin/inventors/strong.html>) (inventor: flood control dams)

[Rosalyn Sussman Talow](http://www.nobel.se/medicine/laureates/1977/valow-autobio.html) (<http://www.nobel.se/medicine/laureates/1977/valow-autobio.html>) (nuclear physicist)

[Valerie Thomas](http://nssdc.gsfc.nasa.gov/nssdc_news/sept95/04_j_green_0995.html) ([http://nssdc.gsfc.nasa.gov/nssdc\\_news/sept95/04\\_j\\_green\\_0995.html](http://nssdc.gsfc.nasa.gov/nssdc_news/sept95/04_j_green_0995.html)) (inventor: image processing)

[Ann Tsukamoto](http://inventors.about.com/library/inventors/bl_Ann_Tsukamoto.html) ([http://inventors.about.com/library/inventors/bl\\_Ann\\_Tsukamoto.html](http://inventors.about.com/library/inventors/bl_Ann_Tsukamoto.html)) (inventor: molecular and cell biology)

[Anna Pell Wheeler](http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Wheeler.html) (<http://www-gap.dcs.st-and.ac.uk/%7Ehistory/Mathematicians/Wheeler.html>) (mathematician)

[Chien-Shiung Wu](http://www.physics.ucla.edu/%7Ecwp/Phase2/Wu_Chien_Shiung@841234567.html) ([http://www.physics.ucla.edu/%7Ecwp/Phase2/Wu\\_Chien\\_Shiung@841234567.html](http://www.physics.ucla.edu/%7Ecwp/Phase2/Wu_Chien_Shiung@841234567.html)) (nuclear physicist)

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## [Related Websites](#)

UB librarians have compiled the following list of Internet resources that highlight women's achievements in science, engineering, technology, and mathematics:

### **Advancing Womens' Careers**

<http://www.advancingwomen.com/> (<http://www.advancingwomen.com/>)

### **L'association Femmes et Sciences**

[http://www.int-evry.fr/femmes\\_et\\_sciences](http://www.int-evry.fr/femmes_et_sciences) ([http://www.int-evry.fr/femmes\\_et\\_sciences](http://www.int-evry.fr/femmes_et_sciences))

### **Association for Women in Science**

<http://www.awis.org/> (<http://www.awis.org/>)

### **Australian Women in Physics**

<http://www.rpsphysse.anu.edu.au/admin/women/> (<http://www.awis.org>)

**BeWise (Belgian Women in Science)** . BeWiSe is dedicated to achieving equal and full participation of women in all scientific disciplines and at all levels, because diversity will promote scientific excellence and progress further.

<http://bewise.naturalsciences.be/> (<http://bewise.naturalsciences.be/>)

### **Celebrate National Women's History Month**

<http://www.womansource.com/whm.htm> (<http://www.womansource.com/whm.htm>)

### **Biographies of Women Mathematicians**

<http://www.scottlan.edu/iriddle/women/alpha.htm> (<http://www.scottlan.edu/iriddle/women/alpha.htm>)

### **German association of Women in Science and Technology**

<http://www.nut.de/> (<http://www.nut.de/>)

### **IEEE Women in Engineering Home Page**

<http://www.ieee.org/women> (<http://www.ieee.org/women>)

### **National Women's History Project**

<http://www.nwhp.org/> (<http://www.nwhp.org/>)

### **Women Noble Prize Winners**

<http://nobelprizes.com/nobel/women.html> (<http://nobelprizes.com/nobel/women.html>)

### **Society of Women Engineers**

<http://www.swe.org/> ([http://www.swe.org/stellent/idcplg?ldcService=SS\\_GET\\_PAGE&nodeId=5](http://www.swe.org/stellent/idcplg?ldcService=SS_GET_PAGE&nodeId=5))

## Women in Mathematics, Science & Elsewhere

<http://www.sci.wsu.edu/math/faculty/barnes/women.html> (<http://www.sci.wsu.edu/math/faculty/barnes/women.html>)

## Women in Science

<http://www.adultlearn.com/women-in-science.html> (<http://www.adultlearn.com/women-in-science.html>)

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## 0 Recruiting Women

### Places to Go For Data:

- o Data on science infrastructure: education, employment, support, etc.  
National Science Foundation <http://www.nsf.gov/sbe/srs> (<http://www.nsf.gov/sbe/srs/>)
- o Information on women in science  
Association for Women in Science <http://www.awis.org> (<http://www.awis.org>)  
The MIT report <http://web.mit.edu/fnl/women/women.html> (<http://web.mit.edu/fnl/women/women.html>)
- o Information on academic women:  
American Association of University Women <http://www.aauw.org> (<http://www.aauw.org/>)  
Chronicle of Higher Education <http://chronicle.com> (<http://chronicle.com>)

### Specific References:

- o "Breaking Anonymity: the chilly climate for women faculty." The Chilly Collective . Waterloo, Ontario: Wilfrid Laurier University Press, 1995.
- o Caplan, Paul J. Lifting a ton of feathers: a woman's guide for surviving in the academic world . University of Toronto Press, 1993.
- o Cohen, Hal. "The Baby Bias." New York Times 4 August 2002.
- o Hewlett, Silvia Ann. "Executive Women and the Myth of Having It All." Harvard Business Review April 2002, p66-73.
- o History of Women In Science & Technology (<http://www.cs.yale.edu/homes/tap/historical-refs.html>) (Yale).
- o Sonnert, Gerhard and Gerald Holton. Gender differences in science careers: the project access study . New Brunswick, NJ: Rutgers University Press, 1995.

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## 0 Acknowledgements:

The *Outstanding Female in Math Chair, and Science* photograph series was provided to SEL by Professor Mary Bisson (<http://wings.buffalo.edu/academic/department/fnsm/bio-sci/faculty/bisson.html>) (UB Department of Biological Sciences). For a story of the first Professor in the Department of Biological Sciences, see the March 7, 2002 issue of The Reporter; <http://www.buffalo.edu/reporter/vol33/vol33n20/n4.html> (<http://www.buffalo.edu/reporter/vol33/vol33n20/n4.html>)

All visual materials from the **National Women's History Project** (NWHP). In addition to the posters and photo displays used for SEL's exhibit, NWHP produces a variety of educational materials and women's history resources which are described in their *Women's History Catalog* .

### **National Women's History Project**

7738 Bell Road  
Windsor, CA 95492-8518  
nwHP@aol.com  
<http://www.nwHP.org/> (<http://www.nwHP.org/>)  
707/ 838-6000 voice  
707/838-0478 fax

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