

## APPENDIX C

### Prominent Women in Science

\*Denotes a Nobel Prize winner.

**Maria Agnesi** (1718-1799) Mathematician. A professor at the University of Bologna in Italy, she published *Analytical Institutions*, which was widely translated and used as a textbook.

**Elizabeth Blackwell** (1821-1910) Physician. After she became the first woman doctor in the United States, no hospital would admit her. She then bought her own house and established a small dispensary, which expanded to become the New York Infirmary for Women and Children.

**Mary Bunting** (1910-1997) Microbiologist. She is known for discoveries on the effect of radiation on bacteria and became the first woman member of the United States Atomic Energy Commission.

**Eleanor Margaret Burbidge** (b. 1919) Astronomer. The first woman astronomer to direct the Royal Greenwich Observatory in England.

**Jocelyn Bell Burnell** (b. 1943) Astronomer and physicist. She is credited with the discovery of pulsars, rapidly rotating stars that have completed their life cycles and have contracted into a “thick soup” of neutrons.

**Annie Jump Cannon** (1863-1941) Astronomer. Called the “census taker of the sky,” she classified about 400,000 stellar bodies according to their temperature.

**Rachel Carson** (1907-1964) Marine biologist. Her writings brought to public attention the destructive effects of pesticides, resulting in curtailment of their use, and in stronger efforts to develop natural biological controls for harmful insects.

**Eugenie Clark** (b. 1922) Marine biologist. Through studying the nature and behavior of sharks, she has been able to teach them to choose between targets of different designs and colors.

**Jewel Plummer Cobb** (b. 1924) Cell physiologist. Her early research led to new discoveries concerning normal and malignant pigment cells. Interested in helping to solve the puzzle of cancer, she undertook many research projects for the National Cancer Institute. In 1981, she became the first black woman college president in the 19-college California state university system.

**Jacqueline Cochran** (1906-1980) Pilot. The first woman to break the sound barrier (in 1952, while flying a North American Canadair F-86 over Royer’s Dry Lake, California), at a speed of 652.337 miles per hour. She was also the first woman to win the Bendix Transcontinental Air Race. During World War II, she directed the Women’s Air Force Service Pilots.

**Anna Comnena** (1083-1148) Physician, mathematician. Author of a book on gout, she also ran a hospital of 10,000 beds and provided medical services to pilgrims and Crusaders and their camp followers.

\***Gerty Cori** (1896-1957) Biochemist, physician. The first woman to receive the Nobel Prize for Medicine/Physiology (1947), she carried out research into carbohydrate metabolism, the method by which the body uses its fuel supply of starches and sugars, and the relation of this mechanism to certain hormone secretions.

\***Marie Curie** (1867-1934) Chemist. The first person ever to receive two Nobel Prizes—Physics in 1903 and Chemistry in 1911—she won the prizes for her discovery of radium and her research into radioactivity.

**Amelia Earhart** (1898-1937) Aviator. The first woman to fly solo across the Atlantic, she set many aviation records, including long distance ones, such as flying from Hawaii to California.

\***Gertrude B. Elion** (1918-1999) Biochemist. Won the Nobel Prize in Medicine/Physiology in 1988 for demonstrations showing the differences in nucleic acid metabolism between normal cells and disease-causing cancer cells, protozoa, bacteria, and viruses.

**Dian Fossey** (1932-1985) Primatologist. Studied primates in Africa while protecting them from poachers and neglect. She was found murdered in her Rwanda cabin in 1985—a murder that has yet to be solved.

**Rosiland Franklin** (1920-1958) X-ray crystallographer. A pioneer of the study of molecular structures including DNA, she discovered enough information about the structure of DNA to explain the molecular basis of heredity. Her work helped lead to the unraveling of the complete structure of DNA.

**Lillian Gilbreth** (1878-1972) Industrial engineer. She charted ways to save energy and human motion in the office, factory, hospital, and home. She also had 12 children.

**Jane Goodall** (b. 1934) Animal behaviorist. Living for long periods of time in the field, the studies she produced were the first to show that chimpanzees are intelligent, social animals.

**Beatrice Hicks** (1919-1979) Electrical engineer. In the 1960s she was the only black woman engineer at Western Electric. She received the Society of Women Engineers Achievement Award for her theoretician study and analysis of sensing devices under extreme environmental conditions.

**Lucy Hobbs** (1833-1910) Dentist. The first woman to earn a dental degree in the United States, she developed one of the most extensive practices in Kansas.

\***Dorothy Crowfoot Hodgkin** (1910-1994) Crystallographer. She was awarded the Nobel Chemistry Prize in 1964 for determining the crystal structure of biomedical compounds, particularly penicillin.

**Grace Murray Hopper** (1906-1992) United States Naval officer, inventor. She is the inventor of the computer language COBOL, for which she received the 1983 American Association of University Women Educational Foundations Achievement Award.

**Hypatia** (c. 370-415 A.D.) Mathematician. She taught mathematics and philosophy at the University of Alexandria, Egypt, and is credited with the development of the astrolabe and the planisphere, instruments used for studying the stars.

**Shirley Jackson** (b. 1946) Physicist. The first black woman to graduate in theoretical physics from the Massachusetts Institute of Technology, she works at Bell Laboratories using computers and mathematical formulas to explore physics. She was a visiting scientist at the European Organization for Nuclear Research in Switzerland.

\***Irene Joliot-Curie** (1897-1956) Physicist. She was awarded the Nobel Chemistry Prize for discovering a technique for making artificial radioactive elements.

**Reatha Clark King** (b. 1938) Research chemist. One of only two black graduate students at the time, she earned her master's and doctoral degrees in chemistry at the University of Chicago, specializing in high temperature chemistry. She later became a college administrator, supporting programs for women and minorities.

**Anne Morrow Lindbergh** (1906-2001) Aviator. First licensed woman glider pilot in the United States. She served as copilot for many of her husband's flights.

\***Rita Levi-Montalcini** (b. 1909) Biochemist. She received the Nobel Prize for Medicine/Physiology in 1986 for her discovery of NGF (nerve growth factors), a class of molecules that provides a regulatory link between targets in the body and the nerve cells that innervate them.

\***Maria Goeppert Mayer** (1906-1972) Physicist. She received the Nobel Prize for Physics in 1963; during World War II she worked on isotope separation for the atomic bomb.

\***Barbara McClintock** (1902-1992) Biochemist. She received the 1983 Nobel Prize for Medicine/Physiology for her discovery that genes can move from one spot to another on the chromosomes of a plant, thus changing future generations of plants.

**Elsie Gregory MacGill** (1905-1980) Aeronautical engineer. She was the first woman to become chief aeronautical engineer of any company and is known internationally for her work on engineering designs of fighter and transport aircraft.

**Margaret Mead** (1901-1978) Anthropologist. She was one of the first to do field work in the islands of the southwest Pacific and to bring back eyewitness accounts of the native cultures and peoples of New Guinea, Samoa, and Fiji.

**Lise Meitner** (1878-1968) Physicist. The first woman to be awarded the Enrico Fermi Award, she worked on splitting the atom, and explained mathematically the fission of the uranium atom.

**Maria Mitchell** (1818-1899) Astronomer. Self-taught, she discovered a comet that was named for her, and became professor of astronomy at Vassar College.

**Emmy Noether** (1882-1935) Mathematician. Professor of mathematics at Bryn Mawr, she discovered many methods of great importance to abstract algebra and was also a member of the Institute for Advanced Study at Princeton.

\***Christiane Nusslein-Volhard** (b. 1942) Geneticist. She won the Nobel Prize for Medicine in 1995 for discoveries concerning genetic control of early embryonic development. The work involved studies with fruit flies.

**Jennie R. Patrick** (b. 1949) Chemical engineer. The first black woman in the United States to earn a doctoral degree in chemical engineering, she does research on energy conservation and pollution control. As a role model, she encourages young people to develop their own potential and establish their own goals.

**Susan Laflesche Picotte** (1865-1915) Physician. Born on the Omaha Reservation, this Native American attended the Woman's Medical College of Pennsylvania and returned to serve her people's medical needs. She later became the leader of the Omahas and represented their interests in Washington.

**Sally Kristen Ride** (b. 1951) Astronaut. Graduate of Stanford University with a Ph.D. in physics, she was the first American woman to go into space aboard the space shuttle *Challenger* as flight engineer for nearly 6 days.

**Florence Sabin** (1871-1953) Physician. She was one of the first women to enter medical research. She determined the origin of red corpuscles and did important research on tuberculosis.

**Margaret Sanger** (1883-1966) Public health nurse. A pioneer in birth control, she fought for the right of women to have access to birth control and was one of the founders of Planned Parenthood.

**Susan Smith McKinney Steward** (1847-1918) Physician. She was the first black woman to receive her M.D. from the New York Medical College for Women. She helped found a hospital for treatment of "indisposed" shop girls.

**Ellen Swallow** (1842-1911) Chemist. The first woman to graduate from the Massachusetts Institute of Technology, she was the founder of home economics as a science and a profession.

**Valentina Tereshkova** (b. 1937) Cosmonaut. A Russian textile worker, she learned to parachute and eventually entered the space program. She is the first woman to orbit the earth in space.

**Adah Belle Thoms** (1863-1943) Nurse. She was the first black person to hold an administrative position at New York City's Lincoln School for Nurses. She played an important role in guiding the progress of black women in the field of nursing.

**Jane Cook Wright** (b. 1919). Cancer researcher. Motivated by the challenge to find a cure for cancer and to help cancer patients live more comfortable lives, she

worked in chemotherapy research. She has received numerous awards and honors for her work.

**Chien-Shiung Wu** (1912-1997) Physicist. She made important contributions to the research of nuclear forces and structures; in particular, she helped to prove the principle of parity unacceptable.

**\*Rosalyn S. Yalow** (b. 1921) Nuclear physicist. She was awarded the Nobel Prize for Medicine in 1977 for the discovery of radioimmunoassay, a method of measuring minute concentrations of hundreds of substances in body tissues. It is invaluable in determining the differences between diseased and normal states of body tissues.