You Can be a Scientist and/or an Engineer
Famous STEM People from North Dakota

James A. Abrahamson
Born in 1933 Williston, North Dakota
He earned a Bachelor of Science degree in Aeronautical Engineering from the Massachusetts Institute of Technology in 1955 and a Master of Science degree in the same field from the University of Oklahoma in 1961. He completed Squadron Officer School in 1958, Air Command and Staff College in 1966, and the Industrial College of the Armed Forces in 1973. After retiring as a general from the U.S. Air Force he served as a designated astronaut, Associate Director of NASA and served as the director of President Ronald Reagan's Strategic Defense Initiative from 1984 until 1989.

James Frederick Buchli
Born 6/20/1945 New Rockford, North Dakota
He graduated from Fargo Central High School, Fargo, North Dakota, in 1963 and received a Bachelor of Science degree in Aeronautical Engineering from the United States Naval Academy in 1967. He earned a Master of Science degree in Aeronautical Engineering Systems from the University of West Florida in 1975. He was a retired United States Marine aviator and former NASA astronaut who flew on four Space Shuttle missions.

Donald J. Ehreth
Born 4/1/1936 Mandan, North Dakota
Developed and established the initial version of Integrated Risk Information System (IRIS). The Integrated Risk Information System (IRIS) is a compilation of reports on specific substances found in the environment and their potential to cause human health effects.

Carl Ben Eielson
Born 7/20/1897 Hatton, North Dakota
He learned to fly in the U.S. Army Air Service in 1917; and graduated from UND in 1921. Eielson soon became the sole pilot for the Farthest North Aviation Company which was formed in 1923. In 1924, he flew the first air mail in Alaska from Fairbanks to McGrath, Alaska in under 3 hours, a distance dog sleds took up to 30 days to cover. In March 1927, Australian polar explorer George Hubert Wilkins and Eielson explored the drift ice north of Alaska. They touched down in Eielson's airplane in the first land-plane descent onto drift ice. In April 1928, Eielson and Wilkins flew across the Arctic Ocean in the first flight from North America over the North Pole to Europe. The flight, from Point Barrow to Spitsbergen, covered 2,200 mi and took 20 hours. When Eielson accompanied Wilkins on an Antarctic expedition later in 1928, they became the first men to fly over both polar regions of the world in the same year. During the Antarctic summer of 1928-1929, Eielson and Wilkins made air explorations of the Antarctic, charting several islands which were previously unknown. After his return from the Arctic flight, Eielson was asked to establish Alaskan Airways, a subsidiary of the Aviation Corporation of America.

Andrew L. Freeman,
Born 3/10/1909 Upham, North Dakota
He attended UND to become an electrical engineer. The year was 1947, and Freeman, like everyone else in Grand Forks, found that even if he succeeded in getting his car running, it took so much out of the battery that soon the engine was dead. He started experimenting with devices that would heat the engine. In 1947 he invented the headbolt heater; patented in 1947. With two colleagues, Freeman formed the Five Star Manufacturing Company of East Grand Forks to manufacture headbolt heaters. He served as general manager of Minnkota Power Cooperative from 1940 to 1982.

Pat Haggerty
Born in 1914 Harvey, North Dakota
In 1936, he graduated from the Marquette University School of Electrical Engineering. He was a co-founder and former president and chairman of Texas Instruments, Incorporated. Haggerty is most responsible for turning a small Texas oil exploration company into the leader in semiconductors.

David Henderson
In 1880, at the age of 39, Houston moved west to the Dakota Territory and purchased 480 acres near the town of Hunter in what would one day become North Dakota. Over the course of his life, he would acquire a total of 4,000 acres and become one of the most profitable farmers in the region. An aspiring inventor who was a farmer by trade, he held patents for inventing the first holders for flexible roll film and for designs of some of the earliest folding and panoramic cameras. In fact, between 1881 and 1902, twenty-one different cameras or camera parts were registered by Houston with the U.S. Patent Office. Most of these items were eventually mass produced, in some variant of his original designs, by the Eastman Kodak Company in Rochester, New York. In 1887 David Henderson invented a camera. He named it Kodak and later sold the rights of the Kodak camera to George Eastman.

Rick Hieb
Born 9/21/1955 Jamestown, North Dakota
He earned a Master of Science degree in aerospace engineering from the University of Colorado, Boulder, and Bachelor of Arts degree in physics and mathematics from Northwest Nazarene College in Idaho. He retired from NASA in 1995 after six years in the Mission Operations Directorate at Johnson Space Center and almost 10 years in the Astronaut Corps. He flew three Space Shuttle missions, serving as payload commander for the second International Microgravity Laboratory mission on STS-65 and as a mission specialist on STS-49 and STS-39. He has logged over 750 hours in space, including more than 17 hours of EVA. After leaving NASA he worked at AlliedSignal and Orbital before spending 14 years as an executive at Lockheed Martin. Following his career at Lockheed Martin he became a faculty member in the Smead Aerospace Engineering Sciences Department, University of Colorado Boulder.

Leon Orris Jacobson
Born 12/16/1911 Sims, North Dakota
He received a Bachelor of Arts degree from North Dakota State University in 1935. He completed medical school at the University of Chicago. World War II saw the establishment at the University of Chicago of war-related research and he was involved in two secret projects: the Toxicity Laboratory, where he served as consulting physician working with chemical warfare agents and protection against them, and the Metallurgical Laboratory. The latter was the local code name for the nationwide Manhattan Project. He became the director of the Biology and Medicine Branch of the Metallurgical Laboratory which became the Argonne Cancer Research Hospital after the war ended. He made tremendous contributions to radiology and hematology, with major impacts on chemotherapy and radiotherapy.

Ralph J. Krogfoss
Born 12/9/1922 Binford, North Dakota
Oversaw the design and Development of Bailey Polyjet Valve. Bailey pressure reducing valves offer comprehensive pressure regulation for key services, fire hose and pressure systems using steam, air, water, hot water and fine industrial gases.

Everett A. Sondreal
Born 8/26/1935 Grand Forks, North Dakota
UND Bachelor of Arts Chemical Engineering 1957. 1982 US Patent for the Continuous Liquefaction of Coal.

George B. Thompson
Born 6/19/26 Grand Forks, North Dakota
UND Bachelor of Arts Mathematics 1954
Mathematician, Computer Support Division, U.S. Army, Aberdeen Research & Development Center. Aberdeen Proving Ground, Aberdeen, Maryland
Worked on the first computers; the Electronic Numerical Integrator (ENIAC), the Ordnance Variable Automatic Computer (ORDVAC) and the Ballistic Research Laboratories Electronic Scientific Computer (BRLESC pronounced burlesque). ENIAC was used to compute ballistic tables and calculations relevant to weather prediction, atomic energy, cosmic ray studies, thermal ignition, random number studies, and wind tunnel design problems. The EDVAC was the first computer with internally stored programs. Its major features were the use of the binary system of numeration, the four address command structure, the serial arithmetic mode and duplicate circuitry for checking purposes. Advances in technology were added to EDVAC: card input-output adapter, magnetic drum to provide additional memory, floating-point arithmetic unit to keep track of decimal points, and a magnetic tape system for additional memory storage. EDVAC was used for a variety of applications including: 1) weapon systems evaluation problems such as war games, lethal area and kill probabilities, anti-aircraft antimissile evaluation and linear programming for Army logistical field problems, 2) ballistic measurement problems which included the computation of satellite orbital principles, 3) Interior ballistic problems such as the computation of detonation waves were reflected shock waves, projectile and launcher behavior, vibration of gun barrels, and propelling efficiency, 4)

exterior ballistic problems such as high-altitude solar and lunar trajectories, computation for the preparation of firing range tables, and guidance control data for ordnance weapons, and 5) terminal ballistic problems which dealt with the results of impact when a trajectory hit a target, penetration, disbursement, transfer of heat and the improvement in the shape of the projectile to obtain better results. ORDVAC was designed to perform the same applications as EDVAC at higher speeds using punch card technology. BRLESC started running in 1961 as an exclusively binary number system computer with new technological advances such as reading and writing to magnetic tape (later magnetic disks).

Everette Web
Born 9/15/1921 Grand Forks, North Dakota
Chief of Structural Dynamics for 707 and KC 135 aircraft

Thomas Keith Glennan
Born 9/8/1905 Enderlin, North Dakota
Dr. Glennan earned a degree in electrical engineering from the Sheffield Scientific School of Yale University in 1927. The first Administrator of the National Aeronautics and Space Administration, formally established on October 1, 1958, under the National Aeronautics and Space Act of 1958. As NASA Administrator, Glennan presided over an organization that had absorbed the earlier National Advisory Committee for Aeronautics and three major research laboratories--Langley Aeronautical Laboratory, Ames Aeronautical Laboratory, and Lewis Flight Propulsion Laboratory. Within a short time after NASA's formal organization, Glennan incorporated several organizations involved in space exploration projects from other federal agencies into NASA to ensure that a viable scientific program of space exploration could be reasonably conducted over the long-term. He brought in part of the Naval Research Laboratory and created for its use the Goddard Space Flight Center, Greenbelt, Maryland. He also incorporated several disparate satellite programs, two lunar probes, and the important research effort to develop a million-pound-thrust, single-chamber rocket engine from the Air Force and the Department of Defense's Advanced Research Projects Agency. In December 1958 Glennan also acquired control of the Jet Propulsion Laboratory, a contractor facility operated by the California Institute of Technology (Caltech) in Pasadena, California. In 1960 Dr. Glennan obtained the transfer to NASA of the Army Ballistic Missile Agency (ABMA), located at Huntsville, Alabama, and renamed it the Marshall Space Flight Center. By mid-1960 Glennan had secured for NASA primacy in the Federal Government for the execution of all space activities except reconnaissance satellites, ballistic missiles, and a few other space-related projects, most of which were still in the study stage, that the Department of Defense controlled. Upon leaving NASA in January 1961, Dr. Glennan returned to the Case Institute of Technology, where he was continued to serve as president until 1966.