22-26

MEMORIAL RESOLUTIONS

Krishna Athreya

Vicki Boysen

George Burnet V

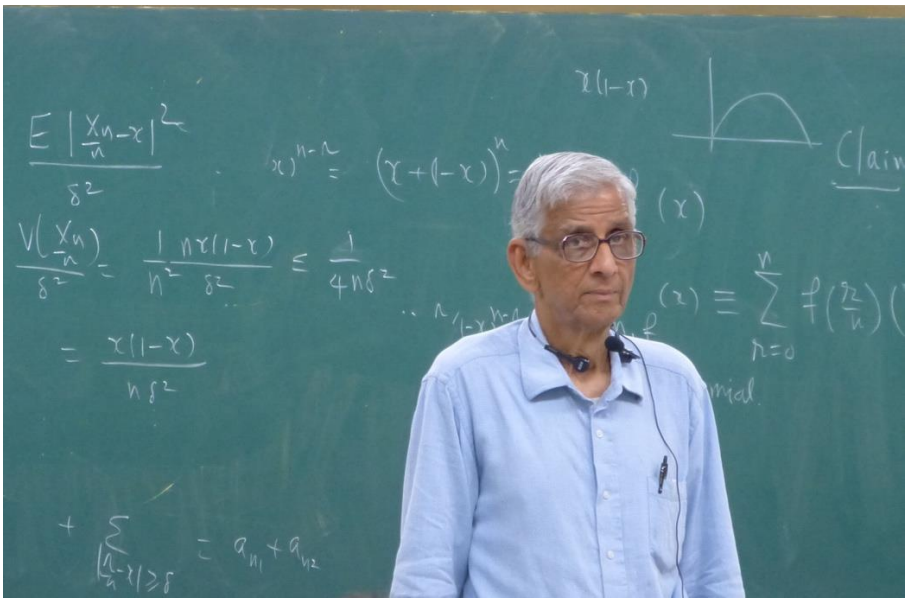
Herb Harmison

William Reece

Clifford Smith

Thomas Wheelock

Iowa State University Faculty Senate May 2, 2023



Krishna Athreya

Distinguished Professor of Mathematics and Statistics

Krishna B. Athreya, Distinguished Professor of Mathematics and Statistics at Iowa State University, died at home in Ames, IA on March 24, 2023 at the age of 83 years. Krishna is internationally known for his research contributions in probability theory and theoretical statistics. He was a fellow of the Institute of Mathematical Statistics and a fellow of the Indian Academy of Sciences. Krishna retired from ISU in 2013.

He was born and raised in a large family of 14 children in the small village of Pattamadai in Tamilnadu province of India which is located about 100 miles north of the southern tip of India. His father was a school principal in their village, but unfortunately passed away when Krishna was barely 8 years old. However, his mother was so determined to educate her children so that they could escape from poverty.

Krishna is remembered as a very humble person. In fact, Krishna used to say that he failed math tests and had difficulty with math in his early years. However, in his early teens, a very competent math teacher changed his attitude and directed him to think logically in order to solve math problems. Thereafter, he realized his potential and succeeded in math in high school. He completed his undergraduate studies at Loyola College of Madras University in 1959 and then went to the Indian Institute of Science for further studies. He received a Fulbright scholarship in 1963 to study for his PhD at Stanford University. He completed his PhD under the direction of the eminent mathematician Professor Samuel Karlin in 1967.

Thereafter, he joined the math department of University of Wisconsin-Madison. While in Madison, he wrote the seminal textbook ``Branching Processes'' jointly with Professor Peter Ney in 1972 which is considered an authoritative text in the subject. He made numerous contributions to the area of branching processes. In addition, his work in bootstrap methods in statistical inference are also well known. He was also generous in sharing his time and knowledge with others to address mathematical problems arising from other areas, such as computer science, electrical engineering, economics and applied sciences.

He held faculty positions at Indian Institute of Science in Bangalore, Cornell University, and visiting positions at many other universities and research institutions around the world. He joined the Iowa State in 1980 as Professor of Mathematics and Statistics. Until his retirement, he made exemplary contributions to all three areas of research, teaching and academic service. He took graduate and undergraduate teaching quite seriously and encouraged

students to pursue their dreams. He was a popular teacher. His graduate class on measure theory and probability theory was quite demanding, but was well attended by math, statistics and applied sciences graduate students who appreciated all his efforts. With his teaching experience, he saw the necessity of an advanced probability theory book which contains the necessary tools from measure theory. To fill this gap, he wrote a textbook on this topic jointly with Professor Soumendra Lahiri in 2006. Throughout, he managed a very active research program which was funded by multiple grants from the National Science Foundation and collaborated with numerous researchers around the world. He advised many PhDs and most of them followed research careers in very good universities. He was proud of each one of them. In addition, he devoted his time and energy to develop a nationally known probability theory research group by attracting excellent young researchers for new faculty positions and organizing weekly seminars and other activities with them. Krishna showed a true interest in all branches of mathematics and was a regular attendee of the math department weekly colloquium. He always appreciated the new developments in mathematics.

Krishna's accomplishments earned many recognitions by several esteemed organizations and universities around the world: Fellow of the Institute of Mathematical Statistics, Fellow of the Indian Academy of Sciences, Elected Member of International Statistics Institute, Netherlands, and Jawaharlal Nehru Chair (1996) at the University of Hyderabad, India are some of them. He served in editorial boards of several high caliber probability theory journals throughout his carrier. To appreciate his academic contributions at the Iowa State, the math department organized a conference with the support from the Statistics and computer science departments and the university administration in honor of Krishna Athreya in September 2009. This conference was funded by the Institute of Mathematics and Applications (IMA) at the University of Minnesota and the invited speakers were eminent mathematicians in Krishna's areas of expertise. It also attracted numerous researchers from outside universities.

Besides mathematics, Krishna loved classical music. He loved south Indian (Carnataka), north Indian (Hindustani) classical music and western classical music. During the winter break at the Iowa State, he regularly visited India to be with his extended family and especially, to attend the music festival season so that his children will also be exposed to music heritage of India. Krishna would love to explain about ragas (Indian music scales) in Indian classical music and their intricacies to anyone who listened to him. He was instrumental in bringing in and hosting top rated Indian musicians to Ames, whenever they tour the US. This provided a golden opportunity for the Indian community in Ames and Des Moines area. Krishna also volunteered at the Ames public library. He was a civic minded citizen who had a life-long interest in politics, which was inspired by his compassion towards the disadvantaged and the global environmental issues.

Mathematics and music are true passions of Krishna's life. But his family was his pride and true love that mattered most to him. He was preceded in death by his parents and his beloved first wife, Parvathi (Uma) Mani Athreya, mother of his children Kartik and Avanti. He is survived by his second wife and partner of more than 40 years, Krishna (Rani) Athreya, mother of his children Jayadev and Ambika. In addition to his children, he is survived by his six grandchildren, his daughters-in- law, Teri and Radhika and his sons-in-law, Ryan and Ernesto and seven brothers and sisters their spouses and their families.

Vicki Boysen
Lecturer

Vicki Louise Boysen of Ames, Iowa, passed away on Saturday, December 17, 2022, at the Israel Family Hospice House in Ames.

Vicki held several positions on the Iowa State faculty. She was a postdoctoral researcher with the Geological and Atmospheric Sciences department during the years 1998-2001. She was a Temporary Assistant Professor in the Mathematics department from 2001 to 2002, and then was a Lecturer in the department from 2002 to 2004.

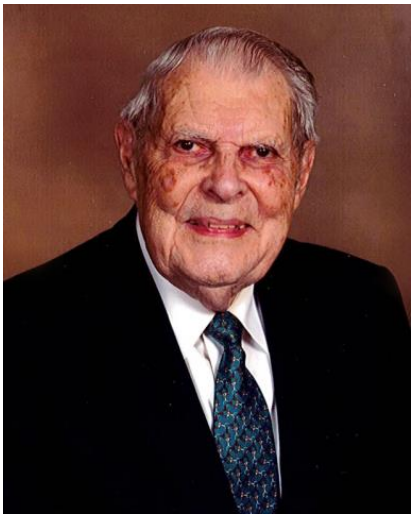
Vicki was born on August 18, 1948, in Des Moines, Iowa, to Max G. and Helen Louise (Cooper) Allen. Her family moved to Clearwater, Florida, in 1958, and she graduated from Largo High School in 1966. Vicki continued her education at the University of Florida, graduating with a degree in Mathematics in 1969.

Vicki was united in marriage to Pete Boysen in Florida on December 14, 1968. She and Pete spent four years in Minot, North Dakota, in the Air Force, where she helped airmen obtain their GEDs. In 1973, the couple moved to Ames, where she was awarded a masters (1976) and PhD (1980) in Adult Education at Iowa State University.

Vicki held many roles in her life including wife, mother, high school uniform coordinator, math teacher at Iowa State University, Math tutor, Sunday school teacher and preschool coordinator at Christ Community Church in Ames. She enjoyed traveling with family, including three European trips. Vicki loved teaching college and especially teaching young children about Jesus.

Vicki is survived by her husband of 54 years, Pete Boysen and daughter, Kristina (Travis) Taylor.

Vicki's Favorite Scripture:
And we know that in all things God works for the good of those who love him, who have been called according to his purpose. Romans 8:28 (NIV)



Dr. George Burnet V

January 30, 1924 – January 13, 2023

George Burnet V, a pillar in the history of the Department of Chemical and Biological Engineering, passed away January 13, 2023. Dedicating much of his life to the department, he progressed from student to faculty member to department chair over a span of more than 60 years. A private family interment was held at the Iowa State Cemetery.

George was born January 30, 1924, to George IV and Myrtle (Hutchinson) Burnet in Fort Dodge, Iowa. He graduated from Fort Dodge High School in 1941 and completed a year at Fort Dodge Junior College before enrolling in chemical engineering at Iowa State College.

Burnet first came to the Department of Chemical and Biological Engineering in 1942 as an undergraduate student, but had his studies interrupted by World War II. He enlisted in the Army and later was accepted into the Field Artillery Officer Candidates School at Fort Sill, OK. He was commissioned a Second Lieutenant and served three years in the Pacific theater with the 1st Calvary Division and Eighth Army Headquarters. He retired from the Army Reserve in 1966 with the rank of Lt. Colonel.

After serving in WWII Burnet returned to Iowa State to resume his studies, earning a B.S. in chemical engineering in 1948, an M.S. in 1949 and a Ph.D. in 1951. After spending a few years in industry he again returned to ISU as a chemical engineering faculty member. It was a relationship that was to last for the remainder of his career. He served as the department chair from 1961-1978, the second-longest term as chair in department history.

During his time as a researcher and educator at Iowa State he also served as an associate dean and interim dean for the College of Engineering. He was involved in the development and expansion of ISU's Nuclear Engineering Department and served as chief of the U.S. Department of Energy's Ames Laboratory (now Ames National Laboratory) chemical engineering division from 1961-1973.

One of his key research areas involved working with fly ash, which is a byproduct of pulverized coal, that was burned to produce electricity. Dumping of fly ash into landfills was a cause of environmental problems and Burnet's research group undertook efforts to apply chemical engineering techniques to find more efficient and environmentally friendly ways to produce valuable products from it. His work is still heralded as a landmark achievement.

Burnet retired from Iowa State in 1995 as Anson Marton Distinguished Professor Emeritus. His honors are many. He was awarded the Order of the Knoll Faculty and Staff Award in 2011; in 2013 he was inducted into the Department of Chemical and Biological Engineering Alumni Hall of Fame Inaugural Class; in 2020 he was the recipient of the Iowa

State Alumni Association's Alumni Medal, the premier alumni award. Other honors include the Benjamin Garver Lamme Medal of the American Society for Engineering Education; Distinguished Fellow of the Iowa Academy of Science and the Iowa Engineering Society Life Membership Award; and the Linton E. Grinter Distinguished Service Award of the Accreditation Board for Engineering Technology (ABET).

He served on committees and panels of the National Science Foundation, U.S. Department of Energy, and a variety of other organizations. From 1983-1987 he was U.S. representative to the Committee on Education and Training, which was part of the World Federation of Engineering Organizations. He is a founding member of the Iowa section of the American Institute of Chemical Engineers (AIChE), the world's leading organization of chemical engineering professionals. Local chapters help foster learning, networking and career development for students. Today the Iowa State student chapter is highly regarded and has received numerous national recognitions. He was active with the American Chemical Society, Iowa Academy of Science and National Society of Professional Engineers.

He served as president of the American Society for Engineering Education (ASEE) and on a number of the organization's committees, including chairing its 1993 Centennial Committee.

His ASEE work earned him a seat on the Commission on Precollege Education in Mathematics, Science and Technology. The commission produced *Educating Americans for the 21st Century*, which, among other recommendations, strongly called for the increased use of computers in education.

He was instrumental in planning and coordinating events surrounding the Department of Chemical and Biological Engineering's centennial celebration in 2013, including playing a key role in producing the centennial's commemorative book, "The First 100 Years of Chemical Engineering at Iowa State University (1913-2013)." He remained active in department events in recent years.

His father, grandfather, great-grandfather and great-great-grandfather were all civil engineers, and were all named George. Burnet was George V. George married Betty Riggs in 1944 and they had six children. Betty passed away in 1993. George then married Agatha Huepenbecker in 1995. Agatha passed away in 2012 and in 2014 Martha Anderson, a 1948 home management alumna of Iowa State, became his wife. Martha was named as a co-recipient of the ISU Alumni Medal along with George in 2020.

Herb Harmison

Longtime industrial engineering faculty member Herbert "Herb" Harmison passed away on March 5, 2022 at the age of 88. Herb was born on July 15, 1933 in Dubuque, Iowa, the son of Herbert Sr. and Adeline Harmison. He graduated from the Culver Military Academy in Indiana in 1951 and joined the U.S. Army (and later the Iowa National Guard) eventually achieving the rank of Brigadier General after being stationed in Colorado and Germany.

Herb returned to Iowa after his service to attend Iowa State where he also was a member of the Cyclone basketball squad his freshman year (he also played while at Culver). He graduated with his B.S. in mechanical engineering (ME) in 1962, then went on to work for the Berkeley Company (a manufacturer of fishing equipment) in Spirit Lake, Iowa. Herb joined the faculty of the industrial engineering department at Iowa State soon after. He completed his M.S. in ME from Iowa State in 1968. Herb taught courses on computer simulation, problem solving techniques, engineering economics, and industrial methodology. He was also instrumental in teaching off-campus courses on personnel management and engineering economics.

Herb rose to the rank of associate professor during his career in the department, and eventually became the Head Placement Director for Iowa State's College of Engineering, helping students secure employment after graduation. He served as president of the Midwest College Placement Association. Additionally, he served as a faculty advisor for Iowa State's chapters of the Society of Black Engineers and the Society of Women Engineers as well as to Delta Upsilon fraternity. Herb retired from Iowa State in 1989.

Herb reveled working in his shop and was forever tinkering with cars, working with wood and maintaining and fixing whatever needed or could be fixed. Herb was also an avid sailor. In retirement, Herb was active in his community serving on the board of Heartland Senior Services as well other community organizations including Green Hills. He truly enjoyed helping others.

Herb married Esther Hunter in 1955 in Sioux City, Iowa, and the couple enjoyed a 62-year marriage before Esther passed away in 2017. His parents and sister Mary Rosene also precede him in death. Herb and Esther had four children all of whom followed in their father's footsteps in different ways. Daughter Kathy became a professional musician and teacher, inspired by her father who had a deep passion for music and education; son Chuck played basketball for the Cyclones (1977-80) and went on to play professionally in Australia; and sons Dave and Mark both pursued careers in engineering. Numerous grandchildren and great grandchildren also survive him.

Dr. William O. Reece (ISU '54), emeritus professor, retired from the College of Veterinary Medicine in 1998. He taught physiology to veterinary and undergraduate students for nearly 40 years. During that time, he won several awards for outstanding teaching, and was selected ISU-CVM Professor of the Year in 1967 and the ISU Outstanding Teaching Award in 1970.

He served as an interim head of Tuskegee Veterinary College Physiology Department, from 1978-1979, during a leave of absence from ISU. He also taught physiology classes at Antigua's veterinary college and was a visiting professor at the University of Glasgow Veterinary School in Scotland. During his professional career, he served on several panels regarding veterinary education for the AVMA and the National Academy of Sciences, National Research Council. Those committees were charged with issues concerning minority education and with teaching animal welfare to students.

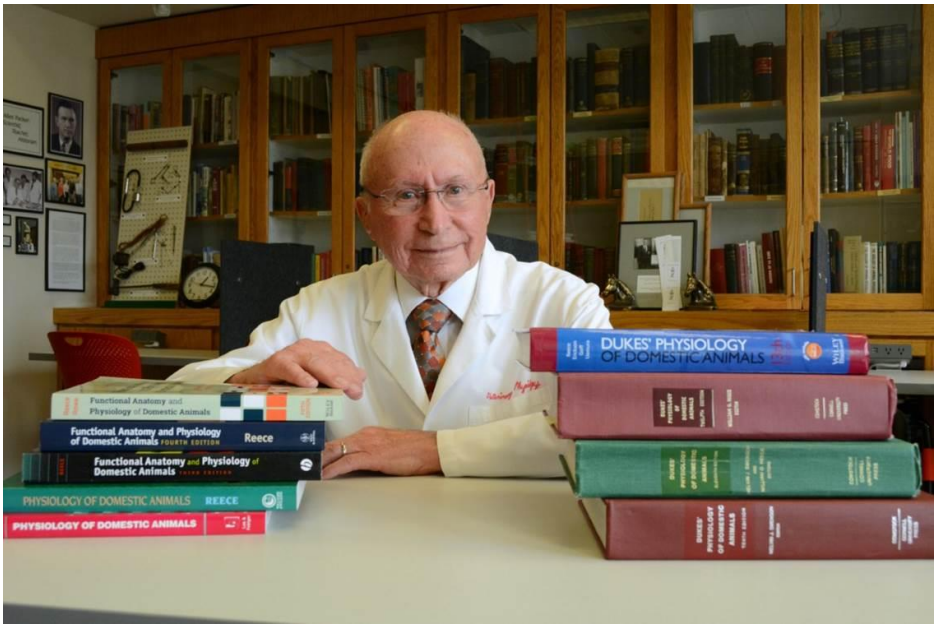
In 1996, Dr. Reece was named a University Professor at ISU.

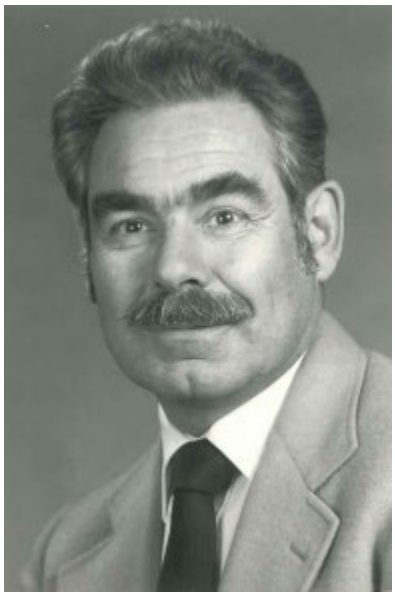
Dr. Reece was most proud of his work with Dukes' Physiology, a classic reference on domestic animal physiology. The textbook has been in use since its first edition in 1918. Dr. Reece started working on the 10th edition that published in 1984 and had been involved as an author and editor for decades after.

It was at our college that he had the most impact. Every DVM graduate took his physiology courses, and he taught over 2,000 DVM students. The college's advising award is named in his honor. In 1986, Dr. Reece established the Dr. H. Hugh Dukes Award to provide graduate fellowships for veterinarians. It was his goal to raise awareness of the need for additional graduate fellowships for veterinarians who return to get their PhD.

In 2018, Dr. Reece was the recipient of the William P. Switzer Award recognizing his contributions to society and to the college.

Dr. Reece's legacy is his commitment to educating and mentoring students. He was one of our outstanding alumni and faculty members. He was 94 years old. He will be missed.





Clifford E. Smith

Emeritus Professor Clifford Ellsworth Smith, age 96, died September 5, 2022. Clifford was born January 6, 1926 in Estherville, Iowa, to Fern Marriott Smith and Clifford Z. Smith. The family lived for a short time in Minnesota before moving to Independence IA and then settling in Osceola IA, where Clifford graduated from high school in 1944. He proudly served in the Army Air Corp for 17 months at the end of World War II. Following his discharge in 1945 he married his high school sweetheart Ruth Proudfoot and they established their home in Ames.

Clifford graduated with his BS degree in General Engineering in 1949, an MS degree in Industrial Engineering in 1959, and a Ph.D. in Engineering Evaluation in 1964, all from Iowa State College. He joined the Industrial Engineering Department as a faculty member at Iowa State and remained there until his retirement in 1989 where he taught classes in statics, strength of materials, safety engineering, engineering problems, industrial organization, and human resource management. In 1971, then ISU president Robert Parks asked him to serve as Interim Personnel Director for Iowa State University and to implement a merit system for non-faculty positions. He did that until 1974 when he returned to teaching full time. He became a labor arbitrator in 1968 and was honored to be accepted as a member into the National Academy of Arbitrators in 1977. He was proud of his contributions to labor and industry as an arbitrator.

Ruth, Clifford's loving wife of 47 years, preceded him in death in 1993. A second chapter of his life began when he met Peggy Stoll. He was blessed to spend his remaining years enjoying her company. They enjoyed traveling the world. They shared a love of fishing and spent much time in Minnesota and the Boundary Waters with friends. They enjoyed golf. They wintered in Tucson AZ and summered in Ames and Minnesota for many years. Clifford enjoyed sports. He was an avid handball player, but also enjoyed playing golf. However, the hours spent on a Minnesota lake with a fishing pole in his hand were the most treasured moments. He was a lifelong Cyclone fan. Clifford had a passion for music. He was surrounded by music from an early age. His mother, Fern, was a voice teacher and church soloist. He played the flute in the high school band. In retirement, he enjoyed taking lessons again and played in several senior bands. He sang with a hearty tenor voice and enjoyed performing in community musicals. He was active in ACTORS for many years.

Those left to remember Clifford are his children, Lachlan Smith (Kathryn) of Punta Gorda FL, Rebecca Neemann (Bruce) of Syracuse NE, and Scott Smith (Rich Joens) of Winterset IA. Seven grandchildren and 11 great-grandchildren, Peggy Stoll, his partner of 28 years, and her children and grandchildren, and many friends and neighbors.

Dr. Thomas D. Wheelock

May 15, 1925 – February 3, 2023

Dr. Thomas (Tom) D. Wheelock, University Professor Emeritus in the Department of Chemical and Biological Engineering, passed away February 3, 2023. He was the second emeritus faculty member in the department to pass away in less than a month's time. Dr. George Burnet V, a cohort who joined the faculty at nearly the same time as Wheelock, passed away a few weeks earlier (see a separate obituary for Burnet submitted for this resolution).

Tom was born in Cusihuirichi, Chihuahua, Mexico May 15, 1925, to Harry E. Wheelock, an engineer for a U.S. mining company, and Lottie (Quist) Wheelock. Throughout his life, Tom fondly remembered growing up in "Cusi" and returned to his boyhood home several times.

The family moved to Missouri Valley, Iowa in the 1930s where Tom attended high school and was the valedictorian of the class of 1943. Tom came to Iowa State University (then Iowa State College) as an undergraduate student in 1943 as part of the U.S. Navy's V-12 College Training Program. After graduation, he entered the V-12 program at Iowa State. He was later commissioned as an officer and served on the U.S.S. Columbus at the end of World War II.

Tom returned to Iowa State to continue his studies in chemical engineering and graduated with a B.S. in 1949. After graduation he was employed at Westvaco Chemical Company in Charleston, WV. While working in Charleston he met Edra Smith, whom he married in 1952 in Clendenin, West Virginia.

He returned to Iowa State again in 1954 to pursue a graduate degree. He received a Ph.D. in chemical engineering in 1958 and then joined the Department of Chemical and Biological Engineering as an assistant professor. He taught, conducted research and mentored graduate students for more than 40 years. He was named professor in 1964 and elevated to university professor in 1994.

Wheelock's research at Iowa State focused on processes for cleaning and utilizing coal; however, his doctoral dissertation and early research laid the foundation for a new process capable of producing sulfur dioxide from either natural or waste materials composed largely of calcium sulfate. Such a process made it possible to use an alternative raw material for the production of sulfuric acid, which had been

largely from elemental sulfur. The work was supported mostly by private industry and led eventually to eight domestic and foreign patents and a dozen journal articles.

Wheelock is also known for research involving the fluidization of sticky materials in powders, and one project funded by a grant from the U.S. Department of Agriculture led to significant improvement in the processing of materials such as cereal starches and flours.

He was a key figure in a 1970s Iowa State University research project to remove sulfur from Iowa coal in an effort to assist the struggling Iowa coal mining industry. In the mid-1990s he was part of a research team funded by the U.S. Department of Energy to develop a reusable calcium-based sorbent for desulfurizing hot coal gas. Several patents were awarded as a result of these efforts.

Special honors Wheelock received while at Iowa State include the Chemical Engineering Department's teaching award in 1961; a Faculty Citation from the Iowa State University Alumni Association in 1974; election as a fellow of the American Institute of Chemical Engineers in 1987; election as a fellow of the Iowa Academy of Science in 1988; the Governor's Science Medal for Science Achievement in 1991; and the Margaret Ellen White Graduate Faculty Award in 1999.

Tom was an active member of Collegiate Presbyterian Church of Ames for more than 60 years, serving as a deacon and trustee, and chairing several major projects to preserve and improve the church building. Tom was interested in genealogy and was pleased to have visited the home sites of his ancestors in England and Sweden. He enjoyed flying and was a member of the Ames Airman flying club for several years.