



A Brief History of Buchtel College - University of Akron

The institution now known as The University of Akron was founded as Buchtel College in 1870 by the Ohio Universalist Convention. By 1907, Buchtel College's emphasis on local rather than denominational interests led it to become a private, non-denominational school. The world's first courses in rubber chemistry were offered there beginning in 1909. The college's strong ties to the community and its challenging financial situation prompted Buchtel College trustees to transfer the institution and its assets to the city of Akron in 1913. The formation of the Rubber Technical Institute occurred in 1942. For 50 years, the municipal University of Akron, assisted by city tax funds, brought college education within the reach of many more young people. During those years, enrollment swelled from 198 to about 10,000. In 1967 the College became a state university. In the years to follow, as tire production jobs left the Akron area, the University's pioneering research was instrumental in helping the once-undisputed Rubber Capital of the United States evolve into the polymer center of the world. In 1988, the University established the world's first College of Polymer Science and Polymer Engineering - now the largest academic program of its kind in the world.

A Brief History of the Department of Mathematics

What are the essential courses in a liberal arts education? The founders of Buchtel College faced this question in 1870. The first courses offered at the new college were Ancient Languages, Mathematics, Natural Science, Philosophy and English. Thus the history of mathematics at Buchtel College starts with the establishment of the College itself. Initially there were only eight faculty members in all of Buchtel College; three were fired at the end of the first year. The first professor of mathematics was [Alfred Welsh](#), followed in 1874 by Elias Fraunfelter. Professor Fraunfelter was elected city superintendent of schools in 1883. His successors at Buchtel College were George S. Ely (for one year) and in 1884 [Charles S. Howe](#), who had been adjunct-professor under Professor Ely.

The first mention of mathematics as a department of instruction appears in the general catalogue of Buchtel College in 1885. C.S. Howe and P.G. Wright are listed as members of the Department of Mathematics and Astronomy. Banker Henry Ainsworth of Lodi, who passed away in 1883, endowed The Ainsworth Professorship of Mathematics and Astronomy. Professor Howe was the first holder of this endowed chair. Howe also secured money to build and equip a small observatory. Howe left Buchtel College in 1889, went on to become President of Case School of Applied Science in 1902, and the observatory fell into disuse. Howe was followed by astronomer Hermas V. Egbert, whose period of service in the department was the longest of that era: 1889-1903, and again from 1917-20.

Egbert also taught meteorology and served as Akron's official weather forecaster for more than 20 years. After a fire destroyed Buchtel's main building in late 1899, the observatory was moved west near the boiler house to make room for Buchtel Hall. Ultimately, the observatory fell prey to a growing city. Light pollution and factory smoke spoiled the view for stargazers. By the time Buchtel College transformed into a municipal university in 1913, the view was clouded. A 1920 article in the Buchtelite student newspaper noted that Professor Egbert was using a lantern to teach a night class at "what is left of the observatory." Electricity had been shut off in the ramshackle building.

No other department of the College had so many changes as occurred in the Department of Mathematics. Until 1968 each man who served as department head also had the title of Ainsworth Professor of Mathematics. From 1903 to 1905 the Department was headed by Professor Frank M. Morrison and listed a calculus course taught from the book by Daniel A. Murray entitled "Integral Calculus". Following Professor Morrison came Wilfred H. Sherk, [Paul Biefeld](#) (a discoverer of the Biefeld–Brown effect), Francis J. Holder, and Sidney J. Lockner. With the coming of Biefeld, work in physics was added to that of the department of mathematics, and was carried on there under Holder and Lockner until a separate department of physics was established in 1918 under Professor F. F. Householder.

The catalogue of 1906 makes the first reference to a major in mathematics. The 1906 undergraduate bulletin records: "The courses in this department have been planned to serve two purposes: first, to offer the study as a part of a liberal education, as a mental discipline to train the student in logical thinking and in the use of exact language; second as a tool in further college work in the pursuit of the sciences."

Municipal University of Akron

In 1913 when Buchtel College transformed into the Municipal University of Akron there were fifteen faculty members teaching at the collegiate level. Professor Lockner was head of the Department of Mathematics. He was succeeded by Max Morris as acting-head; Morris left to assume a position as Assistant Professor at Case School of Applied Science in 1920. On Morris' resignation John Lewis Jones became head of the department and remained in that position until he retired in 1945.

Miss Will Lipscombe joined the Department in 1921. [Sam Selby](#) was hired in 1927, and after completing a Ph.D. at the University of Chicago, was named Assistant Professor in 1929. He became Department Head in 1945 and remained in the Department until 1968, serving as Department Head for 23 years.

The department was placed in the Natural Sciences Division of the Buchtel College of Liberal Arts in March 1935. By the 1940s, the Department had grown to 16 faculty members, six of whom had a professorial rank. They offered general college courses through integral calculus, including Business Mathematics and Social Statistics. At the upper level were courses in Advanced Calculus, Geometry, Advanced Engineering Mathematics, Astronomy and Mathematics of Insurance. Jones retired in 1945, and Samuel Selby became Department Head and was the last person to assume the title of Ainsworth Professor of Mathematics.

Professors [Margaret Mauch](#) (1945), [Louis Ross](#) (1946) and Leonard Sweet (1959) were added and served long tenures in the Department. Mauch has been named among the Pioneering Women in American Mathematics, having received her Ph.D. in

Mathematics at the University of Chicago in 1938. She continued at the University of Akron until 1966.

Frederic E. Ayer, a civil engineering professor at the University of Cincinnati, came to The University of Akron as the first dean of the College of Engineering in 1914. When Dr. Ayer retired from the deanship in 1946 he continued to teach in the Department of Mathematics until 1949.

Ernest Tabler, who was hired in 1935, taught the Numbers Communications course to 1200-1500 students per semester during the mid-50s. Tabler became Assistant Director of Adult Education. Subsequently the course was moved to the College of Education.



Professors Selby, Tabler, Lipscombe, Mauch in 1955.

In 1960 there were seven faculty members with professorial rank in the Department of Mathematics (Selby, Davis, Lipscombe, Mauch, Ross, Sweet, Tabler). The Department was offering a Bachelor's degree in Mathematics, and in 1962 a Master's degree in Mathematics was added. Samuel Selby continued as Department Head and the Department was housed on the top two floors of the education building. During the next few years other faculty members joined who stayed with the Department for many years: [William Beyer](#) (1961), George Szoke (1964), Ernest Kuehls (1965), [William Hokman](#) and Martha Lierhaus (1967), Douglas Cameron and Peter Gingo (1969). In addition [Louis Rodabaugh](#) returned to the department in 1964. In 1968, the Bachelor's and Master's degrees in statistics were introduced. The mathematics honorary, Pi Mu Epsilon, was founded in the fall of 1969 under the direction of Louis Ross who was the first advisor.

By 1969 the Department was housed in the back tower of Auburn Science Center and William Beyer had assumed the position of Department Head. The first departmental secretary was also hired during this decade. Of historical interest is that, in the UA Board of Trustees records, a plan is noted to send a request to the Ohio Regents for a Master's Degree in Computer Science for September 1969.



Ayer Hall

In 1972 the name of the department became the Department of Mathematics and Statistics. Also in 1972 William Hokman developed the Modern University Mathematics program which was taught over closed circuit television. Many faculty members participated in creating “Math Review Tapes” and were regularly shocked as they walked past study carrels around the campus and saw themselves teaching mathematics. The Department moved to Ayer Hall in 1974.

In this decade, the Department had a period of rapid expansion with the addition of programs in Applied Mathematics and Computer Science. In 1977 the name of the Department was changed to the Department of Mathematical Sciences. After years of offering a certificate program in Computer Science, in the fall of 1979 the Department first offered a Bachelor’s degree in Computer Science. Leonard Sweet obtained funds from the National Science Foundation and the UA Evening College to equip the first computer laboratory with Apple computers. The courses were taught by the existing mathematics faculty. This program attracted large numbers of students. The Master’s degree in Applied Mathematics was also added in the fall of 1979.

By the late 80s there were 37 full-time faculty members, 35 part-time and 40 graduate assistants. Interestingly, even with such growth in the department, faculty members still shared phone lines. Late in this decade, the administrative structure of the department was changed when the department was divided into three divisions: computer science, applied mathematics/mathematics, statistics. Each division had a coordinator who served on the Executive Committee, along with the chair and the associate chair.

In 1995 the Department added a collaborative Ph.D. program in Applied Mathematics with the College of Engineering and granted its first Ph.D. degree in 1997. In 1998 the Women in Mathematics program was begun, originally sponsored by the [Mathematical Association of America](#) and the Tensor Foundation. A goal of this project was to retain more women mathematics students at all levels, from undergraduate through graduate, and to provide them with a strong network of support.

In 1998, the Department of Statistics was formed (with Chand Midha as chair) and the department was named the Department of Mathematics and Computer Science. In 2001, the Department of Computer Science was formed (with Wolfgang Pelz as chair) and the department was named the Department of Theoretical and Applied Mathematics. In 2002 the Department moved to the new College of Arts and Sciences Building, equipped with new computer laboratories and classrooms.

In 2005-2007 the Department received funding from the National Science Foundation to host an eight-week Research Experience for Undergraduates. At the time, the department was the only Ohio department with such a funded program.

Once again, in 2010, the name of the Department was changed to the Department of Mathematics.



References:

- “Fifty years of Buchtel College” 1870-1920 edited by Albert Isaac Spanton, 1922. Published by Buchtel College Alumni Association.
- “Summit’s Glory” by George W. Knepper, The University of Akron Press, 1990.
- “Local history: Buchtel College's advanced observatory helped students explore universe” by Mark J. Price, Akron Beacon Journal, June 7, 2010.

Chairs of the Department

Department chairs were established in 1873. A list of the Department chairs from 1873-1990 are listed [here](#) with links to brief biographies. Since Dr. Beyer’s retirement as head at the end of 1990, the following have served as head or chair of the department:

- David C. Buchthal: 1990-96
Buchthal was hired in 1971. He was named acting department chair in 1990, department head in 1992, and department chair in 1994. He became Associate Dean of Buchtel College of Arts and Sciences in 1996 and retired from the University in 2000.



Buchthal and Beyer

- Phillip H. Schmidt: 1996-2000
Dr. Schmidt was hired in 1972. He was named department chair in 1996, and retired from UA in 2000. He subsequently became Director of the Center for Integrative Natural Science and Mathematics at Northern Kentucky University.
- Wolfgang Pelz (interim): 2000-2001
Dr. Pelz joined UA in 1978 and became acting chair in 2000. Following his term, he became chair of the Computer Science Department in 2001 and retired from UA in 2010.
- Jianping Zhu: 2001-2005
Dr. Zhu earned his Ph.D. in applied mathematics from the State University of New York at Stony Brook. He was hired as Department Chair in 2001 from Mississippi State University. He left UA to become department chair at the University of Texas, Arlington.
- Kevin Kreider (interim): 2005-2006
- Joseph Wilder: 2006-2010
- Timothy Norfolk: 2010-

Heads of Department of Mathematics

<u>Alfred Welsh</u>	1872-1874
Elias Fraunfelder	1874-1883
George S. Ely	1883-1884
<u>Charles S. Howe</u>	1884-1889
Hermas V. Egbert	1889-1903
Frank M. Morrison	1903-1905
Wilfred H. Sherk	1905-1906
<u>Paul Biefeld</u>	1906-1911
Francis J. Holder	1911-1913
Sidney J. Lockner	1913-1919
Max Morris	1919-Feb. 1920
John Lewis Jones	Feb.1920-1945
<u>Samuel Selby</u>	1945-1968
<u>William H. Beyer</u>	1969-1990

William H. Beyer was hired in September 1961. He was named professor and department head in 1969. In the mid 1970's, William Beyer assumed the role of editor of the CRC Standard Mathematical Tables & Formulae. His editorship continued over the next fifteen years, from the 24th edition in 1976 to the 29th edition in 1991. He was President of the Ohio MAA in 1977-78 and Section Governor in 1982-85. He was Associate Dean of Buchtel College of Arts and Sciences from 1990-1993. He then served as Associate Vice President for Administrative Support in Business and Finance from 1993-98. He retired from the University in February 1998. ([Return to first mention.](#))



Dr. Paul Alfred Biefeld (22 March 1867 – 21 June 1943) was born in Jöhstadt, Saxony, Germany. He was the son of Heinrich and Wilhelmina (Glaeser) Biefeld, he moved to the United States in 1881. Biefeld received his B.S. in Electrical Engineering at the University of Wisconsin in 1894. He received his Ph.D. at the University of Zurich, Switzerland in 1900.

He married Emma Bausch, of Frankfurt am Main, on 11 April 1900. He was the Assistant Principal of Appleton Wisconsin high school 1894-1897. Paul was the lab assistant in Physics and Electrical Engineering at the ETH Zürich, 1899 – 1900, where he met Albert Einstein. Biefeld was the professor of Physics and Electrical Engineering at the Hildburghausen Technikum, Germany 1900 – 1906. He was also the professor of Physics and Astronomy at the University of Akron, Akron, Ohio in 1906 and continued until 1911. He arrived at Denison University in 1911 where he was the professor and lecturer of Astronomy and the Director of the Warner and Swasey Observatory. He continued to teach at Denison University and lived in Granville, Ohio until his death in June 1943.

Biefeld joined the Yerkes Eclipse Expedition to Denver, Colorado in 1918. He was the research assistant at the Yerkes Observatory for the summer of 1919. Biefeld was part of the Yerkes Eclipse Expedition to Catalina Island in September 1923. He is noted for his study of Electrohydrodynamics with Thomas Townsend Brown; their discovery is known as the Biefeld–Brown effect. ([Return to first mention.](#))

From:
Wikipedia, the free encyclopedia

Dr. Robert C. Carson was born in Akron and was an area resident most of his life. He joined the University of Akron in 1963 as Assistant Dean of Graduate Studies and Research and Coordinator of Funded Research. He retired from the University of Akron in 1989 as Associate Professor Emeritus of Mathematics.

Dr. Carson was a graduate of Buchtel High School, received his Bachelor's and Master's degrees from Purdue University and his Ph.D. from the University of Wisconsin in 1953. He was a devoted member of St. Matthew Lutheran Church in Norton where he served as an Elder and was on the Board of Directors of the SELC District. Robert was also a proud Army Veteran having served during World War II. He passed away October 14, 2010 at 86 years of age. ([Return to first mention.](#))

William Hokman was a native of Parkersburg, West Virginia. He received B.S. (1953), M.S. (1956) and M.A. degrees (1958) all from the University of West Virginia. He joined the University of Akron in 1967 and was instrumental in developing the Modern University Mathematics (MUM) course for non-science students. He was principal lecturer and coordinator for this course as it was taught over closed-circuit television for seventeen years. The following demonstrates the memory of Hokman's wit in this teaching situation.

"I took MUM in the mid 1970s. Professor Hokman gave the last lecture in full academic regalia. At the end he took off his robe to reveal a University of West Virginia t-shirt and had John Denver's Almost Heaven West Virginia playing in the background. Entire class cracked up."

An avid antique clock collector, he was known as one of the most knowledgeable clock persons throughout the Akron community. Professor Hokman retired in January, 1990 and passed away August 21, 1996 in his beloved West Virginia. ([Return to first mention.](#))

Charles Sumner Howe, who is giving a most able administration as president of the Case School of Applied Science, in Cleveland, was born at Nashua, New Hampshire, September 29, 1858, a son of William R. and Susan D. (Woods) Howe. He received in 1878 the degree of Bachelor of Science from the Massachusetts Agricultural College, and has the same degree also from Boston University. He took a post-graduate course in mathematics and physics, at Johns Hopkins University; he received from Wooster University, in 1887, the degree of Doctor of Philosophy; in 1905 Armour Institute of Technology, Chicago, conferred upon him the degree of Doctor of Science, and from both Mount Union and Oberlin colleges, Ohio, he has received the honorary degree of Doctor of Laws. He was president of Albuquerque (New Mexico) Academy in the period of 1879-81; was professor of mathematics and astronomy in Buchtel College (now Akron University), Akron, Ohio, 1883-89, and he then became professor of mathematics and astronomy in the Case School of Applied Science, of which he became acting president in 1902, and of which he has been the president since 1903. President Howe is a fellow of the American Association for the Advancement of Science and the Royal Astronomical Society, and has membership in the Astronomical Society of the Pacific, the American Mathematical Society, and the Astronomical and Astrophysical Society of America. He has made many and valuable contributions to the standard and periodical literature of science, notably to the *Astronomical Journal* and the *Journal of the Association of Engineering Societies*. May 22, 1882, he wedded Miss Abbie A. Waite, of North Amherst, Massachusetts.



Howe was 80 when he died in 1939 in Massachusetts. ([Return to first mention.](#))

From:
A History of Cuyahoga County and the City of Cleveland
By: William R. Coates
Publishers: The American Historical Society, Chicago and New York, 1924

Margaret E. Mauch (June 1, 1897-November 16, 1987) was born in De Smet, South Dakota, the first child of Rose (Brekhus) and Henry Mauch. Her mother was born in Norway and her father in Wisconsin of German parents. Mauch grew up in the east central area of South Dakota near De Smet.

Margaret Mauch attended elementary and secondary public schools in South Dakota. She studied at Huron College (now closed) in Huron, about thirty miles from De Smet. After receiving her bachelor's degree in 1919, she taught for a year at the Winner, South Dakota high school in the south central part of the state and then was principal of the Edgerton high school in Minnesota for a year. The next two years, 1921-23, Mauch attended the University of Chicago where she was secretary-treasurer of the Junior Mathematical Club 1922-23. She received her master's degree with a thesis in theoretical mechanics in 1923.

Mauch taught in the high school in Jacksonville, Florida, 1924-25 and was an instructor and assistant professor at Randolph-Macon Woman's College in Lynchburg, Virginia, 1925-29. She returned to the University of Chicago to take graduate courses during the summers of 1926, 1928, and 1929. Following the summer of 1929 she remained at Chicago for the academic year 1929-30. She again took summer classes at Chicago during 1931 and 1938 and received her PhD in 1938 having written a dissertation in number theory under the direction of L. E. Dickson. Although Mauch's degree was not conferred until 1938, she had obtained some of her results on Waring's theorem for seventh powers considerably earlier. In Dickson's 1933 article "Recent Progress on Waring's Theorem and its Generalizations" he mentions her work on page 721 at the end of the section he calls "Remarkable Empirical Generalizations of Waring's Theorem." Mauch was head of the mathematics department at the high school in Brookings, South Dakota, 1934-42 and then was an instructor and assistant professor at Carleton College in Northfield, Minnesota, 1942-44. She spent 1944-45 as an instructor at Michigan State College (now Michigan State University). In 1945 Mauch became assistant professor at the University of Akron, where she was to stay the remainder of her career. When she first went to Akron she regularly attended meetings of the Ohio Section of the MAA and was a referee for the American Mathematical Monthly. She was promoted to associate professor in 1950 and to professor in 1962. She retired in June 1963 but continued teaching at the University of Akron and was given the rank emeritus professor in 1966. In 1966 Margaret Mauch and her sister, Ruby Mauch, moved back to Huron, where they both had attended college and where their younger brother, Ralph, was an attorney and officer of the Northwestern Public Service Company. Margaret Mauch died at the Violet Tschetter Memorial Home in Huron at age ninety in 1987. She was buried in the Hetland, South Dakota, cemetery. ([Return to first mention.](#))

From:

Supplementary material for pioneering women in American mathematics: the pre-1940s PHDs
By: Judy Green and Jeanne Laduke

Mary Maxwell was a native Ohioan, born in Sidney, OH in 1947. She received a B.S. degree from Ashland College (1969). She was high school mathematics teachers for several years before obtaining an M.S. degree from UA in 1974. She continued at UA as an Instructor and then Assistant Professor and obtained her Ph.D. degree at Ohio State University in 1988. Dr. Maxwell was known as an excellent mathematics teacher, developing new mathematics courses for education majors and students in the biological sciences. She was a pioneer in the field of integrating technology into mathematics courses. At her untimely death in December 1990, the Mary E. Maxwell Memorial Scholarship was endowed by members of the Department, her family, and the community to recognize her contributions to mathematics community education. ([Return to first mention.](#))



Louis D. Rodabaugh was born in Akron and was an area resident most of his life. He received his Bachelor's degree from Miami University and Master's and Ph.D. (1938) degrees from the Ohio State University. He first joined the University of Akron in 1947-48 as Assistant Professor of Mathematics. He returned to the University in 1964 and retired from the University of Akron in 1978 as Professor Emeritus of Mathematics. He also served as Church Organist for the Greentown United Methodist Church where he retired after many decades of service. Active throughout all of his life, he won an international poetry contest sponsored by the Alabama State Council of the Arts at the age of 94. He died at age 99 on December 4, 2012. ([Return to first mention.](#))



Louis Ross was born and raised in Akron and earned three degrees at The University of Akron: Bachelor's degrees in Mathematics and in Chemistry and a Master's degree in Education. After graduation he taught in the Akron public schools and then served in the United States Air Force during World War II. Upon his return in 1946 he became an Associate Professor in the Department of Mathematics. In 1955 he earned his Ph.D. at Case Western Reserve University.

A quiet person and a devoted teacher, Dr. Ross missed only one day of class for illness in over thirty years. He was instrumental in establishing the Ohio Nu chapter of Pi Mu Epsilon, the mathematics honorary for students. He was also actively involved with metrics education, giving frequent lectures and workshops to acquaint teachers and others with the metric system.

He retired from UA in 1977 as Professor Emeritus of Mathematics and passed away December, 1995. ([Return to first mention.](#))

Samuel M. Selby (Silverfarb) was hired by The University of Akron in 1927 and left in 1928 to complete a Ph.D. at the University of Chicago and returned to Akron as an assistant professor in 1929. He was named professor and head of the department in 1945, and he received the department's first NSF grant in the spring of 1963. Sam Selby earned a national reputation as the editor of the CRC Standard Mathematical Tables & Formulae, the primary source for mathematical information throughout the United States. He was named distinguished professor of mathematics in 1966. He was President of the Ohio MAA in 1957-58. He retired in December 1968 as Distinguished Professor Emeritus and Ainsworth Professor of Mathematics. He passed away in August 1976 at the age of 72. ([Return to first mention.](#))

Alfred Hix Welsh was born in 1851 in Fostoria Ohio. His father was a lawyer but died when Alfred was but eleven years old. By hard manual labor he contributed to the support of his widowed mother and three sisters. He was by turns a dry goods clerk and then a farmer but by frugality he managed to secure funds which enabled him to enter Baldwin University situated in Berea, Ohio. Here he distinguished himself as a student and in 1872 graduated valedictorian of his class and with the degree of AB. He designed to enter the legal profession but never carried out his purpose. Three years later he took the AM degree from Baldwin University. It was in 1872 that he became a member of the Buchtel College faculty and occupied the chair of mathematics until 1874. During the year 74 -75 he occupied the chair of Natural Sciences. This year closed his connection with the College and he accepted a position in the Columbus Ohio High School as professor of English Literature and Language which he held from 1876 to 1881. At this time his literary labors so engrossed his attention that he devoted his entire time and energy to that work. His works published prior to 1884 are as follows: "Essentials of Geometry", "Essentials of Trigonometry", "Plane Trigonometry and Functional Analysis", "Plane and Solid Geometry", "Essentials of English Idiom and Usage English," "Literature in the Eighteenth Century", "Development of the English Literature and Language" (his greatest work), "Inductive Rhetoric."

Wishing to know more about this former Buchtel professor I had several interviews with Prof. Elias Fraunfelter upon the subject as he had been a warm friend of Prof. Welsh. Among other things I learned that the distinguished author was possessed of a most wonderful and retentive memory. He had but to read a poem or selection of prose and it was his. His reading while at Buchtel was wide and varied as indeed it must have been at all times for no less than 170 authorities are quoted in his great work. While at Buchtel and at all other places so far as can be known he always preserved a cheery disposition and was foremost in the sports of the field.

Professor Welsh passed away in 1888. ([Return to first mention.](#))

From:

A.E.Hyre, The Rainbow: A quarterly literary and fraternity magazine, published by Delta Tau Delta Fraternity, 1888.