

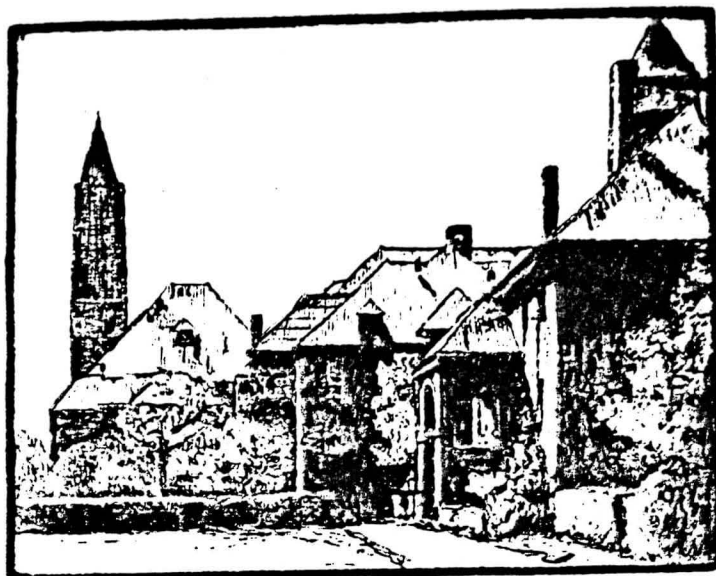
# Mathematics at Goucher

## 1888-1979

by

Beale W. Cockey  
Class of 1980





Etching by Dano F. Jackley

# GOUCHER

## THE WOMAN'S COLLEGE OF BALTIMORE

IN A CITY OF RICH CULTURAL INFLUENCE •  
WITH A DISTINGUISHED FACULTY • INTER-  
ESTING FELLOW STUDENTS • COURSES WHICH  
FIT A WOMAN TO HER TWENTIETH-CENTURY  
WORLD • STIMULATING LABORATORIES AND  
LIBRARIES • A HAPPY COLLEGE HOME • AT A  
COST RULED BY REASON • INVITES YOU TO AN  
EDUCATIONAL ADVENTURE • PLEASE REPLY  
TO THE PRESIDENT OF GOUCHER COLLEGE  
BALTIMORE • MARYLAND

## ACKNOWLEDGEMENTS

Most of the information for this History is from the Goucher Alumnae Quarterly and the College Bulletins, supplemented by the records in the Alumnae Office and elsewhere. For the sake of making it readable, footnotes have been avoided.

We should like to express our appreciation to former Dean of Students Martha Nichols for providing us with a sense of perspective on the history and development of the College and to Donna Ingram and Libby Olton for their help with the research and editing of this history. Invaluable to the completion of this work was the cooperation of the people in the following:

The Alumnae Office

The President's Office

The Julia Rogers Library

September 1, 1979

Dedicated to

Professor Geraldine A. Coon

without whose inspiration and help  
this history would not have been  
written.



The mathematics department, though varying in size and curriculum and sometimes including astronomy, has been an integral part of Goucher College since its founding in 1888 as the Woman's College of Baltimore, under the auspices of the Methodist Church. In writing this brief history of the mathematics department, we wish to share some of the information about the people and events that have shaped the mathematical education provided for women at Goucher over the past ninety-one years. As it would be impossible to tell about everyone who has been involved with the department during this time, both for lack of space and incomplete information, we have, therefore, tried to choose a few who are representative.

The history of mathematics at Goucher falls naturally into four periods. For each period we shall describe the faculty, students, and curriculum.

#### A. THE FIRST TWENTY YEARS

When the Woman's College of Baltimore opened in September of 1888, it was the first accredited college south of the Mason-Dixon line to provide a liberal arts education for women. Evidence of the novelty of this educational adventure is that there was such a lack of college preparatory programs for girls that the College was obliged to start its own preparatory department, The Girls Latin School, in 1890. The Girls Latin School, "with emphasis on Latin as a foundation course, was the first of its kind in the city and state and among the first in the South."\* The preparatory department was continued until 1909, when the National Association of Collegiate Alumnae decided to bar from membership any college with a preparatory department; at which time Girls Latin School was reorganized as an independent institution.

One of the original group of faculty members and the first member of the mathematics department was Professor William Curns Lawrence Gorton, a native Baltimorean, who attended public primary school and Baltimore City College,

---

\*The What-Not of the Girls Latin School Class of 1940, fiftieth Anniversary Edition, p. 5.

receiving upon graduation one of three Peabody prizes of one hundred dollars given for outstanding scholarship. He then entered The Johns Hopkins University where he studied for several years, earning his Bachelor of Arts Degree in 1886 and Doctor of Philosophy in 1889. In her recollections of first days at the Woman's College of Baltimore, published in the winter Alumnae Quarterly of 1960, Anna Heubeck Knipp comments on William Gorton:

I remember that one teacher was found here in Baltimore at Hopkins University. He was soon to get his Ph.D. and could be professor of Mathematics and Astronomy if he supplied one lack. The corporators had decided that no unmarried man could teach in our College. Could Professor Gorton have a wife before college opened? He could and he did. I was to major in mathematics, so I was especially interested in Dr. W. C. L. Gorton.

Professor Gorton remained on the faculty until his death from tuberculosis November 8, 1894. Besides organizing the mathematics department, he had served on numerous committees and had assisted in the organization of the physics minor. His concern for his students and general good nature made him one of the best loved faculty members. During his last months at the College, Professor Gorton was relieved of some of his duties as instructor by Miss Anna Van Vleck and was acting Dean during the illness of Dean Van Meter. He is supposed to

have said to his wife on the evening of his last day at the College," . . . I have finished the last piece of office work today, and now the College can go on without either Dr. Van Meter or me for a few days, if need be."

Among the five students who formed the first graduating class in 1892, Anna Heubeck Knipp and Katherine Haver Hilliard were both mathematics majors. Katherine Hilliard returned to North Carolina to be a teacher and later vice-principal of the Francis Hilliard School, organized by her father and dedicated to quality college preparatory education for girls. She later taught in Omaha in the Brownwell Hall and the Omaha High School until her retirement in 1925. When the Alumnae Association of the Woman's College of Baltimore was established in 1893, Katherine Hilliard was elected its first president. She was active in a literary society in Oxford, which she helped to organize, in the work and activities of the Protestant Episcopal Church, and in the D.A.R. Anna Heubeck taught Latin, geometry, physiology, biology, and history at the Girls Latin School for three years. She married George Walter Knipp in 1905. Mrs. Knipp was active in religious activities both of the Presbyterian Church and interdenominational organizations. For eight years she was on the Board of Directors of the Isabella Thoburn College in

Lucknow, India, Goucher's sister college in the far east and the first woman's college in India. Her many worthwhile activities are too numerous to list, but with all of these Anna H. Knipp remained a devoted supporter of Goucher College, receiving an honorary degree in 1938 as "exemplar of the ideal of Goucher College." An article in the Alumnae Quarterly on the event of Mrs. Knipp's death in April, 1966 at the age of 95 summarizes her extensive work for the College.

. . . She was the last surviving member of its first graduating class--as Anna Heubeck she was the president of that class. She was the founder and president of its alumnae association, the first president of its alumnae council and its fund. She served as a member and Secretary of the Board of Trustees. She was coauthor of the history of the College published at the time it celebrated its fiftieth anniversary . . . indeed, she brought the work of some 600 pages to completion after the death of her collaborator. Her love of Goucher and her interest in its steady progress spanned more than seven decades.

Anna Heubeck's college diploma hangs in the foyer of the dormitory which bears her name.

The courses in mathematics which were offered to the first classes divide into required courses and electives. All regular first year students took algebra, solid geometry and plane trigonometry. Provision was also made for "special"

students, those whose background in certain subjects did not qualify them for full collegiate standing, to be instructed in arithmetic, including the metric system; algebra, including quadratic equations, radicals, ratio, proportion and progression; and plane geometry. Those who were interested in concentrating on mathematics could then elect a plane geometry course in the second year, differential and integral calculus and the theory of equations in the third year, and differential equations and solid geometry in the fourth year. Astronomy was also part of the mathematics department, taught first by Dr. Gorton and then by his successor, William Maltbie, and was offered as an elective for those who had a background in physics, as well as mathematics. The astronomy course included not just theory, but practical work involving the use of a sextant.

In the early days Goucher students did not major in a discipline; they elected a group. Among the principal groups from which the student could make her choice, those which contained mathematics were Latin-Mathematics, Mathematics-Physics, Mathematics-Chemistry, and Mathematics-Biology. This group concept, which had originated at Johns Hopkins University, was probably used by Goucher during this time because of the

limitations on the number of courses which could be offered by each department.

William H. Maltbie joined the faculty in 1895 as an instructor and remained as an associate and then full professor until 1909. He had received his education at Ohio Wesleyan University and The Johns Hopkins University. Besides teaching mathematics, Dr. Maltbie undertook, in 1903, the office of registrar, which had been a secretarial position in the dean's office, and organized an independent and efficient system. The result of his work was the recognition of the registrar as an administrative officer of the College. As registrar he edited the office's publication of the Bulletin of The Woman's College of Baltimore. While at Goucher, he studied law at the University of Maryland Law School and was admitted to the bar. After leaving Goucher in 1909, William Maltbie continued to serve the College as a Trustee for several years and went on to distinguish himself as Counsel for the United Railways & Electric Company. Upon his death in January, 1926, a newspaper obituary said of him,

Men marveled at the clearness, force and elegance of the Maltbie contributions to the literature on utility subjects and the oral discussions of such subjects by him, but the answer was not far to seek. It,

was to be found in the early scholastic training of the man and his insistence, without being pedantic, that things should be right. Indefatigable industry was at the bottom of it all. As the Baltimore Sun so aptly said, vague thinking, loose verbiage, obscure objectives, all were hateful to him.

A memorial fund in Maltbie's name was established by the Class of 1908 and is still used, mainly to buy books.

The office of registrar passed from Dr. Maltbie to his student Carrie Mae Probst, a mathematics major of the class of 1904, who served the College as registrar until 1948, receiving a citation from the College in 1952 in recognition of her outstanding work and dedication to the College. Miss Probst was also President of the Maryland State, the Middle Atlantic, and the American Association of Registrars. It is remembered to her credit that she adopted and raised her five nephews and nieces, and that she was active in the work of the Lutheran Church, particularly in promoting the Lutheran Student Association.

In 1897, the mathematics faculty was enlarged by the addition of a lady who is fondly remembered by all who met her, Clara Latimer Bacon. Miss Bacon grew up in Illinois and graduated from Hedding College, receiving an A.B. in 1890 from Wellesley and an A.M. from the University of Chicago in



1894. She was, in 1911, the first woman to receive a Ph.D. in mathematics from The Johns Hopkins University. She and her family moved into a house on Calvert Street which became well known for its hospitality to all. As a teacher, Miss Bacon was known for the clarity of her lectures, her confidence in her students, her contagious enthusiasm for the beauty of mathematics, and her sense of humor, especially her Ida stories. Ida was the Bacon's faithful servant, well known to everyone who knew the family. One well-remembered episode is of the morning Miss Bacon received her Ph.D. degree. Ida was up early and out scrubbing the front steps. When Miss Bacon gently remonstrated with her, Ida replied, "Miss Clara, these steps has to be clean. Now that you is a Doctor, it do call for that." Ida is also reported to have maintained that "Miss Clara never sees dust. Why should she? That is my department, not hers. Her department is addematics and high ideals." Clara Bacon's interest in her students extended beyond their education at Goucher, and there are numerous stories about her generosity in giving financial assistance to deserving students. Miss Bacon retired in 1934. Though with someone as active as Clara Bacon and as well loved, it is not possible to mention everything, the memorial article

in the 1948 Quarterly summarized her activities as follows:

. . . She was at one time President of the Maryland-DC-Virginia Section of the Mathematical Association of America, and served for many years on the College Entrance Examination Board. She was a devoted church worker; she joined and actively supported various organizations for civic and social betterment. This she did from conviction, but never was duty more palatable, for she loved to know people and to be with them. She was a successful President of the College Club, the Baltimore branch of the A.A.U.W. A fellow member remarks: 'Under her presidency we worked as we had never worked before, not because she drove us but because we love her.'

Among the mathematics majors of the first twenty years who went on to teach was Ada Beall Norment of the class of 1909 who taught science first at William Penn High School in Philadelphia and later at Eastern High School in Baltimore. She served on the Board of Directors of the Goucher Alumnae Association and the Board of Directors of the Middle Atlantic States Science Teachers, and was an active member of the Emmanuel Protestant Episcopal Church. Others who taught in colleges and universities were Lena J. Hawks (1900), who taught at Martha Washington, Ward Belmont, and the University of Chicago and was professor of mathematics and dean of instruction at Georgia State Women's College; Mary Scarborough, who had already graduated from the Maryland State Normal

School when she entered Goucher, returned to the State Teacher's College after receiving a master's degree from the Teacher's College of Columbia University and became head of the mathematics department. Bessie Irving Miller of the class of 1907 received a fellowship at the University of Chicago and later received her Ph.D. from The Johns Hopkins University before becoming a professor of mathematics at Rockford College in Illinois where she also did research, read and published papers and, through a course and book called "Romance in Science," encouraged her students to discover the pleasures of objective, scientific reading. In all, hers was an outstanding career, especially considering that mathematics was her second choice of interest, chosen when she realized that poor eyesight would make it impossible for her to become a surgeon; problems with her eyes were a constant worry throughout her life. For relaxation she played the violin and attended movies, theater productions and the symphony. Bessie Miller devoted herself to scholarship and the well-being of her students. Amy Hewes (1897) taught at Mount Holyoke College after doing graduate work at the University of Chicago and the University of Berlin. On several extended leaves from her teaching she was Executive Secretary

organizing the Massachusetts Minimum Wage Committee for two years, during the time from 1917 to 1919 she acted as a special supervisor reporting on women employed by the United States arsenals and quartermaster depots for the ordnance department. She worked with the Bryn Mawr Summer School for Industrial Workers and was a member of its Council. At Mount Holyoke, Miss Hewes, according to the Quarterly, "practically created the department of economics. She alone held the chair of economics there." From 1901 to 1906 she was a Goucher Alumnae Trustee.

Representative of the many Goucher graduates who went on to become prominent, responsible members of their communities is Neel Zouck Stanwood who came to Goucher from Girls Latin School, as had many others, including Lena Hawks and Bessie Miller. Though she did also teach mathematics for a short time in Pennsylvania at the West Chester Academy, Mrs. Stanwood distinguished herself particularly as a leader of the community and by her continuing assistance with Goucher projects. As a member of the Maryland Society of the Daughters of the American Revolution, Mrs. Stanwood served as recording secretary and later as Regent of the General Smallwood Chapter, and also was an officer of the state society, serving as recording

secretary, as registrar and as chairman of the D.A.R. Chapter House. She was also active in responsible positions in the Woman's Club of Roland Park and in the Red Cross during both World Wars.

There were five Doetsch sisters who graduated from Goucher in the period 1903-1921; two were mathematics majors. Emilie A. Doetsch (1903) went to law school and was, in 1906, the second woman to pass the Maryland State Bar. As there was little demand for women lawyers, she worked as a correspondent for the Baltimore News and became active in the women's suffrage movement and continued, after the Suffrage Amendment passed, to work for women's rights and encourage women to use their newly granted privileges. In 1932, while advocating that girls be allowed to attend Baltimore Polytechnic Institute, she said, "Girls should have every advantage in every way in education that boys have. When authorities try to keep girls from getting a technical education on the grounds that it is such dirty work for girls to get under a car or work around machinery, they forget how dirty it is for women to scrub floors, polish furniture, and clean kitchen stoves." Miss Doetsch "was the first woman to hold a high office of any kind in municipal affairs when she became

Assistant City Solicitor under Mayor Broening from 1928 to 1931. She was the first woman to run for office in Baltimore when she stood for a place on the Council from the Fifth District." Her continuing interest in Goucher is signified by the fact that she was for one term a member of the Board of Directors of the Alumnae Association. Among her many affiliations can also be listed the Phi Delta Delta, an international women's legal fraternity, and the League of Women Voters.

Emilie's sister, Elsa, also majored in mathematics at Goucher. Elsa Doetsch and Florence Hooper, both of the class of 1907, were the first women in Maryland to become certified public accountants and be invited to join the American Institute of Accountants of the Maryland Association of Certified Public Accountants. Florence Hooper became the Treasurer of the Women's Foreign Missionary Society of the Methodist Episcopal Church, handling the grants to their missions all over the world, and setting up a pension fund for retired missionaries. She wrote several articles for the Methodist Church's national publication, "World Outlook," and gave frequent lectures. Elsa Doetsch worked for Mayor Alcaeus Wood's office and later was an associate member of Wooden and Benson. After 1930 she set up independent practice.

It would be impossible to leave the comments on Goucher's first two decades of graduates without telling about Olive Wetzel Dennis of the class of 1908, who came to Goucher on a four year scholarship, graduated Phi Beta Kappa, and went on a fellowship to earn her Master's degree in mathematics and astronomy from Columbia University. After teaching in a Washington, D. C. high school for ten years and taking summer courses at Harvard and the University of Wisconsin in mathematics and civil engineering, she completed the theoretical and field work in civil engineering in one year at Cornell Engineering School to become, in 1920, the second woman in the history of the school to receive a C.E. degree. Working for the Baltimore and Ohio Railway Company, first as a draftsman, and then as an "official of the road" to investigate how passengers could be made more comfortable, Olive Dennis' innovations varied from changing the design of the day and night coaches to designing the well known B & O Blue China and, from the installation of individually operated ventilators of a design she created and patented, to the preparation of a color brochure on the china used on the trains. She also organized and was, for many years, President of the B & O Women's Music Club, and was the first woman member of the

American Railway Engineering Association. In the midst of her busy work, Miss Dennis still found time to talk to school children about the practical value of mathematics, to serve as a Goucher Alumnae Trustee, Director of the Flag House, and President of the Puzzler's League.

B. A PERIOD OF DEVELOPMENT, 1910-1924

Twenty years after its founding, Goucher became more involved in regulations of State Boards of Education. It was necessary to have a curriculum acceptable to those bodies and Dean Lord and Mathematics Professor Clara Bacon were appointed by the Board of Control to study the problem. In 1915-16 the College adopted the Missouri grading system which had been proposed during the first year of Dr. Van Meter's term as Dean.

Joining the faculty during this period were Dr. Florence P. Lewis (1908-1947), Joseph E. Rowe (1910-1911), and Agnes Bacon (1912). Agnes Bacon was the sister of Clara Latimer Bacon.

Florence P. Lewis was a woman of great intellect and spirit who transmitted her joy of life and learning to her students. She received a B.A. degree in classics and an M.A. degree in philosophy from the University of Texas, and an



M.A. degree in mathematics from Radcliffe College. Continuing her study of mathematics, she became one of the first women to receive a Ph.D. from The Johns Hopkins University. Dr. Lewis taught both mathematics and astronomy at Goucher, serving as departmental chairman from 1931 to 1943. Dr. Lewis was an active member of the American Association of University Professors and served as its Treasurer for nineteen years. In addition, she was a member of the American Mathematical Society and became, in 1920, the first woman elected to its Council in twenty years. Dr. Lewis' delight in learning and teaching are expressed in this verse she wrote:

I talked of stars, you showed me stars.  
Mine was the greater prize;  
I told a tale of wonder--Lo  
Your wondering starry eyes!

Curriculum requirements have always varied from year to year; this period was no exception. In 1912 there was no mathematics requirement for graduation, yet many courses were offered: (1) Solid geometry, (2) Plane trigonometry, (3) Algebra (no math required), (4) Analytic geometry, (5) Differential and integral calculus, (6) Analytic geometry and calculus of several variables, (7) Projective geometry, (8) Differential equations, (9) Modern algebra, and

(10) Methods of solution and modeling. Requirements for a mathematics major were courses 4, 5 and 6 or 4, 5, 7 and 9. At that time also, the Mathematics Library was in existence. In 1915-1916, students were required to do one-fourth of their college work in their major department.

In 1916-17, freshmen were expected to take plane trigonometry and college algebra. Then students were offered differential and integral calculus, advanced analytic geometry, advanced calculus (infinite series), theory of probability, pure projective geometry, modern higher algebra (invariants and covariants), differential equations, history of mathematics, teaching of mathematics, and two astronomy courses. Students transferring from junior colleges could get credit for solid geometry, plane geometry, college algebra and introduction to analytic geometry, plane analytic geometry, and differential and integral calculus.

In the 1921-22 curriculum, recommended courses for mathematics majors were much the same as earlier with the addition of plane analytical geometry and the deletion of teaching of mathematics and two astronomy courses.

Graduates of Goucher who majored in mathematics often went on to other fields. Constance Mayadas (Premnath) Dass,

Class of 1911, came to Goucher from India. She was elected to the Phi Beta Kappa Society. In 1938 she received the Dean Van Meter Alumnae Fellowship to the Columbia University Teacher's College, where after two years she received her M.A. degree. She studied Comparative Education, American Education, and the teaching of English, then returned to India to join the faculty of Goucher's "sister college in the far east," Isabella Thoburn College in Lucknow, India. She was later elected President of the college. On October 14, 1938 she received an honorary degree from Goucher in recognition of her distinguished career. Flora Dobler Sutton, who graduated from Goucher in 1912 and received a Ph.D. from Johns Hopkins University in 1921, became a statistician for a stock brokerage firm which was the predecessor of Legg, Mason & Company.

Among the alumnae during the period from 1910 to 1924 is an outstanding teacher, Teresa Cohen. Dr. Cohen is a native of Baltimore, one of three sisters who graduated from Goucher. She attended Friends School, got her B.A. from Goucher in 1912, M.A. from The Johns Hopkins University in 1915, and Ph.D. from Hopkins in 1918. In 1920 she began as an instructor at Penn State, the first woman on the mathematics

faculty and the only one for three and a half years. Dr. Cohen has been teaching at Penn State ever since, although she officially retired in 1961. From 1961 until the present she has been an unpaid tutor, with regular office hours from 9:30 a.m. to 4:30 p.m. Students go to her for help every day and she is particularly busy before exams. Dr. Cohen's two teaching principles, as stated in "The Penn Stater" in January-February, 1979, are "When you introduce something new, try to connect it with something that they've already had. And, if you're not sure they remember something, assume they don't." Penn State held a special day in her honor in November, 1978, which Professor Bernstein attended.

Two sisters who moved on to departmental chairmanships were Helen Barton, 1913, and Vola Price Barton, 1915. Helen Barton was Professor of Mathematics at the Woman's College of the University of North Carolina, where the Faculty Lounge has been named for her. Vola Price Barton was Professor of Physics at Goucher from 1931 to 1958. Dr. Anna M. Mullikin, Class of 1915, was the first woman Ph.D. student of R. L. Moore, the famous topologist, whom she followed from the University of Pennsylvania to the University of Texas. She taught mathematics in Germantown High School of Philadelphia



W.C.L. Gorton  
1888-1894

F  
A  
C  
U  
L  
T  
Y



William H. Maltbie  
1895-1909



Clara L. Bacon  
1897-1934



Florence P. Lewis  
1908-1947



Marion M. Torrey  
1924-1959



Helen Dodson Prince  
1927  
1945-1950



Mary-Elizabeth Hamstrom  
1952-1961



Dorothy L. Bernstein  
1959-1979



Elaine Koppelman  
1961-



Geraldine A. Coon  
1964-1980





Florence Hooper  
1907

A  
L  
U  
M  
N  
A  
E



Bessie Irving Miller  
1907



Olive Wetzel Dennis  
1908



Anna Heubeck Knipp  
1892



Constance Mayadas  
1911



Beatrice Aitchison  
1928



1947

## MATH CLUB



1951



1961



1965



for many years and received an alumnae achievement citation from Goucher in 1954. Also receiving an alumnae citation at the same time was Marguerite Lehr (1919) who received her Ph.D. in Mathematics from Bryn Mawr in 1925, where she taught mathematics from 1924 until her recent retirement. An excellent dinner speaker, Dr. Lehr gave an address at the Symposium in Physical Science at the Dedication of Hoffberger Science Building. From October, 1953 to January, 1954 Marguerite Lehr had a television show from 11:30 a.m. to noon entitled "Invitation to Mathematics," which was broadcast by WFI6 Channel 6 in Philadelphia as part of the University of the Air. Among the topics covered on these programs were Regular Patterns and Symmetry, Products and Primes, Questions the Natural Numbers Cannot Answer, and On Measures of "How Likely?".

#### C. THE MIDDLE YEARS, 1925-1958

In 1924, an outstanding instructor, gifted with patience and imagination, joined the Goucher faculty. Dr. Marian Torrey received her A.B. and A.M. from Brown University and a Ph.D. from Cornell. In addition to teaching, she was assistant to the Dean from 1938 to 1943 and head of Baldwin House from 1942 to 1959. Dr. Torrey was Chairman of the Mathematics Department from 1943 to 1957, retiring in 1959.

The annual banquet of the Goucher Mathematics Club is called the Torrey Dinner in her honor; also named in her honor is the prize for outstanding scholarship in mathematics awarded to a graduating senior and announced at the dinner.

Helen Walter Dodson (Mrs. Edmund L. Prince), class of 1927, received her Ph.D. from the University of Michigan in 1934. She taught astronomy at Wellesley College, worked as a staff member in the Radiation Laboratory at the Massachusetts Institute of Technology during World War II, and taught astronomy at Goucher 1945-50, at which time astronomy was included in the mathematics department. She went to the University of Michigan in 1949, serving as professor of astronomy and associate director of the McMath-Hulbert Observatory until her recent retirement. In 1951 Dr. Dodson was elected to the Goucher Board of Trustees. An astronomer of world reknown, she received an honorary doctor of science degree from Goucher in 1952; and an alumnae achievement citation in 1954. She has been distinguished at Goucher as student, teacher, and alumna trustee.

For ten years Goucher was fortunate in having Mary Elizabeth Hamstrom on the mathematics faculty. Dr. Hamstrom was a graduate of the University of Pennsylvania and studied topology under R. L. Moore, who had directed the work of

Anna Mullikin thirty years earlier at the University of Texas. Upon receiving her Ph.D. in 1952, she came to Goucher as assistant professor and served as department chairman from 1957 to 1959. She was a member of the Institute for Advanced Study in Princeton during 1956-57. In 1961 she left Goucher to become Professor of Mathematics at the University of Illinois where she has continued her research in topology.

During these years the curriculum continued to change with the times and the faculty. Changes were also needed to adapt to high school curricula. Astronomy was part of the Mathematics Department until the mid-1950's when it moved to Physics. The track approach was more or less explicit throughout, though it only had three components until the 1970's. They were (1) pure math, (2) applied math, and (3) secondary school teaching. Until the 1950's the major was composed of about seven required courses in mathematics, plus additional courses in mathematics or in other departments, e.g., philosophy, education, history, foreign languages. Later the courses in other disciplines were restricted, and eventually eliminated entirely.

In 1936-37, "Projective geometry" became "Modern geometry." An elementary course in statistics was added in 1943-44, and the three advanced courses were reduced to one. As early as 1945-46 mathematics courses included labs which showed some of the practical application of the theory learned in class. Emphasis was on the use of calculating aids, e.g., Monroe calculators and slide rules. A generous gift to the Gorton Memorial Fund by Dr. Bacon permitted the department to purchase a Monroe calculating machine in 1932. Two courses for non-mathematicians were added in 1948: "Language and Concepts of Mathematics" and "Elementary Mathematical Techniques."

Dr. Florence P. Lewis started Goucher students stargazing. In the days of World War I, students studied astronomy at night from the roof of Alfheim with the aid of a portable telescope. A red-letter day for Goucher was the dedication day in 1953, of the Florence Lewis Telescope, installed in a dome on the Hoffberger Science Building. The Lewis telescope was made possible by funds raised by Dr. Lewis' former students.

Leah Seidman Shaffer was a mathematics major who was graduated Phi Beta Kappa from Goucher in 1926. Her minor

fields, physiology and bacteriology, led her to part-time study at The Johns Hopkins School of Hygiene and Public Health. She received a doctor of science degree in bacteriology, later moved to Boston, where she had a teaching and research position at Harvard. After marrying Dr. Morris Shaffer, a microbiologist, she was involved in teaching and research in her husband's department at Tulane University.

Beatrice Aitchison, 1928, distinguished herself as one of the country's leading transportation economists.

. . . she moved rapidly from the position of a junior statistician to principal transport economist of the Interstate Commerce Commission, and from there to her present position as Director of the Transport Economics Division, Office of Transportation, in the Department of Commerce. Miss Aitchison has had a tremendous responsibility in dealing with transportation requirements of the mobilization effort. Her long-time task is to guide the planning of the Commerce Department's program to coordinate and improve Government aids to land, sea and air transportation, which runs into hundred of millions of dollars annually.

(Alumnae Quarterly, Summer, '52)

Miss Aitchison graduated Phi Beta Kappa at the age of 19. She received her M.A. and Ph.D. in mathematics from Hopkins, then went to the University of Oregon for an M.A. in economics. Look Magazine called Dr. Aitchison "Miss Mathematics."

She has had an interesting and varied career, meanwhile maintaining an active interest in Goucher; she was twice President of the Goucher Club of Washington, and Alumnae Trustee from 1969- 1972. Beatrice Aitchison was the recipient of an Alumnae Achievement Citation from Goucher in 1954 and an honorary Doctor of Science in 1979; she also received the First Annual Federal Woman's Award, and a Career Service Award from the National Civil Service League.

Ruth Hedeman received her A.B. from Goucher College in 1931, her M.A. in mathematics from Duke University in 1936. She was on the Goucher faculty in 1934. She taught remedial work in elementary mathematics for freshmen at Goucher, and later taught in Baltimore City schools. In 1943 she joined the United States Navy where, as a Lt. Senior Grade, she worked as an aerological officer. Upon release from the Navy, Miss Hedeman did graduate work in astronomy at the University of Michigan. Subsequently she worked as a research assistant in solar research at the McMath-Hulbert Observatory of the University of Michigan and taught astronomy there. Miss Hedeman also served on Goucher's Alumnae Council.

Maryland Young (Mrs. E. H. Pennell) graduated from Goucher in 1929 and received a Master of Science in Hygiene

and Public Health in 1933. She worked for the Department of Agriculture from 1936-1943 and thereafter as a statistician for the U. S. Public Health Service where she became Health Manpower Statistics Branch Chief of the National Center for Health Statistics. Among the organizations of which Mrs. Pennell became a member are the American Statistical Association and the Association of Schools of Allied Health Professions; she is also a Fellow in the American Public Health Association.

Helen May Hilmer, (Mrs. Christian Newmann), 1941, received her A.B. in mathematics and physics from Goucher, followed by electrical engineering courses at Union College. Mrs. Newmann taught mathematics and physics and was employed by Martin-Marietta as a control system design specialist, working on such projects as the Titan II Gemini launch vehicle and the Mace and Matador missiles. At Martin-Marietta, Mrs. Newmann was one of nineteen women among 2300; of those nineteen only Mrs. Newmann and one other woman were classified as engineers. Since 1967 Mrs. Newmann has been employed at Goddard Space Center as a senior control system designer. She leads a team of scientists furnishing information used to guide a satellite through delicate and precise maneuvers.

Vivian O'Brien, 1945, a Baltimore native, received an M.A. from Hopkins in 1950, and M.S. in 1954, and a Ph.D. in aeronautics in 1960. In the course of her career, she has been assistant to Dr. Dodson in astronomy classes (1946), aerodynamicist at Glenn L. Martin (1945-47), research assistant in theoretical aerodynamical development in The Johns Hopkins Aeronautics Department (1947-55), and, since 1955, physicist at the Hopkins Applied Physics Lab. Dr. O'Brien has become well-known in the field of fluid dynamics. In 1967-68 she was the recipient of a Parsons Fellowship at The Johns Hopkins University.

Ann Sewall Merriam, 1945, is a former mathematics major who has had two professions. She was a teacher of mathematics, general science, and biophysics, teaching at the University of Maryland, the Brearly School in New York, the Cathedral School of St. Mary's in Garden City, and the Bryn Mawr School in Baltimore from 1950 to 1957. In 1957 Miss Merriam joined RCA as an engineer to do systems and logic design for electronic data processing. She holds a patent on asynchronous binary counter circuits. In 1959 Miss Merriam received her M.A. from Bryn Mawr.

Elsie Louise Goedeke (Mrs. Philip E. Shutt), 1948,



received an M.A. from Radcliffe in 1952, and then went on to L'Universite de Nancy in 1952-53, on a Fulbright Scholarship. In 1954 she went to work as an analyst for Datamatic Corporation in Newton, Mass., and later worked for the New England Computer Company in Boston until her first child was born. In order to stay home, she became a freelance consultant and programmer. This grew into a larger idea of getting other mothers with similar experience and a desire for part-time work at home interested. Her own company, Computations, Inc., started in 1958, was a success from the beginning and did computer programming on contract for companies like Minneapolis-Honeywell, Raytheon, St. Regis Paper Company, and departments of Harvard and the University of Rochester. She employed several women part-time in her own company and still has time to participate in community activities.

#### D. THE LAST TWENTY YEARS, 1959-1979

As the needs of the Department of Mathematics grew and changed, courses were added and dropped. In general, the more advanced courses have been added and those which were more basic and had come to be available in high schools have been discontinued. Instrumental in making these changes has been Dorothy Lewis Bernstein, who joined the department in

1959. Miss Bernstein was graduated Summa cum Laude and Phi Beta Kappa from the University of Wisconsin in 1934, receiving both her B.A. and M.A. degrees simultaneously, and then went on to earn her Ph.D. from Brown University, writing her thesis on the Double Laplace Integral. She has taught at Mount Holyoke College, the University of Wisconsin, and the University of Rochester, where she was acting chairman for three years, and has been a visiting professor at Brown University, the University of California, and the University of Tennessee. She was a member of the Institute for Advanced Study in Princeton during 1950-51. Dr. Bernstein has served for twelve years as chairman of the mathematics department at Goucher. Through the years Dr. Bernstein has been active in the Mathematical Association of America and is now its first woman President.

The comprehensive reorganization of the mathematics curriculum undertaken by Professors Hamstrom and Bernstein in 1960 and 1961 included introduction of courses in theory of probability, topology, complex variable, and numerical analysis, soon to become numerical analysis and computing, and a senior seminar. At about the same time solid geometry and then college algebra were dropped; analytic geometry was

combined with differential and integral calculus. Qualified freshmen were permitted to exempt trigonometry. For those with interest in mathematics, but lacking the background or inclination to take the analytic geometry-calculus courses, an elementary statistics course was introduced and the course on language and concepts of mathematics which had been introduced in 1948 was opened to freshmen.

Also changing the orientation and offerings of the mathematics department was the purchase in 1961, under a grant from the National Science Foundation, of an I.B.M. 1620 computer. The credit for this foresighted purchase, which made Goucher one of the first women's colleges to install a computer, also goes to Dr. Bernstein, who served as Director of the Computer Center during the period 1961-67. The change in the college schedule from the trimester to the semester and January Term has made possible other pioneering projects of the mathematics department, including the computer workshops and the internship program, by which majors have the opportunity to work with local industries and research establishments to apply their mathematical training to real-life problems.

In the late sixties, under an NSF Grant with Dr. Bernstein

as Director, the I.B.M. 1620 was replaced by an I.B.M. 1130 with more memory capacity. The range of computer capabilities was enhanced in 1976 by the purchase of terminals, two Telrays, two Decwriters, and a graphics terminal, which permit access to the large computer at The Johns Hopkins University via an ordinary telephone connection. Though she is not on the faculty, students using the computer since 1970 have all done so with the patient support of M. Patricia Powers who has been Director of the Computer Center since that time.

Goucher's mathematics department has also cooperated with local high schools in arranging for their students and teachers to use Goucher's computer. An NSF Summer Institute in 1969, the purpose of which was to introduce the educational use of computers into the Baltimore County High Schools, was attended by one teacher from each high school in the county. As part of this grant, for the next 2 years, St. Paul's School for Girls, and several Baltimore County public schools used the Goucher computer. Students who participated in this program and had never previously worked with computers were able to be right there watching the computer, an experience which they found to be both exciting and enlightening. Many of the

participating high schools, all from Baltimore County, introduced the computer into their mathematics programs as a result of this summer institute.

The appointment of Geraldine A. Coon to the faculty in 1964 was timely in view of the great interest in applications and computing which developed in the seventies. Dr. Coon graduated Phi Beta Kappa with high honors and departmental honors in mathematics, from Connecticut College for Women in 1935, received her M.S. from Brown University in 1937 and her Ph.D. from the University of Rochester in 1950. She began her career as Instructor in Shop Mathematics at the Scovill Manufacturing Company and then served as Research Mathematician for the Taylor Instruments Companies from 1944 to 1958 working largely on the theory of automatic process control. Dr. Coon taught at the University of Rochester and the University of Connecticut before coming to Goucher, where she has been Professor since 1964, and served as chairman of the department for five years. She has also been a member of the Courant Institute and a visiting professor at Brown. Her industrial experience led her to develop the applied mathematics program at Goucher and to work enthusiastically in extending the computer education of mathematics students. Both Professors Coon and Bernstein who will be retiring this

summer received a joint award for distinguished service to the College. During the academic year 1979-1980, Dr. Coon will be remaining at Goucher as Visiting Professor.

A special dimension was added to the department in 1961 when Elaine Koppelman joined the faculty. Dr. Koppelman graduated Summa cum Laude with honors in mathematics from Brooklyn College in 1957, received an M.A. in mathematics from Yale in 1959, and her Ph.D. in the history of science from The Johns Hopkins University in 1969. As the title of her thesis, "Calculus of Operations: French Influence on British Mathematics in the First Half of the Nineteenth Century," reveals, her special interest is the history of mathematics which she teaches at Goucher. She received a post-doctoral fellowship at the Smithsonian in 1973-74, and has spent this past year doing post-doctoral work at Hopkins.

Martha J. Siegal, who is now Professor of Mathematics at Towson State University, taught at Goucher from September 1966 until June 1971. She had received her B.A. in 1960 from Russell Sage College and her M.A. in 1963 from the University of Rochester. While at Goucher teaching a full load of courses, she completed work on her Ph.D., which she received from the University of Rochester in 1969.

The "track" approach to the curriculum, which had been dropped in the early 1960's, was explicitly reinstituted in 1974 with the four tracks of I. Pure Mathematics, II. Applied Mathematics, III. Computer Science, and IV. Secondary School Teaching. At this time the requirements for a mathematics major are nine or ten courses at the two- and three-hundred level which must include Fundamentals of Real Analysis (301) and Elements of Abstract Algebra (321). A senior thesis may take place of two courses if the department gives its permission.

Three faculty members who have joined the department since 1975 are Ingrid Y. Bucher, Robert Lewand, and Cecilia Brook. Ingrid Bucher received her Diplom Physiker from the University of Munich and her Dr. rer. nat. from the University of Göttingen in 1958. Following this, she taught and did research in physics there and then held a similar position at The Bartol Research Foundation, later returning as a post-doctoral fellow to do research at Göttingen. Before joining the mathematics faculty, Dr. Bucher was an assistant and then associate professor in Goucher's physics department from 1966-1977. She is now pursuing graduate work at the University of Maryland in computer science. Robert Lewand, whose specialty is algebra, received his B.S.

from the University of Dayton in 1966, and his Ph.D. from the University of Virginia. Before coming to Goucher in 1977, he taught at Windham College in Vermont. Cecilia Brook is a former Goucher mathematics major, class of 1968, who has come back to Goucher to teach during the 1978-79 academic year before going to Northern Illinois University. She earned her M.A. at Wesleyan University in 1969, and her Ph.D. at the University of North Carolina, Chapel Hill, in 1978. She has also taught mathematics at Friendship Junior College and Winthrop College, Rock Hill, South Carolina.

In recent years the mathematics alumnae have gone in so many different directions that it is difficult to trace them and decide whom to mention. As in previous years, a number have become teachers. Among those teaching mathematics in colleges are Judith Callaghan Wason of the class of 1969, who received her Ph.D. from Columbia University in 1973, and is teaching at Wellesley College, and Gail Kaplan (1972) who is teaching at Southampton College. Mary Christine Boyer (Mrs. Constantine Karatis) of the class of 1961, received her Ph.D. from M.I.T. in city planning, which she then taught at the postgraduate level at Harvard School of Design. Mina Risan Wender, with an M.A.T. from University of Chicago, is teaching



mathematics at McDonogh School. Also in the Baltimore area are Marian Randall, class of 1976, who is teaching in Baltimore City, and Edith Allers Windsor, class of 1971, who is teaching at Roland Park Country School.

Work with computers has opened up a new field which has attracted Goucher mathematics alumnae. Suellen Eslinger of the class of 1965, is working at the Applied Physics Lab. as a senior consulting analyst. Nancy Goldberg MacDonald, who in 1978 was the first Goucher alumna to receive a Ph.D. in computer science from the University of California at Berkeley, is now teaching at Florida State. Representative of the other computer-related occupations of recent alumnae are Martha Credle Kolar, systems analyst for Aetna Life and Casualty Company; G. Perry Hudkins, a self-employed programmer; Rosemary Shearer Wieder, who has received an M.S. in computer science from The Johns Hopkins University, an associate engineer with Westinghouse Corporation. Those who worked at IBM for their internships this year bring word that Dorothy Lidiak, who was working as a systems engineer, is now a Marketing Representative. Pat Ryan, class of 1977, is with the University of Maryland Health Services Computer Center.

The actuarial profession has attracted a number of Goucher graduates. Both Gail Philipp Schaeffer, class of 1969, and Jane Hamrick, class of 1974, are now Fellows in the Society of Actuaries. Gail Schaeffer is working for the John Hancock Life Insurance Company in Boston, and Jane Hamrick is with Monumental Life Insurance Company. Ellen Ostrowski Schultz (1971), who was working with U.S.F. & G., is now a Fellow in the Casualty Actuarial Society. Working in other mathematics-related fields are Ruth Askin Seif (1967), who is a mathematical statistician for Social Security, Jan Friskey (1974), who is a mathematician data analyst, aerospace technician at NASA. Helen Reed (1977), who is also at NASA, is working at the Langley Research Center. Deborah Ann Richards (Mrs. Berman), 1958, worked as a research assistant at the Laboratory of Astrophysics at Johns Hopkins University and has been active with the Goucher Alumnae Fund.

Not all mathematics majors, however, have gone on to strictly mathematical employments. Examples of this group of alumnae are Sue Ekdahl (1973), who is with C & P Telephone Company; Joan Maling (1968), who has a Ph.D. from M.I.T. in linguistics and is teaching at Brandeis University; Evelyn Weiner (1971), who received an M.D. degree from the

Washington University School of Medicine; Kyle Precht1 (1972), who is a leasing officer of the First National Bank of Maryland, and is now attending the University of Baltimore Law School; Cheri Wyron Levin (1973), who has the degree of Doctor of Jurisprudence from the University of Virginia Law School; and Margaret Fisher (1975), who has a Master's degree in business administration from Wharton School. Helen Berwin Ondis (1958), worked for the Bettis Atomic Power Division of Westinghouse as a programmer before marriage, and since then has been active in volunteer work; at one time she was learning Braille in preparation for work transcribing textbooks.

A committee of outside examiners was hired by the College in the spring of 1977 to evaluate the Mathematics Department. This committee looked into the curriculum, the staff, and the plans of the department and submitted a report containing its findings and making recommendations. Summarizing its impressions in the introduction to their report, the committee said:

The words that best characterize the program offered in mathematics are 'intelligent' and 'realistic'. This program was laid out with great foresight and perception about the changing role of mathematics

in our society. The great emphasis given to computing and applied mathematics and the felicitous manner in which these have been thoroughly integrated in the whole corpus of mathematical offerings have created a highly meaningful Bachelor's degree in mathematics.

The mathematics department is still, and must always be alert to the altering needs and opportunities of its students and the community. The educational opportunities for women have changed drastically since 1888. Continuing modifications in the mathematics curriculum in the past have reflected these changes, and sometimes anticipated them. The first ninety-one years of mathematics at Goucher can serve as a standard for the future.

TORREY PRIZE WINNERS

- 1965 Suellen Eslinger
- 1966 Ann Koski Boyle
- 1967 Barbara Fader Rasbach
- 1968 Cynthia Anne Bennett  
Joan Mathilde Maling
- 1969 Judith Callaghan Wason
- 1971 Evelyn Sarah Weiner
- 1972 Gail Annette Kaplan
- 1974 Jan Lawrence Friskey  
Joan Schuppert Campbell
- 1975 Suzanne Sands Duchon
- 1976 Susan Carol Amos
- 1977 Helen Louise Reed
- 1978 Sarah Marie Davis
- 1979 Sharon Ann Green

PHI BETA KAPPA

- 1897 Margaret Jeanette Brownell  
Amy Hewes
- 1900 Emma Bass Miller  
Bertha May Clark
- 1904 Jessie Yereance Cann
- 1905 Elizabeth Smith Thomas
- 1906 Josephine Bartholomew Ingalls
- 1907 Florence Hooper  
Bessie Irving Miller
- 1908 Olive Wetzel Dennis
- 1909 Amelia Hermina Fritz  
Katharine Hooper
- 1910 Blanche S. Lamberson
- 1911 Merle Strother Bateman  
Constance Mayadas Dass
- 1912 Teresa Cohen
- 1913 Martha Helen Barton  
Alice Du Moulin  
Elsa Caroline Haupt
- 1915 Vola P. Barton  
Anna M. Mullikin
- 1916 Sarah Margaret Peyton
- 1918 Anna Marie Whelan
- 1919 Margaret C. Amig  
A. Marguerite Lehr

1920 Mildred Watkins Grafflin

1921 Virginia Gallup Ritter

1922 Dorothy Biscoe McCord  
Eva Lazarus Thompson

1923 Gertrude Sandlass Lubke

1924 Mildred Waters Dean

1926 Helen Rebele Gibson  
Anna Grimm Braxton  
Leah Seidman Shaffer  
Charlotte Spence Clark

1927 Helen Dodson Prince

1928 Beatrice Aitchison  
Elinor Lewis Saunders

1929 Dorothy May Taylor  
Maryland Young Pennell

1934 Margaret Claybaugh Hipple  
Catherine Tracey Norling

1935 Martha Fields Muhly

1936 Anne Kell Carroll

1940 Irene Lewis Russakoff  
Harriet Mylander Maling

1942 Rheabel Mendelsohn Jaffe

1943 Lilly Berdinsky Warren

1944 Phyllis Kouwenhoven Pullen

1945 Frieda Faiman Eisenberg  
Rhoda Ginsberg Hecht

1946 Joan Robinson Westlake

1948 Elsie Goedeke Shutt  
Nannielou Reier Dieter

1950 Idahlia Siegel Rogers  
Shirley Thiell Hoeflich

1951 Emilie Leonards Cassard

1953 Esther Sprenkel Segel

1955 Margaretta Barten Hommel

1956 Nancy Lineken Hagelgans

1958 Deborah Richards Berman

1961 Dagmar Christiensen Noll  
Inez Neu Payne

1962 Carol Friedman Millman  
Elaine Ethel Yarow

1964 Mary Buchner McDonald

1965 Carol Bothwell Mannon  
Suellen Eslinger

1966 Ann Koski Boyle

1967 Barbara Fader Rasbach  
Danielle Garrick Lockhead

1968 Cynthia Ann Bennett  
Cecelia Hartley Brook  
Joan Mathilde Maling  
Sandra Ostrofsky Gordon

1969 Judith Callaghan Wason  
Karen Leary Dorsey



1970 Susan Gottesman Rabkin  
1971 Evelyn Sarah Weiner  
1972 Gail Annette Kaplan  
1973 Susan Carol Ekdahl  
1974 Joan Schuppert Campbell  
1975 Suzanne Sands Duchon  
Rosemary Shearer Weider  
1976 Rochelle Adler  
Susan Carol Amos  
1977 Eleanora Bertacchi  
Mary Valerie Blier  
Helen Louise Reed  
1978 Sarah Maree Davis  
Karin A. L. McCloskey  
Jeanne Webb Mcseley  
1979 Sharon Ann Green

