1983

Mathematics

Woodrow McBride

University of North Dakota

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MATHEMATICS
By Woodrow McBride
ACKNOWLEDGEMENTS

We wish to thank J. Douglas Leith (who provided valuable historical information for the years 1920-1936), to Mrs. Raymond Staley, Mrs. Sewell Mason, Mrs. R. B. Witmer and Mrs. Philip Rognlie for their recollections, and to my colleagues for their help and suggestions.

We also want to acknowledge the help received from the Office of the Registrar in providing access to their records, and to Dan Rylance and his staff in the Fritz Library Archives.

Thanks must go to our math secretary, Dulcie Hill, who typed the rough draft of this history, and to her predecessor, Phyllis Hellem, who kept such good departmental records for the last 15 years.

These acknowledgements would not be complete if they did not include a "thank you" to the writer's wife, Ann, who read and reread the rough draft and came up with helpful suggestions.
Mathematics was one of the first subjects taught at the University. Henry Montgomery, Professor of Natural Sciences (1884-85) was the first math teacher at UND. He was succeeded by Horace B. Woodworth, Professor of Mathematics, Physics and Astronomy (1885-88). Woodworth also was Principal of the "Normal School." At that time the requirements for the B.A. degree in Math, Physics and Astronomy were: freshman algebra, plane and solid geometry, plane trigonometry, analytic geometry, mechanics and physics, and astronomy.

In 1888, the University acquired its first real mathematician when Ludovic Estes (1888-98) was appointed Professor of Mathematics, Physics and Astronomy. He was born March 4, 1849, in Richmond, Indiana, attended Earlham Academy of which his father was president, did his undergraduate work at Haverford College, a leading Quaker educational institution, and received his PhD from the University of Michigan. When he came to UND he was one of only two PhD's on the entire University faculty. By that time the requirements for a degree in math, physics and astronomy were: algebra, geometry, plane and spherical trigonometry, higher algebra, surveying, analytic geometry, calculus and a course called "higher mathematics". First mention of the Department of Mathematics, Physics and Astronomy appears in the University catalog in 1890-91.

Professor Estes was held in high esteem by his students and colleagues. This is evident when one reads his obituary from the March 12, 1898, issue of the Grand Forks Herald. The article is unstinting in its praise:

"The University was plunged into the keenest and deepest sorrow yesterday morning by the death of her universally beloved Professor Ludovic Estes at his home the night before. Notwithstanding the great anxiety felt for several days before the last by his most intimate associates, the student body and the greater number of friends were hardly aware of his serious condition until the end. Thus the sudden unexpected shock fell with crushing bitterness upon the most of his acquaintances and especially was this true of the young people of the University, almost every one of whom either has been or is at present a member of some of his classes. All the bubbling effervescence of youthful vigor and life was hushed in the hour the sad news came, the first of the kind that the University of North Dakota has been called upon to experience.

The students crowded into the chapel at the usual hour and with sorrow evident on every face. One of Professor Estes' favorite hymns, one which he himself had taught the students, "The Angel's Welcome" was sung by the young people, after which President Merrifield read the twenty-third psalm.

The regular university classes were announced adjourned. Two meetings were then held, one of the students as a whole, and one of all the members of Estes' classes, which drew up brief resolutions expressing their sentiments in regard to their great loss.

Surviving Estes were his widow, Bella Chambers Estes and a 12-year old son, Alden. His death resulted from an attack of pneumonia and other complications."
It is believed that Estes took pleasure in devising clever, original and elegant proofs of the Pythagorean Theorem, which occasionally he would present to his geometry classes.

Estes received some help in his teaching duties from Joseph H. Root (Instructor 1893-94).

By 1896-97, Estes had made some changes in the courses offered: three "terms" of high school algebra followed by Course I: Higher Algebra, Series, Theory of Determinants, Plane and Spherical Trigonometry, Analytic Geometry, and Conics; Course II: Analytic Geometry, Solid Geometry, Calculus; Course III: Analytical Mechanics.

In 1897-98 Lt. Frank Albright (Instructor) assisted Estes and in 1898 the University acquired Carl J. Rollefson (1898-1903) as Assistant Professor of Mathematics and Physics (and in charge of Scandinavian Language and Literature).

About the same time Elwyn F. ("Chuck") Chandler (1898-1914) began teaching mathematics, and he taught almost all of the math courses at UND from 1898 until 1910. He was appointed Professor of Civil Engineering and relieved of his duties in mathematics in 1914. Chandler again brought about changes in course offerings: Course I: Higher Algebra, Analytic Geometry and Conics; Course II: Analytic Geometry, Solid Geometry, Advanced Differential Calculus; Course III: Advanced Analytic Geometry; Course IV: Advanced Differential Calculus, Advanced Integral Calculus, Differential Equations; Course V: Kinematics, Statics, Kinetics.

Chandler received help from Rollefson, Jens M. Rysgaard (Instructor 1904-1910) and Raymond Royce Hitchcock from 1910-1914. Hitchcock was destined to become a long-time member of the department--more about him later.

By 1907-08 Chandler made further changes in the curriculum and the UND catalog lists the following "numbered courses":

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Higher Algebra and Trigonometry</td>
<td>4 sem. hrs.</td>
</tr>
<tr>
<td>2</td>
<td>Higher Algebra and Analytic Geometry</td>
<td>4 sem. hrs.</td>
</tr>
<tr>
<td>3/4</td>
<td>Differential and Integral Calculus</td>
<td>8 sem. hrs.</td>
</tr>
<tr>
<td>5</td>
<td>Projective Geometry</td>
<td>3 sem. hrs.</td>
</tr>
<tr>
<td>6</td>
<td>Solid Analytic Geometry and Quadric Surfaces</td>
<td>3 sem. hrs.</td>
</tr>
<tr>
<td>7</td>
<td>Descriptive Astronomy</td>
<td>2 sem. hrs.</td>
</tr>
<tr>
<td>8</td>
<td>Theory of Equations</td>
<td>2 sem. hrs.</td>
</tr>
<tr>
<td>9/10</td>
<td>Differential Equations</td>
<td>4 sem. hrs.</td>
</tr>
<tr>
<td>11/12</td>
<td>Elements of Functions of a Complex Variable and Linear Transformations</td>
<td>4 sem. hrs.</td>
</tr>
<tr>
<td></td>
<td>(also ten courses in surveying)</td>
<td></td>
</tr>
</tbody>
</table>

Raymond Hitchcock (1910-1937) was appointed to teach mathematics in 1910, and when Chandler left his math duties in 1914, the mathematics department came into existence as a separate entity and Hitchcock became the first head of the mathematics department. When Hitchcock first arrived in Grand Forks to be interviewed for the job, the time of year was March or April and the campus was messy as was often the case. The roads were muddy and the snow and ice
were dirty and slushy during the day, but at night when things froze over, the campus didn't look bad at all. Chandler very much needed a mathematician like Hitchcock and was reluctant to let Hitchcock view the campus in daylight for fear he might simply turn down the job on the spot and hasten back home. Chandler got around this problem by showing Hitchcock the campus at night by moonlight.

Hitchcock began at UND as an instructor in mathematics in 1910 and moved up through the ranks to Associate Professor and Head of the Department (1914-1915) and became Professor and Head of the Department in 1915, a position he held until his untimely death in 1937 at the age of 56. The length (23 years) of his tenure as department head has never been equalled by anyone else, before or following him. He was born May 2, 1880 at Lake Mills, Wisconsin and married Annette "Blondie" Holt (UND graduate 1912). Miss Holt had served as Grand Forks County Superintendent of Schools prior to her marriage.

From 1914 until 1921 Professor Hitchcock was essentially a one-man department. He occupied an office in the basement of "Old Main" with an adjoining classroom (about 30 seats) where he met his classes. He liked this location because it was near the center of activities -- across the hall from the bookstore and adjoining the Post Office. "Prof" maintained an "open door policy", and he kept the same office until the department moved to the third floor of Merrifield Hall, with three offices at the North end and classrooms on the same floor (a move that took the department from very undesirable physical surroundings into a home of relative luxury). Hitchcock was formal in appearance and manner, but not excessively so. He insisted on a high standard of conduct and performance from his students, and got it, quite painlessly. He was never unprepared for class sessions. Academically, he was a fine teacher who had little or no interest in research.

Hitchcock was an expert gardener and gave a series of lectures on gardening which were aired by a local radio station. He was an exquisite china painter and filled several cabinets with dishes handpainted in geometric designs in gold and black. He presented many of these dishes to his wife and to his mother. He also did watercolors.

It should be mentioned that Chandler had a favorite math course: "Method of Least Squares" which he continued to teach for the department until at least 1919-20, and his name was listed in the UND catalog along with this course until about 1940, although it is doubtful he actually taught the course very often after 1920.

As mentioned before, Hitchcock taught all the math offered from 1914 to 1919 with the exception of Chandler's pet course and one relating to "secondary school teacher training in mathematics", taught by Flora E. Balch (1910-1914), followed in succession by Ms. Broadby, Johanna Londergau (later Mrs. James S. Lamb), and Avise Wright Hosto (1919-20). Hitchcock also served as Dean of Men at UND for several years. Hitchcock died on March 11, 1937, coincidentally, the same day of the same month as his predecessor, Professor Estes. Again, we quote from the Grand Forks Herald, March 12, 1937:

"Stricken with an apoplectic stroke shortly after noon Wednesday at his home, 2622 University Avenue, Professor Hitchcock died at 10:45 a.m. Thursday. He had recovered from a less severe attack a year ago, and resumed his teaching last fall."
He had been president of Sigma Xi, honorary science fraternity and of Phi Beta Kappa.

The body will be taken to St. Cloud Saturday night for burial in the family plot there."

It is evident that the Grand Forks Herald had become less generous in its praise of deceased UND mathematics professors during the time from 1898 to 1937. Nevertheless, it seems that Professor Hitchcock was as praiseworthy as anyone who preceded or succeeded him.

At the time (1914-15) when Hitchcock first headed the department, the "College of Liberal Arts" required for graduation

128 hours and a 78\% average

One major consisting of at least 24 hours

Two minors consisting of at least 16 hours each

In mathematics the requirements were at least 28 hours for a major and at least 16 hours for a minor.

Credit and acknowledgement for information about the department from 1920-1937 (most of the "Hitchcock years") must go to J. Douglas Leith, who taught in the math department most of that time. He retired from teaching at Lehigh University some years ago and now resides in Pennsylvania. He wrote a long letter, which regretfully cannot be included here in its entirety, since space will not permit. However, he has given permission to quote directly from his letter, and much of what you will read in the next paragraphs are Leith's words.

Leith taught mathematics at UND from 1920 until 1936. His classes were, on the whole, elsewhere than in Old Main. One location was a classroom on the second floor in Chandler Hall. It was distinguished by the fact that it was above "the machine shop" in which sophomore engineers were given some kind of general machine shop (metal) experience; the noise and the vibration were just short of intolerable, but there was no relief available and the show went on. A post-war (WWI) temporary building (built of the shoddiest kind of sugar-cane stalks) manufactured into 4' x 10' panels was partitioned into a 12-classroom building (no offices) and located between Old Science Hall and Budge Hall. The wind whistled through it, but it was a big improvement. It was referred to as "Ellis Hall", this being the name of the Superintendent of Buildings and Grounds. The building was educationally substandard and was eventually removed, but it "hung on" for a long time.

The department acquired a third man at some time in the early 1920's and an office (for two) was provided as follows: the open "porch" at the south-east corner of Old Main was sealed in with composition board, with no egress but with access from within the building. Snow occasionally would accumulate on the roll-top desks, having drifted in through the minimum sealing job which had been done. Blackboards, erasers, and their care was minimal. (It is possible that many of the present members of the department, who have taught courses in recent years at the Grand Forks Air Force Base can sympathize with the plight of Hitchcock, Leith and others.)
Teaching loads were about 16 semester hours. Leith recalls that one particular semester (fall semester of 1935-36) after the department had moved into Merri­field Hall, there was a combination of circumstances which led to a surprise appearance of something like 150 students for a first course in college algebra. This came from a change in requirements in business administration (which threw the lot into one semester) and a lack of any pre-registration information; and it became clear that we had five sections of 30 each instead of the two (or three) which had been expected. "It was that semester in which my schedule reduced itself to one mathematics course and four college algebra classes. I can hardly believe my memory. I taught four sections Monday, Wednesday, Friday at 8, 9, 10 and 11 a.m. I taught you the details; it was the worst teaching experience I ever had, quite in a class by itself."

Class size of 30 students was maximal due to space limitations, but there were many small classes, at junior and senior level with only 4 or 5 students. The math classes were almost all in the morning, an arrangement that rested on the stoutly held position that good mathematical thinking was not possible after 12 noon. The classroom atmosphere was formal, but not unfriendly, and not "western" either. "Mr.", "Miss" (or "Mrs." occasionally) was used in the larger classes; smaller classes tended toward a first-name basis. Students were kept at the blackboard much of the time, or one student would go to the board and present the solution of a problem or proof of a theorem. There was little of "lecture and recitation" in the undergraduate courses.

In those days it was believed that when times were good, more girls were given the opportunity to go to college than when times were bad, when the money was spent on the boys. Very few students were married in those days. Textbooks in mathematics were changed about every 5 or 6 years. In a three semester hour course, there were typically two one-hour tests plus the final exam. The one-hour tests were written on the blackboard by the instructor. "Blue books" had to be used for finals. 70% was the lower boundary for a passing mark. There was an intermediate state (60-69) which was not passing but which admitted the student to a re-examination (not immediate, but early in the next semester, or just before). This "conditional" grade lapsed into an automatic failing grade if the "condition" was not removed in time.

There was no printed dress code; dress was conventional for men: coat and tie; haircuts "standard" or short; moustaches okay, but beards were "out" except for the notable "Smith Brothers", twins who played left tackle and right tackle on the football team.

The general quality of the students was high. They were the selected (i.e. selected by themselves and their parents' economic circumstances in most cases) ones from the high schools of the state. Most of the high schools were small, and many did not teach mathematics beyond algebra and plane geometry. Hardly any of them had solid geometry or trigonometry. This was not their fault, and it was accepted that the University owed it to society and these students to compensate for the shortages which they had encountered. Thus quite a lot of "remedial" teaching was done.

Leith mentioned that Philip Rognlie (who later on was destined to serve the mathematics department and the whole University with distinction) was one of his favorite people, at the time when Phil was an undergraduate student at UND and later a colleague of Leith for about a year.
R. F. Castner (1920-23), Mansell Richards (1921-22), Irving Willis (1922-23), Samuel F. Bibb (1923-25), Thurman Andrew (1925-27), Raymond Staley (1927-59), Sewell Mason (1928-50), and Rognlie, along with Leith, taught during the "Hitchcock years". I. M. Adams (1930-31) was the first graduate teaching assistant in mathematics at UND. Milton Winger, a current member of our department, was the first post-World War II graduate teaching assistant in math at UND.

In 1929-30, courses offered were as follows: (Note the change in the method of numbering the courses)

**Junior Division**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 101-102</td>
<td>Freshman Mathematics</td>
<td>8 hours</td>
</tr>
<tr>
<td>Math 111-112</td>
<td>Engineering Mathematics</td>
<td>12 hours</td>
</tr>
<tr>
<td>Math 121</td>
<td>College Algebra</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 122</td>
<td>Theory of Investment</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 191-192</td>
<td>Introductory Course</td>
<td>4 hours</td>
</tr>
<tr>
<td>Math 201-202</td>
<td>Calculus</td>
<td>8 hours</td>
</tr>
<tr>
<td>Math 291-292</td>
<td>Elementary Mathematical Statistics</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

**Senior Division**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 301</td>
<td>Theory of Equations</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 312</td>
<td>Advanced Analytic Geometry</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 331</td>
<td>Theory of Probability</td>
<td>2 hours</td>
</tr>
<tr>
<td>Math 332</td>
<td>Method of Least Squares</td>
<td>2 hours</td>
</tr>
<tr>
<td>Math 401</td>
<td>Teachers Course in Mathematics</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 412</td>
<td>Differential Equations</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 422</td>
<td>Projective Geometry</td>
<td>3 hours</td>
</tr>
</tbody>
</table>

**Graduate Division**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 501</td>
<td>Advanced Calculus (Hitchcock)</td>
<td>3 hours</td>
</tr>
</tbody>
</table>

By 1936-37, when the faculty consisted of Hitchcock, Staley, Mason, and Rognlie, the course offerings were somewhat expanded:

**Junior Division**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 101</td>
<td>College Algebra (A)</td>
<td>5 hours</td>
</tr>
<tr>
<td>Math 103</td>
<td>College Algebra (B)</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 105</td>
<td>Trigonometry</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 106</td>
<td>Analytic Geometry</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 111</td>
<td>College Algebra (A) and Trigonometry</td>
<td>5 hours</td>
</tr>
<tr>
<td>Math 112</td>
<td>Trigonometry and Analytic Geometry</td>
<td>5 hours</td>
</tr>
<tr>
<td>Math 113</td>
<td>College Algebra (B) and Trigonometry</td>
<td>5 hours</td>
</tr>
<tr>
<td>Math 114</td>
<td>Trigonometry and Analytic Geometry</td>
<td>5 hours</td>
</tr>
<tr>
<td>Math 116</td>
<td>Spherical Trigonometry</td>
<td>1 hour</td>
</tr>
<tr>
<td>Math 122</td>
<td>Theory of Investment</td>
<td>3 hours</td>
</tr>
<tr>
<td>Math 201-202</td>
<td>Differential and Integral Calculus</td>
<td>8 hours</td>
</tr>
<tr>
<td>Math 298</td>
<td>Elements of mathematical Statistics</td>
<td>3 hours</td>
</tr>
</tbody>
</table>
The department thus functioned under the able leadership of Hitchcock until his death in 1937. During his tenure, however, he acquired four men who were to play significant roles in the department: J. Douglas Leith, Raymond Staley, Sewell Mason, and Philip Rognlie. It is appropriate that Witmer Hall, the building now occupied by the departments of mathematics and physics is named in honor of a long-time distinguished physics teacher at UND whose wife, Lillian, is the sister of Douglas Leith, a long-time distinguished mathematics teacher at UND.

Leith remarked that he decided to leave North Dakota in 1936 when he finally realized that the state was paying its beer inspectors more than its college professors. Maybe it is just a coincidence that his departure immediately followed the academic year when he was saddled with those four college algebra classes, all in a row.

Raymond Coffey Staley served the department from 1927 until his retirement at age 70 in 1959. Almost all of these years were spent in Merrifield Hall. Staley was born December 13, 1888, and died on May 4, 1963. He earned his A.B. and A.M. degrees at the University of Colorado and his PhD in mathematics at the University of Michigan in 1938. He was a teacher and principal in Gypsum, Colorado, High School from 1916 to 1925 except for his service in the U.S. Army (WWI) in the Medical Corps, where he managed the base hospital at Toulouse, France (and also found time to attend some classes at the University of Toulouse).

He came to UND as Assistant Professor of Mathematics and in 1938 as Associate Professor, he became the second head of the department, following the death of Hitchcock. He was promoted to Professor in 1940 and served as department head until his retirement, after which he taught at Macalester College for three years. He then returned to his home in Grand Forks for one year, free from any teaching duties, after which he decided to return to the classroom again and agreed to teach mathematics at a Presbyterian College in Maryville, Tennessee, for the 1963-64 academic year. These plans never materialized due to his sudden and unexpected death in the spring of 1963. Up until that time, he appeared to be in excellent health.
Dr. Staley (none of us, except Sewell Mason, addressed him by his first name), was totally dedicated to the University; it was his profession and his hobby. While he had many other interests, they were secondary to his concern for the department and the whole University. He felt that the primary purpose of the department was to provide high-grade classroom teaching, and he insisted that every mathematics student get a full 50 minutes of good classroom instruction every day of the semester on which a particular class was scheduled to meet. He was concerned that students be given comprehensive but fair tests, and that final exams be conducted at the scheduled time and day with no exceptions.

He was almost always the first person in the department to arrive on the scene in the morning and the last one to depart in the afternoon. Sometimes the phone would ring shortly after he got to his office, with the news that Mr. X could not meet his 8:00 algebra class because of illness. Dr. Staley would then try to find some other person to "take over" the class (Staley couldn't do it because he had an 8:00 class himself) and he sometimes became quite concerned if no one (without a scheduled 8:00 class) was on hand. He was meticulous in every detail and did almost all his own secretarial work. He was well-liked by his students and took pleasure in keeping in contact with many of them by mail after they graduated.

Staley served on numerous University committees and was active in professional organizations. He was a man of integrity and his word was as good as a written contract. (In fact, the first few years this writer was at UND, we had no written contracts to sign--just a verbal agreement). Staley was punctual and he expected others to be the same.

Departmental decisions were made pretty much unilaterally during Staley's tenure as department head, this being the way departments usually operated in those times. Department "meetings" were called occasionally at which the other members were informed of the decisions which had already been made, but we came away feeling somehow that we had made some contribution to the meeting. Fortunately, Staley was an unusually intelligent man with good common sense, and the decisions he made were generally excellent: in the best interest of the department and the students. He presided over a "conservative" department.

Staley ranks second only to Hitchcock in the number of years (21) that he served as head of the department, and he saw the total math enrollment top 1000 (1125 to be exact) for the first time in the fall semester 1955-56. He did not expect anyone on the staff to do anything that he would not do himself.

Staley was an expert gardener, and he kept physically fit by taking long walks and eating sensibly. He made a practice of reading for half an hour or so from his Spanish Bible every night before bedtime to "keep up" on his Spanish. He was a member of Phi Beta Kappa and Sigma Xi.

Raymond Staley and Leah Tracy (Colorado) were married in 1919. Mrs. Staley, who still resides in Grand Forks, is a lovely lady and she was a charming hostess who many times extended the hospitality of their home to members of the math faculty on festive occasions such as Thanksgiving Day. Anyone who ever tasted the food she served knew that she was a "five-star" cook. Besides
that, the warmth of her personality, as well as that of her husband’s, put all
the guests at ease.

Sewell L. Mason taught in the department from 1928 until his death on December
12, 1950. He taught at Washburn High School (1927-28) and was promoted to
Associate Professor at UND in 1939. He earned his B.S. degree at UND in 1927
and his Masters degree at the University of Michigan in about 1935. He took
sabbatical leave to attend the University of Washington (1949-50). He served
under both Hitchcock and Staley, and was known by both students and
colleagues to be one of the finest teachers at the University -- he was know­
ledgeable, well prepared and had the knack of making difficult things seem
logical and simple. He expected high quality performance from his students and
usually got it. He was very precise and well-organized in whatever he did.

Mason served for 2 years as part-time Assistant Dean and freshman counselor
for the College of Science, Literature and Arts at the time when Witmer was
Dean.

Mason was born in Minnesota on February 2, 1907, and died at the age of 43.
He married Margaret Lovell (born at Gilby, North Dakota) in 1933. They had
two sons, one of whom, Earl, is now Professor of Civil Engineering at UND.
Margaret is a graduate of UND. She taught first grade in the Grand Forks
Public Schools (1951-61) and taught Special Education (1961-72) until she re­
tired, and now resides in Beach, North Dakota.

Sewell’s hobbies included woodworking, ceramics, making French briar smoking
pipes and travel.

To illustrate how conscientious Mason really was, Mrs. Mason told of how,
during final exam week, he often paced the floor at night trying to make deci­
sions about giving final grades, torn between the possibility of either cheat­
ing the student or permitting him to move along, unprepared, to a more advanced
course.

Philip Arnold Rognlie came to UND as an instructor in mathematics in 1934. He
held the rank of instructor 1934-35 and 1937-40; Assistant Professor 1940-50
(with leave of absence to serve in the U.S. Army 1941-45); Associate Professor
1950-1973; and Professor 1973-75. When Rognlie joined the department, the
other members were Hitchcock, Leith and Mason (Staley having taken a leave of
absence), so Rognlie served under all department heads or chairmen, including
Hitchcock, Staley, Hatfield, Nelson, and Bzoch. Rognlie himself acted as
Chairman 1959-60.

Rognlie was born October 16, 1908, at Moorhead, Minnesota and died on
December 10, 1975. He earned his B.S. and M.S. degrees at UND in 1931 and
1934 and later took a one-year leave of absence for graduate work at the Uni­
versity of Minnesota. He was Assistant to Dean Witmer of the College of
Science, Literature and Arts for several years, and was Dean during Dean
Witmer's absence in 1964-65. He was presented with the Charles DeBruyn Kops
Outstanding Teacher Award in 1971.

He served the University in many different ways; he was respected by his
colleagues for his good judgement, intelligence, integrity and ability to express
himself in an earthy manner which could not be misunderstood. No one in the
department has ever served the University with more dedication.
In the classroom, Phil had a somewhat military, authoritarian bearing, which continued until he mellowed somewhat in later years. His "no-nonsense" manner and razor-sharp wit, combined (when necessary) with a touch of sarcasm was enough to wilt any unfortunate victim who happened to be daydreaming when called upon without warning to recite. Such a student, even though normally articulate, would then learn how to stammer. Nonetheless, Phil was respected and liked by his students, who admired him for his excellent teaching ability, his knowledge of the subject matter, and his consistency. He always came to teach well-prepared. He gave his best in the classroom and expected the same from his students. In spite of his somewhat austere outward appearance, Phil was sympathetic to the needs of students and would spend hours in his office helping them with their work.

When a student missed a test without good reason and came to Phil's office to ask to be allowed to write a "make-up" test, the scenario went something like this: Phil would say not a word; he would stop doing whatever it was that he had been doing; then very deliberately he would reach for a cigarette and his lighter; very deliberately would tap the cigarette on his desk; very deliberately he would place the cigarette in his mouth and light it and very deliberately he would take a long drag on his cigarette and then very slowly exhale the smoke, all the time directing a withering gaze at the student who, by this time, was probably wishing that he hadn't asked. Rognlie then proceeded to interrogate without mercy, but by the end of it, he usually would relent and agree to the make-up test—but not before the unfortunate fellow had squirmed long enough to know better than to repeat his mistake.

Phil's wife, Eleanor, a gracious and charming lady, resides at their home in Grand Forks. She held a position for many years with the Grand Forks School District.

Phil was an avid golfer and he loved to listen to music. He had at his fingertips a seemingly endless supply of humorous stories, which he could relate with almost professional skill. Unfortunately, space will not permit the inclusion of any of them. He was an excellent conversationalist. He was unique. The department is richer for having had him.

Arthur Saastad taught in the department from 1937 - 1940.

Kenneth Hankerson joined the department in 1940 and retired in 1977. He and his wife "Maggie" now reside in Woodburn, Oregon. He moved up through the ranks and was promoted to Professor in 1974. He earned his Masters Degree at UND in 1942, after having been high school principal at Newfolden and Kennedy, Minnesota (1935-39). He served in the U.S. Navy 1944-46. He attended graduate school at the University of Minnesota for several summers.

Hankerson was given the Charles Debruyn Kops Distinguished Teaching Award in 1973.

When Hankerson came to UND the department also included Staley, Mason and Rognlie. Hankerson was a conscientious teacher who insisted that his students have plenty of homework in order to enable them to master the necessary techniques. He served on many important University committees.
Hankerson was the leader in developing Math 203 (Modern Mathematics for Business) first offered in 1972-73 which later (1974-75) was expanded into Math 203 (Math Methods I) and Math 204 (Math Methods II). He was elected to several terms on the Grand Forks City Council.

His hobbies include golf, fishing, hunting and music listening. He holds the rank of Professor Emeritus of Mathematics.

Larry Gill was in the department in 1942 to 1944 as an instructor. Enrollment decreased in the World War II years, although the A.S.T.P. program kept some of the math faculty busy. By 1944-45 the staff had shrunk to just Staley and Mason, but by 1945-46, Rognlie had returned.

In the 1946-47 academic year the department experienced its all-time greatest percentage increase (318%) in the total number of students enrolled, and also the greatest actual increase in numbers (684) from 215 in 1945-46 to 899 in 1946-47. (All of these are fall semester figures). This huge increase was the result of the influx of G.I.'s returning to college following WWII. These numbers put a severe strain on our teaching resources and Dr. Staley had a hard time finding enough qualified math teachers to meet all the classes.

The mathematics faculty of 1946-47 included: Staley, Mason, Rognlie, Hankerson (all had served before); Woodrow McBride, John Peterson (new full-time); Gordon Andreasen, William Barrett, Harold Cersonsky, Robert Chapman, Warren Greenlee, George Lawler, Lloyd Orser, John Scholz, Donald Stonestrom, Earl Swanby (part-time).

Woodrow McBride (1946-81) received his B.A. degree at Jamestown College in 1940 and his Masters degree at UND in 1947, after serving as teacher and principal at Lankin, Nekoma and Wahpeton, North Dakota, and at Carlton, Minnesota. He was born at Milton, North Dakota, and married Ann Riedesel, Cathay, North Dakota, in 1944. He was promoted to Associate Professor in 1957 and retired at that rank in 1981.

McBride has served the department for the most consecutive years (35); and also has held down an Associate Professorship for the greatest number of years (25); McBride is the only one in the department ever to teach a 20 semester hour load (fall 1946-47); the first ever to teach a "large" section (about 180 algebra students in room 300 in Merrifield Hall); and the first to teach an off-campus mathematics class (summer 1957, at the Finley Radar Station) for the Extension Division. He now has the rank of Associate Professor Emeritus of Mathematics, and serves at UND as "Academic Consultant in Mathematics". McBride has been affiliated with the Correspondence Department (of the Division of Continuing Education) for over 30 years and at present is in charge of nine correspondence courses in mathematics.

His main interest as a teacher is geometry for prospective secondary teachers, and he has taught such geometry courses for 33 years. He first taught Math 410 (College Geometry) in 1948. Subsequently the course was expanded to two semesters (Math 409-410 Geometry) which McBride continued to teach until retirement.

McBride was presented with the Charles DeBruyn Kops Distinguished Teaching Award in 1972.
Mac and his wife, Ann, reside on Columbia Court. Ann's hobby is ceramics. Mac's hobbies consist of music listening, playing the fiddle, traveling, and trying to think up things to say about his colleagues while writing a History of the Math Department.

John C. Peterson was on the math faculty from 1946 until 1957, when he left UND to take a job with Hughes Aircraft in Los Angeles. He is now retired and resides with his wife, Dorothy, in Manhattan Beach, California. We do not know whether or not John checked with the beer inspectors before he left UND.

John was born at Watford City, North Dakota. He was soft spoken, and talked quite slowly with a slight drawl. He was witty, very intelligent, a capable mathematician and an extremely effective teacher who was popular with his students. He never seemed to be in a hurry, but he made every move count. He could accomplish a lot of work in a given length of time. This writer shared office space with John for eleven years.

Christine Westgate (1947-48) taught a new course: Math 340 (General Astronomy).

Simon Simonson came in 1948 and taught until 1953 when ill health forced him to retire. "Si", as we called him, took his teaching duties very seriously and spent many hours working out all the problems and exercises in the textbook before he would start teaching a course.

Like almost all the rest of us, Si "brown bagged" his lunch, and he loved noon hour when he joined the group to enjoy one of his favorite pastimes--conversation.

He was unexcelled in his patience in explaining mathematical techniques even to unbelievably dull and lazy students. He was fond of using "memory schemes". When teaching trigonometry, he used the phrase "All State Teachers Colleges" to remind his students that in the first quadrant All trigonometric functions are positive, in the second quadrant the Sine (and its reciprocal are positive), etc. The "T" stood for Tangent and the "C" for Cosine. He also had a system for remembering to reverse the algebraic sign of a term when transferring it to the "other side" in an equation: When you are driving your car along the road and stop at a red traffic light, you can't cross the "street" until the "sign" changes.

Ruth J. MacKichan joined the department in 1949 as a part-time instructor and retired in 1974. She was born August 3, 1913, at Charleston, South Carolina, and died January 12, 1981. She got her bachelor's degree from the College of Charleston in 1935 and her Master's from the University of Michigan in 1937. She was the first and only woman to make a significant impact on the department and the first and only woman to receive tenure in the department. After retiring she continued teaching and held the rank of Associate Professor Emeritus and part-time lecturer in mathematics until 1978.

Ruth was an innovative teacher and was receptive to new ideas about how best to get her ideas across. She felt that students learned best by getting involved in the class activities. She expected high standards of performance, was warm and friendly in class and was popular with her students. She won an Outstanding Teacher Award in 1972.
The year after MacKichan came, she introduced Math 130 (Descriptive Astronomy) and Math 340 (General Astronomy) into the curriculum. She gave numerous lectures on astronomy to various groups.

Ruth served on the Grand Forks Board of Education a number of years and was the first woman ever to be named President of the Board.

Ruth was the wife of Keith MacKichan, formerly Professor of Electrical Engineering at UND, who preceded her in death.

Edward O. Nelson arrived on the campus in 1950 and has been here 1950-56; 1959-60; and 1962-. He got his undergraduate degree at Luther College in 1949 and his PhD at the University of Minnesota in 1959 with specialization in analysis. He served in the U.S. Army (1943-46), and has taught at the University of Minnesota and the University of Utah. He served as Chairman of our department 1964-66. He holds the rank of Professor and is now the senior member in the department.

Ed won an Outstanding Teacher Award in 1971. This was well-deserved, because he is an outstanding teacher both in the classroom and in his office. His reputation as a person of extraordinary intelligence and good common sense extends campus-wide and his talents often have been sought out by this department and by the University. His competent service on important University Committees is well-known. His advice is valued because everyone knows he is honest and trustworthy.

In this department Nelson probably is the one most likely to be sought out by his colleagues for help with almost any kind of mathematical problem. His interest and knowledge extends to many areas of mathematics. Ed has a remarkable memory; he has an interest and some knowledge of almost anything that comes up in conversation.

Ed has a remarkable filing system in his office. Everything ends up in big piles on top of his desk, but he almost always can find what he wants as long as nobody opens his window when the wind is blowing from the south.

Ed and his wife, Bobbe, live on Boyd Drive. Bobbe and Ed have a spacious house and yard and they have, on many occasions, been hosts to math department parties and picnics.

Ed's hobbies include reading, gardening, fishing, and hunting.

In 1950-51, new courses offered were Math 414 (Vector Analysis) and Math 100 (Plane Geometry), the latter carrying zero credit. John Peterson was on leave that year at the University of Minnesota. In 1951-52, new courses included Math 121 (Business Math - 3 hours), Math 422 (Mathematics of Statistics - 3 hours), Math 210 (Elementary Statistics - 3 hours). In 1952-53, the new courses were: Math 503 (Operational Mathematics) and Math 505-506 (Seminar in Mathematics).

Walter J. Lyche came in 1953 and left in 1956, to take a position in the math department at Long Beach State College, in California. He is now retired and resides in California with his wife, Esther. Walt is an expert gardener and "handyman".
James S. Rue first came to UND in 1955. He has served in the math department 1955-57; 1958-60; and 1970-. He got his bachelor's degree at Mayville State College (1951) and his PhD at Iowa State University (1965), with specialization in Functional Analysis. He was in the U.S. Army 1951-53.

Jim has a ready wit and disarming manner that puts his students at ease. He is considered an excellent teacher, good-natured and at ease with his students, with whom he is popular. He expects quality performance and most likely gets it.

Rue has been very active in the creation and perpetuation of the High School Math "Track Meet" which has been held annually in Witmer Hall on one of the days during "spring break", starting in 1975. Bright high school math students from towns in this geographical area come to the campus on that day to compete, either individually or in teams. The individual or team is given a set of mathematical problems to be completed in a given length of time, while competing against other individuals or teams with the same questions. The papers are collected at the end of an allotted time and graded immediately so that "winners" are determined right away, as the problem sessions proceed. At the end of the Track Meet, trophies and ribbons are presented to the winners. Jim has had a lot to do with obtaining and devising good questions for the contest.

Jim and his wife, Suzanne, live on Darwin Drive. Sue is an excellent pianist. Jim and Sue have a beautiful home and they have hosted numerous get-togethers for the department. Jim's hobbies include hunting, fishing, gardening, golf, reading and cribbage.

New courses (1955-56) include: Math 407 (Advanced Plane Analytic Geometry); Math 408 (Solid Analytic Geometry); Math 502 (Higher Algebra).

Milton E. Winger joined the department in 1956 and is now Professor of Mathematics. He completed his undergraduate work at Mayville State College (1953) and earned his PhD at Iowa State University in 1972, with emphasis in the area of statistics. He was in the U.S. Army (1953-55).

Winger has been very instrumental in coordinating the courses in statistics which are offered in various departments of the University. He has also instituted the statistics minor in the Math Department. In the late 1960's he helped organize Math 421-422 (Mathematical Theory of Statistics - 6 hours) as part of the curriculum. Milt is respected campus-wide for his intelligence, good sense and dependability. He is generous in serving the University and the Department, having worked with distinction on committees too numerous to mention. This writer does not know how Milt does it, but he can find time to do more jobs, varied in nature, than seems possible.

At the same time, Milt keeps up on his piano playing (many years ago he played piano in a Mayville dance band); he has read extensively about the American Civil War; he is actively involved in Church affairs; he is an excellent golfer; and he likes to hunt ducks. (In fact, we almost lost both Winger and Nelson a number of years ago when their duck boat overturned. Only Ed's ability to wade through a mud-bottom pond with hip boots full of slough water saved the day).
Milt is a respected and meticulous classroom teacher, persistent in his efforts to see that every student gets as much personal attention as possible. He has devoted much time to directing the work of many graduate students.

Milt and his wife, Marge, reside on 24th Avenue South. Marge is a UND graduate and is now a library aide at Schroeder Junior High.

Gene A. Kemper came to UND in 1956 and the details of his career make interesting reading: Math Department (1956-60); Math Department, full-time (1966-69); Math 2/3 time and Computer Science 1/3 time (1969-75); Math 1/3 time and Computer Science 2/3 time (1975-79); Computer Science (1979-81), (when we lost all of him); and Assistant Vice President for Academic Affairs (1981-).

We have been privileged to attend several lectures presented by Kemper to groups of mathematicians and students. This writer has at no time observed a lecturer with his subject better mastered and organized, who rationed out the material more skillfully without redundance and who left the listener with more of a feeling that he had just seen something significant and understandable. Gene was a brilliant teacher, as his students would verify. The department misses him.

Gene (in the late 1960's) initiated the courses: Math 461-462 (Numerical Analysis) and Math 463 (Applied Matrix Theory). Gene (along with Conrad Dietz) created the Small College Computer Symposium in 1967-68 and it is still alive and well.

Kemper got his PhB degree (not to be confused with his later PhD) at UND in 1956 and his PhD at Iowa State University in 1965, with specialization in the field of Applied Mathematics. Gene is a member of the Society for Industrial and Applied Mathematics, Sigma Xi and several other societies. He has been the recipient of many honors because of his scholarly achievements.

Gene and his wife, Mickey, reside on North 39th Street. Gene's hobbies are camping and boating.

In the late 1950's the department was well served by Leslie E. Whitford (who shared an office and is a long-time friend of this writer). Les was an extremely conscientious teacher, who was respected for his dedication to his work. From here he went to Wright Patterson Air Force Base and in 1968 earned his PhD at Ohio State University. Dale Rognlie (a nephew of Phil Rognlie), Ruth Axe, Blair Burner, Arman Goplen, and Melvin Withnell also were with us at this time. Dale went to the South Dakota School of Mines at Rapid City, and Blair accepted a job with Boeing Aircraft Corporation, and, later, formed his own consulting firm.

In the summer of 1957, the first ever off-campus math course was offered through the Extension Division when McBride made two trips a week to the Finley, North Dakota, Radar Station to teach college algebra. The facilities for teaching were almost indescribably bad, with problems such as excessive noise and heat, along with the lack of adequate space. The students were marginally prepared, their class attendance was interrupted frequently by military obligations, but they gave it a try, and a few made it through the course.
Not many years later, the department began offering off-campus evening courses (through the Division of Continuing Education) at the Grand Forks Air Force Base. At the inception of this program, mathematics courses were taught in one of the Elementary Schools on the Base (try to imagine a 200-pound, 6 foot Airman trying to squeeze into a sixth grade desk) and at various other locations on the Base, all with facilities that were enough to discourage and exasperate even the most dedicated teacher and student. (It seems next to impossible to convince the U.S. Air Force that it is necessary to have some chalk, clean erasers, and good, clean blackboards for effective mathematics teaching.) Things are better now. They have an "Education Building" and another building about a mile away. The "other building" is educationally marginal, the parking lot is often dark by the time classes are dismissed, and with ice and snow to walk on, one gets back to his car in the dark at his own risk.

As a whole, the students in our Extension classes have an excellent attitude toward learning. They are cooperative, mature, pleasant and attentive. It is a genuine pleasure to work with them.

Thomas J. Robinson came to the Department in 1958, and now holds the rank of Professor. He received his bachelor's degree at Luther College in 1956 and his PhD at Iowa State University in 1963, with specialization in topology.

Tom is the author of an excellent trigonometry textbook, using an original modern approach to the definitions of the trigonometric functions. It was adopted by the UND Math Department and used successfully for many years and was used extensively across the nation. He also wrote an algebra text and a combined algebra-trigonometry book.

Tom is a fine teacher, knows his students on a first-name basis, and his excellent sense of humor puts them at ease. Tom is famous for his puns, but we've learned to live with this problem.

Tom is an excellent athlete and was a top-notch baseball player at Luther College. His liking for baseball still is evident: he has been assistant coach for the UND Baseball Team for many years (volunteer work) and he has taught lots of young men the correct way to swing a bat.

For several years Robinson has been UND Advisor for Retiring Faculty and Staff. He keeps well-informed on retirement problems and he feels that counseling should begin several years before an individual actually retires.

Tom is musical and has a good singing voice. With very little encouragement he can be persuaded to give an excellent impersonation of Tiny Tim's version of the classic: "Tiptoe Through the Tulips". Tom and his wife, Sandra, live on Cherry Street. Tom has another hobby besides baseball coaching: he runs several miles a day, year 'round, to keep in shape.

President George Starcher held the rank of Professor of Mathematics for nearly all of the years he was at UND. He never actually taught a math class. Starcher did oil painting in his spare time and the department now has two of his paintings hanging in the main office. Funds for framing were donated by Lancey Cascaden, a UND graduate who majored in math.
In the early 1960's, Lawrence Lardy and Dean Phelps (both of whom shared this writer's office in Room 319 Merrifield Hall), taught in the department; they were excellent and popular teachers and have had distinguished careers in mathematics since leaving UND.

Phelps earned his undergraduate degree at UND in 1956 with majors in both math and physics, came to UND to teach in 1961 and left in 1964 for Washington University in St. Louis where he got his PhD in 1968. He taught in the mathematics department at the University of Florida in Gainesville 1968-71, and then went to Lockhaven State College in Pennsylvania, where he is now Professor. Dean went on leave for a year (1979-80) to teach at Trent Polytechnic in Nottingham, England.

Having the name "Dean" gave him a rather unfair advantage over the rest of us. For example, some book publishers treated him with undue respect because they thought his first name was a title, and he ended up getting lots of nice letters and free books.

This department lost one of the most capable and brilliant people we ever had when Dean left us.

Dean and his wife, Ethel, both came from Grafton, North Dakota. His hobbies are playing pool, reading, watching sports and "observing" the fluctuations of the financial markets (not always successfully, he admits).

Also serving during that period were Merrill Barnebey and Richard Menzel.

Lyle E. Mauland joined the math faculty in 1959. He completed his undergraduate work at Winona State College in 1951 and got his Doctorate at the University of Denver in 1980, with emphasis in the area of Mathematics Education. He now holds the rank of Associate Professor. He served in the U.S. Army 1951-53.

Lyle is known to be a fine teacher: well-organized and thorough. He is innovative in his work in math education and conducts workshops for computers in area high schools. He and Ed Adams have collaborated to write manuals for students using the BASIC language. Lyle lectures outside the math department to various classes on campus.

Lyle lives with his wife, Marjorie, on 7th Avenue North. Marj has taught Home Economics at UND. Lyle's hobbies include golf, gardening, birdwatching and reading.

In 1960, Charles Hatfield was named Professor of Mathematics and Chairman of the Department. He came to us from the Math Department at the University of Minnesota. Hatfield holds a PhD in mathematics from Cornell University. He was the first teacher ever in this department to "make it" immediately to Professor without rising up through the ranks. The only other one to do this is our present Chairman, Ron Bzoch. (This makes Hatfield and Bzoch the two "rankest" math professors ever).

The department, grown somewhat complacent, had not quite kept up with the times. The course offerings needed to be changed, upgraded and modernized. Hatfield was just the medicine that the department needed. He was capable,
intelligent, handsome, articulate and charming. He looked things over the first year he was here and then began to make changes. By 1962-63 the courses offered were:

Undergraduate:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 100</td>
<td>Geometry</td>
</tr>
<tr>
<td>103</td>
<td>College Algebra</td>
</tr>
<tr>
<td>103H</td>
<td>Honors College Algebra</td>
</tr>
<tr>
<td>105</td>
<td>Trigonometry</td>
</tr>
<tr>
<td>106</td>
<td>Analytic Geometry</td>
</tr>
<tr>
<td>201-202</td>
<td>Calculus</td>
</tr>
<tr>
<td>310</td>
<td>Synthetic and Metric Geometry</td>
</tr>
<tr>
<td>311</td>
<td>Non-Euclidean Geometries</td>
</tr>
<tr>
<td>331</td>
<td>Intermediate Calculus</td>
</tr>
<tr>
<td>341</td>
<td>Algebraic Structures</td>
</tr>
<tr>
<td>342</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>351-352</td>
<td>Applied Mathematics</td>
</tr>
<tr>
<td>401-402</td>
<td>Reading Course in Mathematics</td>
</tr>
<tr>
<td>403</td>
<td>Theory of Probability</td>
</tr>
<tr>
<td>421</td>
<td>Statistical Theory I</td>
</tr>
<tr>
<td>432</td>
<td>Advanced Calculus</td>
</tr>
<tr>
<td>440</td>
<td>Elements of Topology</td>
</tr>
</tbody>
</table>

Graduate:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 503</td>
<td>Operational Mathematics</td>
</tr>
<tr>
<td>504</td>
<td>Complex Functions</td>
</tr>
<tr>
<td>505-506</td>
<td>Seminar in Mathematics</td>
</tr>
<tr>
<td>508</td>
<td>Numerical Analysis</td>
</tr>
<tr>
<td>513</td>
<td>Real Functions</td>
</tr>
<tr>
<td>514</td>
<td>Measure Theory and Lebesque Integrals</td>
</tr>
<tr>
<td>516</td>
<td>Partial Differential Equations</td>
</tr>
</tbody>
</table>

As can be seen, course offerings indeed had been updated. Hatfield made departmental decisions (even choice of textbooks) unilaterally. One choice that was amusing was when Hatfield selected as the text for "Algebraic Structures" a book written by an author whose name happened to be McCoy. Generally the changes he initiated were of benefit to the department in steering it in a new and better direction; complacent instructors were induced to change their ways and get in tune with the times. "Chuck" (as we called him) had a forceful personality and, once his mind was made up about something, it was hard to change. He held a strong opinion on almost everything, mathematical or otherwise.

He was almost immediately a popular person campus-wide and was held in high esteem by his colleagues on the UND faculty (deservedly so). He served on several important committees. He was very sensitive to and supportive of teacher education. He had more interest in pure mathematics than he had in applied mathematics. One of his hobbies was solving mathematical puzzles, and he was very good at it.

Hatfield devoted a good deal of his time attempting to advance the Christian Religion. He travelled extensively to many campuses where he lectured to groups of students on this topic.
Many of us in the department carried noon lunch to school in a bucket or a paper bag, and we munched and talked during noon hour. Chuck usually had an orange in his sack, and it fascinated us to watch him peel it: As the writer recalls, either (a) he would begin at the "north pole" and peel it in a continuous half-inch strip by spiraling around and around to the "south pole" or (b) he would begin at the "north pole" and, using his knife, cut the skin along some meridian almost to the "south pole", repeating this process at about 30-degree intervals; and then "peel down" the lunes into an almost perfect geometric design. We would all be conversing during this ritual, but no matter what the topic was at the start, Chuck would maneuver it so that almost invariably, the rest of us ended up listening to a discourse on some aspect of mathematics (delivered with skill).

Hatfield was an excellent public speaker -- personable and well prepared. The same can be said of his classroom lectures in mathematics. He proceeded through each lecture at a rapid pace, since he was set on completing a predetermined amount of material. Hatfield had a simple formula for deciding how much material to cover each day: Let $X =$ the total number of pages in the textbook to be covered in the entire course; let $Y =$ the total number of available lectures; let $Z =$ the number of textbook pages covered in any one lecture. Then $Z = \frac{X}{Y}$. This writer occasionally has tried the formula, with mixed success.

During Hatfield's term as Chairman, there was great demand in the job market for college graduates with mathematical training. Prospective elementary and secondary math teachers had to be trained to teach the "New Math". The department was under pressure to bring more PhD's into the math faculty; Hatfield brought back Ed Nelson and Tom Robinson, both with PhD's. He also bolstered the staff further by hiring people of the caliber of John Whitcomb and Dean Phelps. Hatfield recruited some outstanding people.

Hatfield was an excellent mathematician and was a man of high principles. He left UND in 1964 to become Chairman of the Math Department at the University of Missouri at Rolla. Hatfield was very good for the department and certainly made his mark before leaving us.

John L. Whitcomb came into the department in 1960. He got his undergraduate and masters degrees at UND in 1950 and 1953, and has done extensive graduate work in the field of teacher education at the University of Northern Colorado at Greeley. He is currently an Associate Professor.

John is an exacting classroom teacher; he demands excellence from his students and places a high value on good old-fashioned hard work. He is devoted to his duties as a teacher and expects his students to be just as devoted to their own obligations. At the same time, he is sensitive to the needs of his students and will do almost anything to see that they get fair treatment and help when needed. He has little patience with students who waste their time.

John is, without a doubt, the "workhorse" of the department. Since 1972, he has taught seventeen sections of College Algebra during fall semesters, each section with about 150 students. (We did not tabulate the number of sections for spring semesters -- probably 10 or 12). It is safe to say that Whitcomb has been teaching from two to three times as many students as almost any other person in the department. In the years from 1972-1980 he has taught over 2500
students just in his algebra classes, plus many more in his other courses. We can find departmental total enrollment figures only as far back as 1923-24 when the department consisted of 3 full-time teachers. The staff continued to be the same size until 1929-30 when it increased to four full-time teachers, and stayed about that size until 1946-47. Each year since 1972 Whitcomb has taught approximately the same number of students as the entire department taught in any one year since the University was founded up until 1946-47 (usually more).

John is well-informed, articulate and when he has something to say he does not mince words. Everyone respects his opinions at department meetings and no one is ever in doubt about what he means. He is generous with his time and energy in helping others.

John has been Regional Exam Coordinator for North Dakota for the Mathematical Association of America Annual High School Mathematics Examination (except for one year) since 1969, and for this he received a Service Award in 1981 at the North Central Section meeting of the M.A.A. at Mankato, Minnesota. He helped organize the North Dakota Council of Teachers of Mathematics, was treasurer for 4 years and President of NDCTM (1978-79). He now is Newsletter Editor for NDCTM. He has served as treasurer of Phi Delta Kappa (UND Chapter) since 1962 and treasurer of the UND Chapter of the North Dakota Higher Education Association since 1974. He received a Service Key from Phi Delta Kappa in 1981.

John and his wife, Beverly live on 28th Avenue South. After reading about all of his activities, we wondered whether John has time for any hobbies, but he does: singing in the Church Choir and reading.

By 1964-65 when Nelson was Chairman, new courses offered were:

<table>
<thead>
<tr>
<th>Math 151-152</th>
<th>Algebraic Structures of the Number System</th>
</tr>
</thead>
<tbody>
<tr>
<td>211-212-213</td>
<td>Analytic Geometry and Calculus</td>
</tr>
<tr>
<td>431</td>
<td>Advanced Calculus I</td>
</tr>
<tr>
<td>432</td>
<td>Advanced Calculus II</td>
</tr>
<tr>
<td>435</td>
<td>Theory of Numbers</td>
</tr>
<tr>
<td>440</td>
<td>Theory of Sets</td>
</tr>
<tr>
<td>519-520</td>
<td>Groups, Rings and Fields</td>
</tr>
</tbody>
</table>

The math major now required 30 hours beyond trigonometry.

Ronald C. Bzoch was named Professor and Chairman in 1966, a position he still holds. Bzoch took over after Nelson had served very ably as Acting Chairman (1964-66). Bzoch earned his undergraduate degree at DePaul University (1953) and his PhD at Illinois Institute of Technology (1957), with specialization in Stieltjes Integral. He won an Outstanding Teacher Award in 1969. Ron has been a visiting lecturer for MAA and has made many trips to area high schools. He currently serves on the Consultants Bureau of MAA. He spent 6 years in the U.S. Army Reserves.

The department experienced a change under Chairmen Nelson and Bzoch. For the first time ever, the department functioned in a democratic way. People on the staff were encouraged to provide input before important decisions were made.
During the "Bzoch years", business of the department has been conducted in a casual and informal way. A feeling of cordiality and camaraderie in interstaff relationships has generally prevailed. This has carried over into the classroom where the relationships between instructor and pupil have become less formal. It used to be coat and tie for the instructor; now such dress is the exception.

One of the good things Ron did was to hire Phyllis Hellem as full-time secretary on July 1, 1967. Phyllis stayed with us until February 1, 1982. Probably no department at UND ever has had a more efficient, pleasant and helpful secretary. She often was swamped with work during final exam week when she would get requests such as: "Could you type up and run off 35 copies of this exam? I need it by 1:00 o'clock. I know I'm a little late about getting this to you." (It was 11:45 and her lunch break was supposed to be from 12:00 to 1:00). Phyllis knew where to find anything in the files, and she knew how the University machinery worked so that she could expedite department business.

We were very lucky again. The department now has a new and excellent secretary, Dulcie Hill, who succeeded Phyllis.

During Bzoch's tenure as Chairman, the department has conducted self-studies during which the missions of the department were enunciated and defined. By-laws for the department were written and distributed; an "Executive Committee" was created (to consist of 3 members with staggered terms of office). Provision also was made in the by-laws for monthly departmental meetings.

Shair Ahmad, Alvin Horne and Edmund Anderson served in the department in the 1960's. Shair served from 1964-67, and then left to get his PhD at Case Western Reserve University. Horne was instructor 1964-67, having gotten his Masters Degree at UND in 1967. Ed Anderson was assistant professor 1967-68, with a PhD from Louisiana State University in 1967 and specialization in "Decompositions of E^3."

The department moved from Merrifield Hall to the new Witmer Hall in the summer of 1968, where it is now located. The facilities are much better here -- the carpeted offices are clustered pretty much in one area around the main office which the secretary occupies.

By the late 1960's some of the new courses offered were:

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<tr>
<th>Math 110</th>
<th>Elementary Concepts of Mathematics</th>
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<tr>
<td>153</td>
<td>Foundations of Geometry</td>
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<td>409-410</td>
<td>Geometry</td>
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<tr>
<td>422</td>
<td>Statistical Theory II</td>
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<tr>
<td>423-424</td>
<td>Foundations of Mathematics (for the NSF Science Institute)</td>
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<tr>
<td>471</td>
<td>Introduction to Complex Variables</td>
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<td>501</td>
<td>Independent Studies in Mathematics</td>
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<td>509-510</td>
<td>Topics in Mathematics</td>
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<td>515-516</td>
<td>Applied Mathematics</td>
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<tr>
<td>521-522</td>
<td>General Topology</td>
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</table>

Merit W. Hudgins (Masters Degree at LSU) was Instructor 1966-67, Gary Sukut served as Instructor 1966-67 and Walter E. S. Will (M.S. at UND 1966), was an Instructor 1966-68. Willis Bourque taught in the department (Assistant Pro-
fessor) 1968-69, Peter Willyard (M.S. from UND 1967) was an Instructor 1967-69, Ronald Stegmann (Masters from UND) served as Instructor 1968-70, and Barbara Toles (Masters at Atlanta University) taught as an Instructor 1968-70.

Computer Science became a part of the Math Department in 1969. It was created by Gene Kemper, John Dixon (Professor of Electrical Engineering) and Conrad Dietz (Director of the Computer Center). They put together a two-year program and Richard Johnson was hired as Director. Later, Computer Science became a separate department in itself.

On Founders Day, 1976, the Mathematics Department was presented with the McDermott Award for Excellence in Teaching and Service. The Bzoch years have attracted many excellent new PhD's to the department, whose names will be mentioned.

Ron and his wife, Ann, reside at their home on Boyd Drive. Ron's hobbies include fishing and cooking. The math faculty has been entertained at the Bzoch's home, so they have had a chance to sample some of Ron's favorite recipes. Ann is a gracious hostess; it is not known whether she "volunteers" to wash up all the pots and pans used by the master chef or not.

James Elliott (Masters Degree at UND) was Instructor 1969-72, Kathryn Pope (Masters at UND) served as Instructor 1969-70, Jerry Grev and Steven Hample (both Masters Degrees at UND) taught as Instructors 1970-71.

David J. Uherka joined our staff in 1969. He got his bachelors degree at the South Dakota School of Mines in 1960 and his PhD from the University of Utah in 1964 with specialization in Analysis. He served in the U.S. Army. At the time of this writing, Dave is on leave at the Argonne National Laboratory, Illinois.

Uherka is well known to be a first class teacher and students file in and out of his office day after day, an indication that he motivates them to do some work. Dave is highly regarded by his colleagues both in the department and campus-wide. This is evidenced by the fact that he is frequently called upon to serve the University in a variety of ways, including heavy committee responsibilities.

Dave would be a good fellow to have around as this history is being composed. He has a way with words, and with economical use of the English Language, he can express his ideas with clarity, brevity, and usually a touch of dry humor. He is about the best writer and one of the best stand-up comics in the department.

Dave and his wife, Dorothy, live on 10th Avenue North. Dave's main hobby is golfing, and he gets out on the course as often as he can. He also enjoys woodworking and gardening.

Glenn R. Prigge also arrived here in 1969. His career at UND spans the years 1969-71 and 1974-. He has the rank of Professor. He received his bachelors degree at UND in 1963 and his doctorate at the University of Minnesota in 1974, where he specialized in the Preparation of the Elementary School Teacher.
Prigge’s excellent teaching ability is confirmed by the fact that he received an Outstanding Teacher Award in 1976 on Founders Day. He also was presented with the Phi Delta Kappa Breitwieser-Cushman Award in 1979. He was President of NDCTM (North Dakota Council of Teachers of Mathematics) 1969-70. He created the course Math 102 (Intermediate Algebra) and got it going in 1976-77.

Glenn is a prolific writer—he has written 14 books and 37 articles, all of which have been published. He hails from Drayton, North Dakota, where he has farming interests and he spends many long days working in the fields during the summer. He and his wife, Lila, also operate a thriving business from their home where a line of merchandise is retailed and wholesaled.

Glenn is hard-working and outspoken. His enthusiasm in his teaching brushes off onto his students; he is able to motivate them and bring out the best in them. Glenn is an extrovert in the best sense of the word—good-natured, helpful and friendly. He is well-informed on many things and is an excellent conversationalist. His optimism is good for the morale of the whole department.

Glenn and his wife, Lila, reside on North 39th Street. Lila teaches Business and Vocational Education at UND. She’s from Gardar, North Dakota (a small town near Milton). Glenn has lots of hobbies: water skiing, snow-skiing, racquet-ball, golf and farming.

Jerry M. Metzger came to the department in 1970. He got his undergraduate degree at the University of Connecticut in 1965 and his PhD at the same University in 1970 (the 4th PhD ever from U of Conn in Math), with specialization in Topology, and now holds the rank of Associate Professor.

Jerry is an excellent and thorough teacher, and he expects his students to do more than just learn to manipulate formulas. He expects them to think, and to solve real problems. He is generous with his time in helping the ones who ask for help.

Jerry and his wife, Diane, live on 2nd Avenue North. Jerry has a variety of hobbies: chess, radio-controlled model airplane flying, working crossword puzzles, music listening and darts.

In 1970-71 the following new courses were offered:

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<th>Course Code</th>
<th>Course Title</th>
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<td>Math 463</td>
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<td>Real Analysis</td>
</tr>
<tr>
<td>475-476</td>
<td>Foundations of Mathematics</td>
</tr>
<tr>
<td>491-492</td>
<td>Reading Course in Mathematics</td>
</tr>
</tbody>
</table>

Michael B. Gregory came to UND in 1971. He got his bachelors degree at the University of Connecticut in 1966 and his PhD at the same place in 1971, with specialization in Harmonic Analysis. He holds the rank of Associate Professor.

Gregory was presented with the Outstanding Teacher Award in 1977, a well-deserved tribute to his excellence as a classroom teacher. Mike’s keen interest in mathematics and his enthusiasm rub off on his students and the result at the end of a semester is a group of hard working students who are well prepared for the next course.
Mike produces a radio program featuring bluegrass music which is aired on radio station KFJM every Saturday 2:30-4:00.

Mike and his wife, Janet, reside on 10th Avenue North. Janet teaches Home Economics and Nutrition at UND. Mike's hobbies include running, stamp collecting, mandolin, fiddle, and guitar. Mike plays a "mean" mandolin.

Joseph Guzek (Masters at UND) served as Instructor 1971-73, and Janice Votava was Instructor 1973-74.

Edmon L. Adams taught his first classes at UND in 1976. He got his bachelors degree at Metropolitan State College in Denver in 1969 and his PhD at the University of Denver in 1975, with emphasis in Applied Mathematics. He is now an Associate Professor.

In 1979 Adams, along with Nelson, Uherka, Kemper and Winger, developed an Applied Mathematics Major, with emphasis either in Numerical Analysis or in Statistics. Adams and Prigge, working together in the summer of 1978, developed a Modular Approach to Teaching Intermediate Algebra (Math 102), with PSI (Personalized System Instruction). The PSI instruction began in 1979-80.

Enrollment in the math department first surpassed 2000 (2114) in 1976-77, but we can give Ed only part of the credit for this. Ed has a keen interest in Freshman mathematics education (especially Intermediate Algebra), even though his training qualifies him as an expert in applied mathematics.

Ed and his wife, Lucy, live on South 20th Street. Ed's hobbies include model airplane flying, fishing and skiing.

All the persons listed in this paragraph have held or now hold rank of Lecturer Part-time. Judy Hagle was here 1977-78. Susan Crawford (Masters from UND), an exceptionally capable teacher, served 1977-78. Anita Lesmeister (Masters UND) began teaching in 1977 and is still doing an excellent job for us. She has been in charge of many "large" (150-200 students) sections of College Algebra and is popular with her students. Frank Ringwelski taught here 1978-79. Richard Walker performed capably for us 1978-81, when we lost him to the Computer Science Department. Karen Brook taught for us 1978-82; Tim Pennings, 1981-82.

Stephen Carlson joined the department in 1981 as Assistant Professor. He completed his undergraduate work at the University of Kansas in 1969 and got his PhD at the same University in 1978, with specialization in Topology. He served in the U.S. Army 1969-71. Already he has won high respect from his colleagues and students.

Steve and his wife, Dawn, live on Reeves Drive. His hobbies are stamp collecting and jazz music listening.

We will list here only the current graduate teaching assistants: Keven Dockter, Geraldine Dunnigan, Lloyd Olson and Michele Rubright. Denise Blecha will be in charge of the Math Lab 1982-83. We are sorry that space will not permit inclusion of the names of all G.T.A.'s who have ever served this department, but their contributions as teachers have played an essential part in the mathematics department. They have gone on to achieve success in their chosen careers since earning their masters degrees.
Walfredo Javier will join the department in the fall of 1982. He is a statistician, with a PhD from Bowling Green University (1981).

Good teaching always has been the primary concern of this department. The faculty generally has taken a personal interest in the students, and has tried to be well-prepared, and fair and honest with them. Recognition must go to the thousands of undergraduate and graduate students we have taught. A great many of them went on to distinguished careers in mathematics, engineering, business and many other professions.

Mathematics has survived for 100 years at UND and its vital signs are still stable.
MATHEMATICS FACULTY - 1884-1982

(When indicating the time period served in the department by each individual, the first year is the time when he first taught here and the second figure is the year when he last taught here. No attempt is made to include intervening time periods when the person may have been gone.)

-A-
Adams, Edmon L. (1976 - )
Ahmad, Shair (1964 - 67)
Albright, Frank (1897 - 98)
Anderson, Edmund (1967 - 68)
Andreasen, Gordon (1946 - 47) (part-time)
Andrew, Thurman (1925 - 27)
Axe, Ruth (late 1950's and 1960's)

-B-
Balch, Flora E. (1910 - 14)
Barnebey, Merrill (early 1960's)
Barrett, William (1946 - 47) (part-time)
Bibb, Samuel F. (1923 - 25)
Bourque, Willis (1968 - 69)
Broady, Ms. (between 1910 and 1920)
Brook, Karen (1978 - 82)
Burner, Blair (late 1950's)
Bzoch, Ronald C. (1966 - )

-C-
Carlson, Stephan (1981 - )
Castner, R. F. (1920 - 23)
Cersonsky, Harold (1946 - 47) (part-time)
Chandler, Elwyn F. (1898 - 1914)
Chapman, Robert (1946 - 47) (part-time)
Crawford, Susan (1977 - 78) Lecturer (part-time)

-E-
Estes, Ludovic (1888 - 98)

-G-
Gill, Larry (1942 - 44)
Goplen, Arman (late 1950's)
Greenlee, Warren (1946 - 47) (part-time)
Gregory, Michael B. (1971 - )
Guzek, Joseph (1971 - 73)
Hagle, Judy (1977 - 78) Lecturer (part-time)
Hankerson, Kenneth L. (1940 - 77)
Hatfield, Charles (1960 - 64)
Hellem, Phyllis (1967 - 82) (Secretary)
Hill, Dulcie (1982 - ) (Secretary)
Hitchcock, Raymond Royce (1910 - 37)
Horne, Alvin (1964 - 67)
Hosto, Avise Wright (1919 - 20)
Hudgins, Merit W. (1966 - 67)

Javier, Walfredo (1982 - )
Johnson, Richard (1969 - 75) (Computer Science)

Kemper, Gene A. (1956 - 81)

Lardy, Lawrence (early 1960's)
Lawler, George (1946 - 47) (part-time)
Leith, J. Douglas (1920 - 37)
Lesmeister, Anita (1977 - ) Lecturer (part-time)
Londergau, Johanna (later Mrs. James S. Lamb) (between 1915 and 1920)
Lyche, Walter J. (1953 - 56)

MacKichan, Ruth, J. (1949 - 74)
Mauland, Lyle E. (1959 - )
Mason, Sewell L. (1928 - 50)
McBride, Woodrow (1946 - 81)
Menzel, Richard (early 1960's)
Metzger, Jerry M. (1970 - )
Montgomery, Henry (1884 - 85)

Nelson, Edward O. (1950 - )

Orser, Lloyd (1946 - 47) (part-time)
Peterson, John C. (1946 - 57)
Phelps, Dean (1961 - 64)
Prigge, Glenn R. (1969 - )

Richards, Mansell (1921 - 22)
Ringwelski, Frank (1978 - 79)
Robinson, Thomas J. (1958 - )
Rognlie, Dale (late 1950's)
Rognlie, Philip Arnold (1934 - 75)
Rollefson, Carl J. (1898 - 1903)
Rue, James S. (1955 - )
Rysgaard, Jens M. (1904 - 10)

Saastad, Arthur (1937 - 40)
Scholz, John (1946 - 47) (part-time)
Simonson, Simon (1948 - 53)
Staley, Raymond Coffey (1927 - 59)
Stegmann, Ronald (1968 - 70)
Stonestrom, Donald (1946 - 47) (part-time)
Sukut, Gary (1966 - 67)
Swandby, Earl (1946 - 47) (part-time)

Toles, Barbara (1968 - 70)

Uherka, David J. (1969 - )

Votava, Janice (1973 - 74)
Walker, Richard (1978 - 81)
Westgate, Christine (1947 - 48)
Whitcomb, John L. (1960 - )
Whitford, Leslie E. (1950's)
Will, Walter E. S. (1966 - 68)
Willis, Irving (1922 - 23)
Willyard, Peter (1967 - 69)
Winger, Milton E. (1956 - )
Withnell, Melvin (late 1950's)
Woodworth, Horace B. (1885 - 88)
### SOME ENROLLMENT STATISTICS
#### UND MATHEMATICS DEPARTMENT (1923 - 1982)

#### Fall Semester Enrollment Figures

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UND MATHEMATICS DEPARTMENT - MASTERS DEGREE RECIPIENTS

ALASKA

Philip R. Myerchin (1968)
717 Canyon Road
Ketchikan, AK 99901

ARIZONA

Cecil G. Huncovsky (1958)
1560 Mission Drive
Douglas, AZ 85607

Harlan D. Nelson (1950)
Arizona State U., Math Dept
Tempe, AZ

CALIFORNIA

Les Bender (1973)
Hughes Aircraft
Torrence, CA 90503

Hans S. Berg (1950)
12560 Woodley Ave.
Granada Hills, CA 91344

John Dauc savage (1973)
1811 Marshall Field
Redondo Beach, CA 90277

John H. Gissel (1950)
18971 Antiach
Irvine, CA 92644

Lando L. Goertzen (1964)
337 Calle Higuera
Camarillo, CA 93010

Joe Guzek (1971)
22309 Madison St.
Torrance, CA 90503

Eldon J. Halda (1958)
P.O. Box 1620
LaJolla, CA 92037

Donald B. Hawes (1951)
345 Wisconsin #206
Long Beach, CA 90814

32
Florence (Kroll) Trybus (1930)
637 Towle Way
Palo Alto, CA 94503

Louis I. Larson (1959)
6101 Sydney Drive
Huntington Beach, CA

Kenneth H. Olson (1953)
4361 Valle Drive
LaMesa, CA

Gary W. Parfit (1965)
2734 Las Gallinas Ave.
San Rafael, CA 94903

Mrs. Mary K. Wennerstrom (1961)
531 Reed Drive
Davis, CA

COLORADO

Duane M. Johnson (1956)
9911 Isabelle Road
Lafayette, CO 80026

DELAWARE

Charles Sarabun (1973)
16 A Anthony Circle
Newark, DE 19711

DISTRICT OF COLUMBIA

Louise M. Spriggs (1931)
Washington, DC
(Deceased)

HAWAII

Tom Ramsey
University of Hawaii
Honolulu, HA

IDAHO

Roger L. Higdem (1959)
1910 South 20th
Caldwell, ID 83605

Howard A. Larson (1962)
1862 12th Street
Idaho Falls, ID 83401
ILLINOIS

Craig L. Gjerde (1968)
2103 West White Street #132
Champaign, IL 61820

George W. Haas (1949)
347 Phippips Ave.
Glen Ellyn, IL

Ronald Rodakowski (1971)
4835 Creekview Road
Rockford, IL 61105

Gary F. Sundberg (1970)
594 Saratoga
Chicago Heights, IL 60411

Thomas P. Wiggen (1969)
Northern Illinois Univ.
Math Dept
DeKalb, IL 60115

INDIANA

Hugh P. Ackert (1937)
1249 Woodward Ave.
South Bend, IN 46616

Allison Olson (1965)
Indianapolis, IN

Verne R. Sanford (1959)
1500 Wood St.
Valparaiso, IN 46383

IOWA

James Gaustad (1980)
Rockwell International
Collins Divisions
Cedar Rapids, IA 52406

Richard A. Hansen (1966)
516 Fiarview
Muscatine, IA 52761

Walter E. Will (1966)
Luther College
Decorah, IA
LOUISIANA

Alvin E. Horne (1966)
2935 Alaska St.
Baton Rouge, LA 70802
(deceased)

David S. Lenaburg (1967)
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GREAT BRITAIN

Robert H. Paulsen (1966)
Melden, England
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<td>3/16/73</td>
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<td>Ralph E. Lewis</td>
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<td>Len Shapiro</td>
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<td>Richard Forseth</td>
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Walter E. Mientka, University of Nebraska, Lincoln 3/22/78
Sha-ping C. Hodgson, Lafayette College, Easton, PA 3/31/80
Herbert Solomon, Stanford University, California 4/22/82