A Centennial History

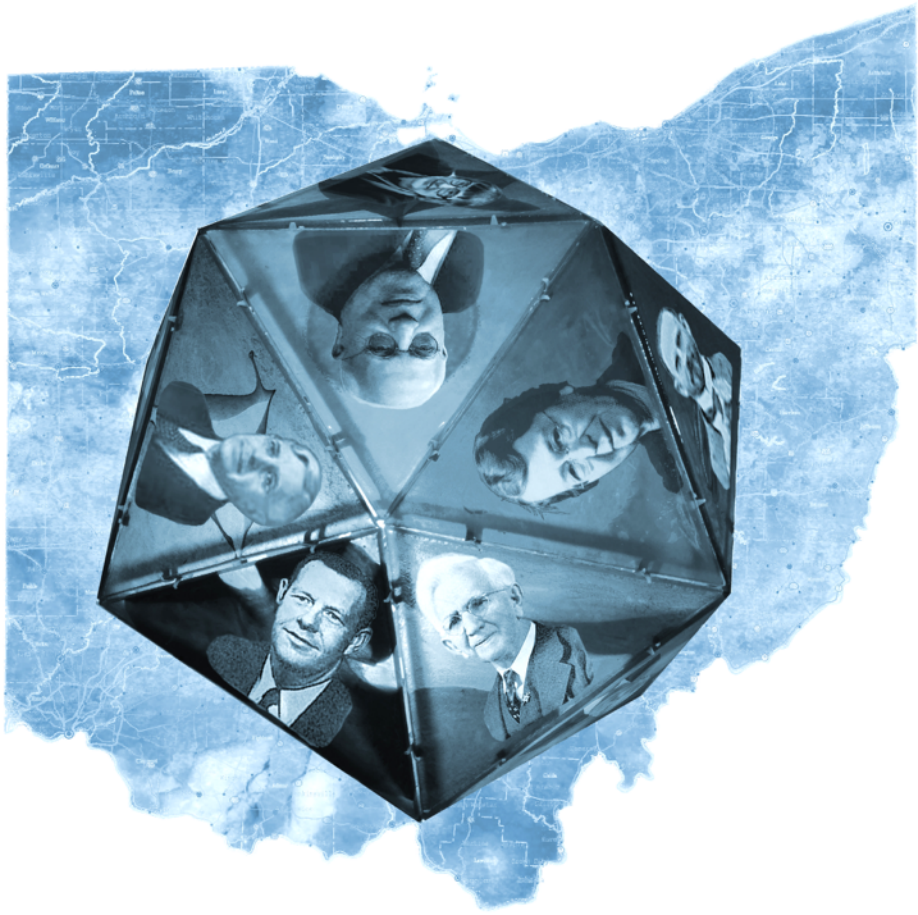
of the

Ohio Section

of the

Mathematical Association of America.

1915-2015



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David E. Kullman, Editor

Front cover: Clockwise, Front from top: C. N. Moore, Grace Bareis,
B. F. Finkel, Foster Brooks, W. D. Cairns.
Right side: R. B. Allen,. Top side Marion Wetsel.
See pages 1- 40, 103-118

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Back Cover - Photo of Second Section Meeting, 1917

Preface

When *The Ohio Section: 1915-1990* was published twenty-five years ago, the centennial of the Mathematical Association of America and this Section still seemed a long way off. In 2006 the Section President, Tom Dence, asked a few of us to begin thinking about plans for the centennial, and a Centennial Committee was formed the following year. One of the first items on its agenda was updating the 75-year history.

In the meantime, the committee decided to produce a series of Centennial Notes to appear in the *Ohio Focus* newsletter, accompanied by Centennial Minutes to be presented at each spring and fall meeting of the Section. Centennial Note #1, "It All Started in Ohio," appeared in April 2010. Altogether twelve such notes and minutes were prepared and presented – mostly by David Kullman, the committee chair.

While this was going on, Tom Hern was continually updating the Appendices and posting them on the Ohio Section website; Tom Dence was producing a variety of tchotchkes with the message, "The Centennial Is Coming," to be given to attendees at each spring and fall meeting; and Al Stickney was encouraging faculty at colleges and universities throughout the state to write histories of the mathematics departments at their own institutions. Danny Otero, wearing many hats as Ohio Section Archivist, member of the Centennial Committee, and Section President, arranged "Archive Dives" at some of the section meetings. The Ohio Section officers, program committee chairs, and local arrangements chairs, have also been very supportive of the centennial project.

Although the official centennial date of the Section is December 31, 2015, the 100th Annual Meeting will be held in the spring of 2016. (See the chapter on "Meetings for an explanation.) This Centennial Meeting will take place at Ohio Northern University, where Benjamin F. Finkel, founder of *The American Mathematical Monthly*, earned his Bachelor's and Master's degrees.

Preface

For the first 65 years (1916-1981) reports of section meetings were published in *The American Mathematical Monthly*, the official journal of the MAA. We are indebted to early secretary-treasurers, including George Armstrong, Rufus Crane, and Foster Brooks, who compiled these reports. Brooks, who was the Ohio Section Secretary-Treasurer for a quarter-century (1947-1972), prepared a 50-year history of the Section in 1967. Since 1981 we have relied on the *Ohio Section Newsletter/Ohio Focus* and printed programs of the meetings for detailed information about speakers and activities.

Credit for this volume must be shared by a number of people. Fred Rickey wrote the first chapter. David Kullman was largely responsible for preparing final drafts of the other chapters and served as the editor-in-chief. Tom Hern has kept the appendices up to date for the past 25 years, added the photos, formatted the pages, and made arrangements for printing. David Meel designed the cover. Will Hahn, who died shortly before this project got underway, was a principal author of the 75-year history, and his work served as a starting point for updates of several of the chapters.

Thank you to everyone who has played a role in celebrating the Ohio Section Centennial!

David Kullman

Ohio Section Centennial committee:

David Kullman (Miami University), Chair
Thomas Dence (Ashland University)
Thomas Hern (Bowling Green State University)
Daniel Otero (Xavier University)
V. Frederick Rickey (Bowling Green State University and United States Military Academy)
Alan Stickney (Wittenberg University)

Foreword

After years of preparation, the celebration of the MAA Centennial — and our Ohio Section's Centennial as well — is finally upon us. (As Section Archivist, I joined the Centennial Committee at its inception in 2008, so we've been making plans to mark this anniversary for seven years now.) This year, as Section President, my attention in these last months has been focused all the more on this commemoration. This updated History of the Ohio Section is one of the numerous products of these efforts to celebrate this moment in the history of the organization, highlighting how it has matured, thrived, and been a useful resource to its members for 100 years now.

Back in 1902 the great pioneer of American mathematics, University of Chicago's E.H. Moore (an Ohio native and graduate of Cincinnati's Woodward High School), who had recently formed the germ of what was to become the Chicago Section of the American Mathematical Society, boldly challenged the members of that Society in his retiring address as AMS President:

> Do you not feel with me that the American Mathematical Society, as the organic representative of the highest interests of mathematics in this country, … enlarging its membership by the introduction of a large body of the strongest teachers of mathematics in the secondary schools, should give continuous attention to the question of the improvement of education in mathematics, in institutions of all grades?

This question was famously pressed a few years later when, in 1914, H.E. Slaught, another University of Chicago professor, urged the formation of a committee "to consider the general relation of the Society to the promotion of teaching, especially in the collegiate field." Five men were appointed to this group: T.S. Fiske (Columbia), H.B. Fine (Princeton), W.F. Osgood (Harvard), and

E.R. Hedrick (Missouri), along with Slaught. This committee's most significant action was to decide whether the AMS ought to pick up the publication of *The American Mathematical Monthly*. This issue had arisen when B.F. Finkel, professor at Drury College in Missouri and the *Monthly*'s first editor, turned to Slaught and Hedrick for help with carrying the journal forward when he ran into financial difficulties with his printing company in Missouri. In a momentous 3-2 vote, the committee decided *against* committing the resources of the AMS to the *Monthly*. (What might have happened if that vote had gone the other way, as it easily could have done?!)

This refusal to assist the *Monthly* helped to spur fresh interest in building something new that would more clearly promote collegiate mathematics. Soon thereafter, Slaught solicited interest among subscribers to the *Monthly* in a plan for a new organization that would support teachers of college-level mathematics. From the responses he received he assembled names of 450 individuals who were invited to attend an organizational session that followed a meeting of the AAAS at The Ohio State University in late December 1915. There in Page Hall, in a three-hour session on the last day of the year, Hedrick presided over an assembly of over 100 participants at which the new Mathematical Association of America was formed, led by an elected Council of twelve members. Half of these council members represented midwestern schools, including Hedrick and Finkel from Missouri, W. D. Cairns, professor at Oberlin College here in Ohio, and J. N. van der Vries from the University of Kansas. In fact, before that meeting on December 31, 1915, ended, delegations from these three states had already applied for charters to become the first regional sections of the Association. Within a year, sections were also established in Iowa and Indiana. (For more on this engaging history, see below Fred Rickey's chapter "B. F. Finkel, the *Monthly*, and the MAA".)

For me, the Ohio Section represents the personal and friendly face of the larger MAA organization, which might otherwise be nothing

but a clearinghouse for periodicals, books, and other written and online resources for college teachers and students of mathematics. With the benefit of two annual Section meetings within a few hours' drive, mathematics faculty who live and work in Ohio (and Cabell County, WV) have an opportunity to come together regularly to meet with like-minded colleagues from other colleges and universities to discuss the learning and teaching of mathematics at the post-secondary level. We also renew longstanding friendships and make new acquaintances as well; in these interactions we debate problems within the profession, share ideas and strategies for teaching, and are often delighted to learn new mathematics as well. Our Section meetings, the life's blood of the organization, help members to become re-inspired and re-charged to return to their classrooms. I can only hope that in another hundred years our successors will be able to find the Section providing similar support to its members, in whatever form it might take then.

I'm grateful to David Kullman (Miami University), Tom Hern (Bowling Green State University) and erstwhile Ohioan Fred Rickey (US Military Academy) for their hard work in expanding and re-editing the 75-Year History of the Ohio Section published in 1990. Their longstanding involvement and service to the Section made them ideally qualified to edit this volume. I also commend the other members of the Section Centennial Committee, Al Stickney (Wittenberg University), Tom Dence (Ashland University) who have assisted the Section in preparing for our Centennial.

Danny Otero
Section President
December, 2015

B. F. Finkel, the *Monthly*, and the MAA

It all started in Ohio. Not in Columbus, but on a farm near East Ringgold, about 40 miles SSE of Columbus.[1] Benjamin Franklin Finkel was born there on July 5, 1865. He attended the Ridge country school in Fairfield County, where "disorder reigned supreme" until a new teacher, R. V. Allen, used his muscle to subdue the older boys. Later, when Finkel was fifteen, he encountered a "very superior country school teacher," George W. Bates, who had more influence on him than anyone else besides his mother. "Though small in stature and crippled in limb," Bates was a man of courage, honesty, firmness, and judgment, who strove to instill these character traits in his students. It was at this time that Finkel's interest in mathematics was aroused. A problem had been making the rounds, and Finkel's older half-brother[2] heard it at the village store, and brought it home:

> There is a ball 12 feet in diameter on top of a pole 60 feet high. On the ball stands a man whose eye is six feet above the ball. How much ground beneath the ball is invisible to him?

---

[1] *Who was Who in America*, vol. 2, 1943-1950, indicates that the surname was originally Finckel. This note has Finkel's positions, dates, and honorary societies. Some sources cite his birthplace as Amanda, Ohio. But this is the township where East Ringgold is; it is in Fairfax County.

[2] His mother, Louisa Frederica Stickle (1829-1926), was born in Württemberg, Germany, and married a Mr. Kibler or Kebler. They immigrated to America about 1853. When he died, she married John Philip Finkel (1820-1898), a farmer. The half-brother, Lewis Kebler, was born in 1858 or 1859. Benjamin Franklin Finkel was the second of their five children. Data from the 1880 US Census.

Finkel asked his teacher, Bates, about the problem, who explained that it might be solved by geometry. But since Finkel saw neither an algebra nor a geometry book till he was seventeen, this advice was of little help. He had studied *Ray's Third Part Arithmetic*,[3] so attempted to solve it using the rules of mensuration in that book. It was several years before he succeeded, but a problem solver was born. In 1931, Finkel reminisced that

> this perfectly senseless problem, with no value whatsoever from the standpoint of modern educational theory, nevertheless was the borax in the mortar which retarded mental hardening until a time arrived when other elements could play their part in the active materials of a life, and it seems to me that such a result should be the test by which the value of a problem should be gauged. [Finkel, 1931, p. 307][4]

Finkel at Ohio Northern University, 1883-1884

In 1871, Henry Solomon Lehr founded Northwest Ohio Normal in Ada, Ohio, which the locals affectionately called "Old Normal." In 1875, North-West Ohio Normal School in Fostoria merged with it. In 1885, the trustees renamed the school Ohio Normal University and Commercial College. Financial difficulties forced Lehr to sell the school to the Methodist Church in 1899, and they renamed it Ohio Normal University. It acquired its current name — Ohio Northern University — in 1903. Finkel writes [Finkel 1931, 307] that he suggested this name so we shall just use the name Ohio Northern University.

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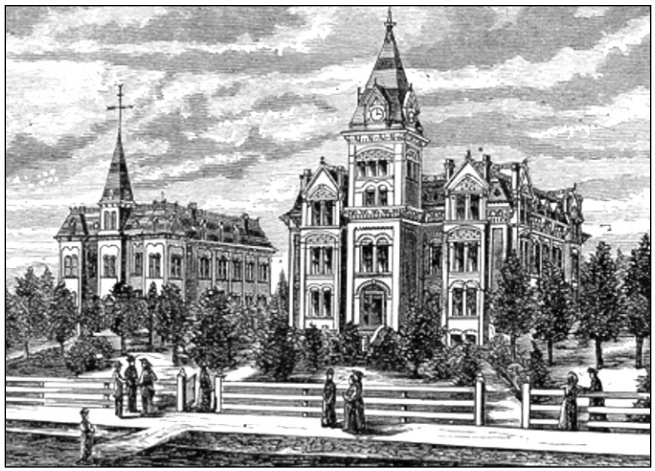
[3] We do not know which edition Finkel used. For information about Ray, see David E. Kullman, "Joseph Ray The McGuffey of Mathematics," *Ohio Journal of School Mathematics*, No. 38 (1998), 5-10.

[4] In 1931, when Finkel was 66 years old, the program committee invited him to speak at the annual MAA meeting in Cleveland. This was published in the *Monthly* later that year as "The Human Aspect in the Early History of the American Mathematical Monthly" [*AMM*, 1931, 305-320]. It is this paper that is the source of much of what has been written about him. We will have occasion to cite this paper frequently as so we do so as, e.g., [Finkel 1931, xxx]. References to the *Monthly* will be cited in the format [*AMM*, year, pages]. To the year, add 7, and you will have the volume number mod 100.



ONU as pictured in the 1884-1885 *Catalog*.

At age eighteen — that would have been 1883 — Finkel left the county school to attend Ohio Northern University in Ada. From the *Annual Catalog of the Teachers and Students of the North-Western Normal School and Business College for the School Year 1882-83 and Announcements for 1883-84* we know what the first year courses were.

The "First Fall Term" of ten weeks ran from August 7, 1883 until October 12. It is likely that Finkel would have taken the Scientific Course rather than the Teachers' Course. If so, the courses were

Arithmetic, Practical	Ray[5]
Arithmetic, Mental	Stoddard[6]
English Grammar	Harvey
Elocution and Voice Culture	Kidd
Descriptive Geography	Electic
Drills – Penmanship and Letter-Writing	

[5] Joseph Ray (1807-1855), who was the author of numerous mathematical textbooks, started teaching at Woodward College in Cincinnati in 1831 (which became Woodward High School in 1851) and remained there for the rest of his life. This work is most likely the 1877 edition of *Ray's New Practical Arithmetic.* The popular "One Thousandth Edition" of *Ray's Practical Arithmetic: by Induction and Analysis*, appeared in 1857.

[6] John Fair Stoddard (1825-1873) was the author of several arithmetics that competed with those of Joseph Ray. The one used at Ohio Northern was probably an edition of his *American Intellectual Arithmetic*, first published in 1857.

The "Second Fall Term" of ten weeks involved

Elementary Algebra	Ray[7]
Analysis of Sentences	Green
Physical Geography	Houston
United States History	Electic
Elocution and Voice Culture	
Drills – Penmanship and Composition	

The "Winter Term" was also ten weeks, the courses were:

Arithmetic, Higher	Ray[8]
Physiology	Cutter
Natural Philosophy	Norton[9]
General History	Swinton
Algebra	Ray[10]
Drills – Composition and Debating	

The "Spring Term" was one week longer and consisted of:

Higher Arithmetic, completed	Ray
Higher Algebra	Ray[11]
Botany	Wood
Natural Philosophy, completed	Norton
Drills – Composition and Debating	

---

[7] *Ray's Algebra, Part First: on the analytic and inductive methods of instruction*, c1848. There is a copy of this work in the Ohio Northern University Library, but it is the only one of Ray's books that they currently hold with the word "Algebra" in the title.

[8] *Rays New Higher Arithmetic* (1880), which is a revision of *Rays Higher Arithmetic* (1855), is likely the textbook that was used.

[9] *The Elements of Natural Philosophy* (1870) by Sidney A. Norton is a profusely illustrated physics text that mentions an amazing number of topics with quite a few formulas, but no mathematical derivations. Although dated, it is a fine model for a course for the general student.

[10] *Ray's Algebra. Part Second: an analytical treatise, designed for high schools and colleges*, 1852.

[11] *Ray's New Higher Algebra: elements of algebra for colleges, schools, and private students*, 1866. (Due to the numerous editions and changes in the titles of Ray's books, the titles given in footnotes 5, 7, 8, 10 and 11 may not be correct.)

Finally, there was the eight-week “Normal Term” going from May 22, 1884 to July 18:

Review of Common Branches	
Higher Algebra	Ray
Parliamentary Law	Roberts
Rhetoricals	

Besides this list of courses taught during the first year, a list of Finkel's grades in the courses he took are preserved in the hand-written grade ledgers at Ohio Northern. We give them here in full:

Arithmetic Higher "B"	95
Arithmetic Higher "A"	88
Grammar	80
Geography	94
U.S. History	96
Physiology	97
Algebra Higher "B"	80
Algebra Higher "A"	98
Natural Philosophy	97
Zoology	100
Logic	95
Astronomy	99
Geometry	100
Trigonometry	99
Analytical Geometry	100
Calculus	99
Latin Grammar	91
Latin Reader	92

There are several differences between the intended curriculum in the catalog and the courses that Finkel actually took. The titles do not match up very well, but note that the catalog only included one year. Finkel took several courses that one would expect a good mathematics student to take that are not in the catalog, namely, geometry, analytic geometry, and calculus. This is a wonderful example of the "intended vs implemented vs achieved curriculum" that is a central idea in the work of Nerida Ellerton and Ken Clements, in, e.g., their *Abraham Lincoln's Cyphering Book and Ten Other Extraordinary Cyphering Books* (2004), page 7.

For the 1883-1884 school year, the individuals teaching mathematics were:

Mrs. Eva Sisson Maglott, A.M.	Mathematics, Latin and English Literature
Warren Darst, A.M.	Mathematics and Botany
H. E. Neff, B.S.	Mathematics and Natural Sciences
Mrs. Regina M. Dixon, B.S.	Arithmetic, Analysis, History, and Orthography
Josie Wood, B.S.	Mathematics and Latin

There are also some unnamed lecturers who "Will be the Best in the Field."

In the 1888-1889 college catalogue, the year Finkel received his B.S., only one mathematics teacher was listed, Mrs. Eva Sisson Maglott, affectionately known to the students as "Mother Maglott."[12] She began in 1881 and served as head of the mathematics department from 1884 to her death in 1916. Her husband, Frederik Maglott, was one of the founders of the school, a trustee, and also a professor of geography, German, Latin and Greek. They are commemorated in two stained glass windows in the ONU chapel. She applied for membership in the American Mathematical Society in 1894, and again in 1897, her application being tabled both times. Finally in 1911 she was elected a member[13].

Two of her students became well known mathematicians. One was, of course, Finkel. The other was Cassius Jackson Keyser (1862-1947), who earned a Ph.D. at Columbia in 1902 and remained there for 26 years. He had two doctoral students: Emil Post (the Polish-American logician) and Eric Temple Bell (well, you know who he is).

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[12] 1888-1889 college catalogue. *University Herald*, June 16, p. 1.

[13] James J. Tattersall, "The Mathematical Department of the Ohio Normal University Herald" (unpublished, written 2014), page 2.

A Mathematical Solution Book

After a year of college Finkel began teaching in rural schools while continuing work on his degrees. He taught first in Fostoria, Ohio, and later in Gibson, Tennessee (1889-1890). Then he became superintendent in North Lewisburg (1890-1891) and finally West Middleburg (1891-1892). On July 17, 1890, when he was just a few weeks older than 25, Finkel married a fellow student, Hanna Cokely, in Seneca County, Ohio.

During his years as teacher in Ohio, Finkel devoted his leisure time to solving and posing problems in a variety of periodicals which contained columns on mathematics, including the *Ohio Educational Monthly*, *The School Messenger*, the *Monthly* of Davenport, Iowa, the *Mathematical Magazine*, the *Mathematical Visitor*, and the *School Visitor*. Finkel awaited the arrival these magazines anxiously and was disappointed when they did not appear with regularity.

In 1887 he taught in a country school in Union County, Ohio and it was there that he began work on his *Mathematical Solution Book,* which was copyrighted in 1888.

It is difficult to imagine how a young man, who only studied algebra in his one year of college, and then with one year of teaching – clearly a scant mathematical education – could have compiled this 356 page book in one year, even if he did copy many problems from works listed in the four page bibliography of his sources at the end of the book.

The book was not published until 1893, a delay explained by the fact that his printer went bankrupt after composing 88 pages even after borrowing $200 from the author [Finkel 1931, 308]. Undoubtedly through self-study, Finkel learned a great deal of mathematics while awaiting publication of *A Mathematical Solution Book*. It contains a large number of difficult problems in arithmetic, geometry, algebra, Diophantine analysis, and there are scattered references to the calculus. It is likely that Finkel continued to

work on it for those five years, and there is internal evidence for this, for example: It is reported that William Hoover was elected to the London Mathematical Society in 1889 and to the New York Mathematical Society in 1890 (p. 338), that Henry Gunder was elected Professor of Pedagogy at Findlay College in 1890 (p. 311), and that Artemas Martin was elected a fellow of the AAAS in 1891 and was editor of *The Mathematical Messenger* in 1893 (p. 347).

Finkel's *Mathematical Solution Book* appeared in four editions, 1888, 1897, 1899, and 1902. R. F. Davis reviewed the fourth edition in the October 1903 volume of *The Mathematical Gazette*, a journal started the same year as the *Monthly.* Davis praises Finkel's care in preparing a largely error free book, which he finds "readable and instructive." A very positive review appeared in the *University Herald*, most likely written by Finkel himself [Tattersall, 7].

Not surprisingly, one of the problems in the book was the Man on the Ball (First edition, 1888, p. 393):

I. There is a ball 12 feet in diameter on top of a pole 60 feet high. On the ball stands a man whose eye is 6 feet above the ball; how much ground beneath the ball is invisible to him?

Construction.—Let BE be the pole, L the center of ball, and A the position of the man's eye. Draw AFC tangent to the ball at F and draw LF and BC. Then the triangle AFL is right-angled at F.

II.
1. 60 ft.$=BE$, the length of the pole.
2. 12 ft.$=ED$, the diameter of the ball, and
3. 6 ft.$=AD$, the height of the man's eye above the ball.
4. 12 ft.$=AD+DL=AL$. Now
5. $AF=\sqrt{(AL^2-LF^2)}$ $=\sqrt{(12^2-6^2)}=6\sqrt{3}$ ft. In the similar triangles ALF and ACB,
6. $AF:LF::AB:BC$, or $6\sqrt{3}$ ft. : 6 ft. : : (6 ft.$+$12 ft. $+$60 ft.), or 78 ft. : BC.
7. $\therefore BC=(6\times78)\div6\sqrt{3}=78\div\sqrt{3}=\frac{1}{2}\times78\sqrt{3}=26\sqrt{3}$ ft.
8. $\therefore \pi BC^2=\pi(26\sqrt{3})^2=6371.1498932$ sq. ft.=the area of the circle over which the man can not see.

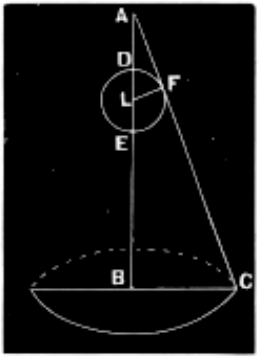


FIG. 68.

III. $\therefore$ 6371.1498932 sq. ft.=the area of the invisible ground beneath the ball.

Many of the problems in the *Solution Book* have a reference giving the source, but there is none here (and we have found none earlier than 1888). The solution of this problem is a good example of what Finkel calls the "Step Method" where the solution "takes up, in logical order, link by link, the chain of reasoning and arrives at the correct result" [Preface]. This technique is used throughout the *Solution Book*. There are many interesting things in the book. The attentive reader will note that our knowledge of the history of mathematics changes over time.

> The Greek letter π, was first used by Euler, to designate the ratio of the circumference to the diameter. [Second edition, 1897, p. 196]

This was the commonly held view until it was pointed out that William Jones had earlier introduced the symbol in his *Synopsis palmariorum matheseos* (1706). This is corrected in the fourth (1902) edition of Finkel's *A Mathematical Solution Book*, p. 506.

Finkel at Ohio Normal University, 1886-1888

The *Ohio Normal University Herald* started publication as a monthly on June 20, 1885 and a Mathematics Department was introduced in May 1888 with sixteen problems. It is likely that Finkel inserted them, for in the June issue the editor noted that Finkel had taken over the column "with the pleasure of his work as his compensation" [Tattersall, 4]. While a student there, and for several years afterwards, Finkel conducted a mathematical column in the *University Herald*. We shall quote just one problem that Finkel posed and solved. If you change the names and probabilities, it is fresh today:

> If in the campaign of 1884, Cleveland told the truth 3 out of 4 times, Blain 4 our of 5 times and St. John 5 out of 6 times, what is the probability of a statement being true that Blain and Cleveland affirmed and St. John denied? [*The University Herald*, 1885, pp. 389-390]

Kidder Institute, Kidder, Missouri, 1892-1895.

The Kidder Institute opened in 1884 in the defunct Thayer College whose abandoned building had been "given to the bats and the birds." The first principal was G. S. Ramsey. Most of the 120 boys

"took the common branches with extra hard training in Arithmetic, History and Grammar to prepare to teach."[14]

George Washington Shaw (1859-1932) was educated at Fostoria Academy in Ohio, where Finkel later taught, and then went to college at Ohio Wesleyan from 1884 to 1887 where he graduated with a Bachelor of Arts degree. Shaw completed the Classical Course, which placed an emphasis on the study of Greek and Latin. In 1890, the university awarded Shaw a Master of Arts *in cursu*, a degree given to alums who "maintained a good moral character" for three years after graduating and paid a fee of five dollars. This photo hung in the Kidder chapel before it was named the Shaw Memorial.

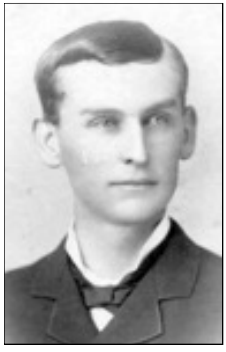
[14] Bertha Ellis Booth, *The First Days of Kidder – Caldwell County, Missouri,* n.d.

In 1887-1888 he was principal of the High School in Gibson, TN and then principal of the Fostoria Academy in 1888-1889. Then, in 1889, he became the principal of the Kidder Institute in Kidder, MO, and remained there until his death in 1932. He later received a D. Litt from Drury College. [*Missouri Historical Review*, 26 (1931), 321].

Finkel "became thoroughly discouraged and disheartened because of the dishonorable political methods used in securing positions in most of the city schools in Ohio," and so in 1892 joined his friend, G. W. Shaw, the Head of Kidder School where he often taught forty-five three-quarter-hour periods per week. (Later, at the college level, he only taught from nineteen to twenty-seven hours per week.) The Kidder School was free of the "petty politics so deadening to intellectual honesty and spiritual development," so Finkel was finally able to "ascend to the mountain heights of imagination and get glimpses of things unseen."

Starting a Journal for Mathematics Teachers

Finkel's variety of teaching experience made him keenly aware that the "mathematical teaching in our high schools and academies was very deplorable and even worse in the rural schools." Consequently he had "the ambition to publish a journal devoted solely to mathematics and suitable to the needs of teachers of mathematics in these schools."



Finkel secured the assistance of John M. Colaw[15] of Monterey, Virginia, whom he knew through his contributions to the *School Visitor*, to assist him as co-editor. Colaw was born in 1860 in Virginia, earned a BA in 1882, and a MA in 1885 from Dickinson College in Pennsylvania. While working on his MA he

[15] John D. Maxwell, "John Marvin Colaw: and the *American Mathematical Monthly*," *AMM*, 1993, 117-118.

took a one-year break to study law at the University of Virginia, being admitted to the Virginia Bar in 1886. Finkel had never met Colaw, but was impressed with his contributions to the *School Visitor* [*AMM*, 1957, 3]. They were both subscribers and avid contributors.

The *School Visitor; An Elementary Monthly Journal Devoted to Difficult Work in Common School Studies*, was published by Professor John S. Royer (1845-1915)[16] in several Ohio cities beginning in 1880. After 15 years, Finkel wrote, it was discontinued "owing to the nervous strain it caused and the tax it levied on the vital force of its editor" and called it "the most practical and stimulating periodical that the ordinary teacher can read" [*AMM*, 1902, 276].

In the fall of 1893, Finkel decided to give his journal an ambitious and prophetic title, *The American Mathematical Monthly.*

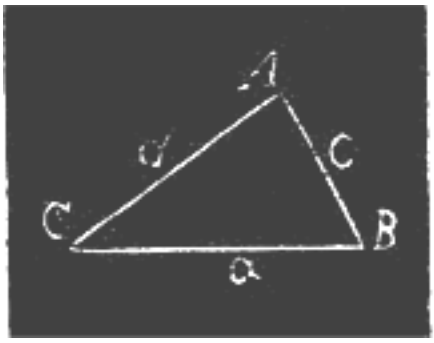
Finkel and Colaw then began writing high school teachers of mathematics and professors in the colleges and universities in order to solicit subscribers and contributions (none of these letters have been located). The first response came from the superintendent of the Kansas City schools, J. M. Greenwood, who enclosed his check for $2.00, and a promise that he would bring the new journal to the attention of all his mathematics teachers. The first response from the university level came from George Bruce Halsted of the University of Texas, the "stormy petrel" of the mathematical world, who was "in his element when in the midst of a violent verbal storm initiated by himself or otherwise." Halsted promised contributions for publication and sent a check for $30.00, an

[16] For a short biography of Royer, a noted teacher, see *The Ohio Teacher*, 36 (1915), 201. When Royer retired he sold his journal to *The Ohio Teacher.*

amount he contributed each year until he was fired at Texas for one of his verbal storms.[17]

The first issue of *The American Mathematical Monthly* appeared in January 1894. Finkel's introduction to the issue proclaimed the purpose of the journal and indicated that there would be a problem section — a section that has been a mainstay of the *Monthly* for more than a century. His words are both modest and autobiographical:

> While realizing that the solution of problems is one of the lowest forms of Mathematical research, and that, in general, it has no scientific value, yet its educational value cannot be over estimated. It is the ladder by which the mind ascends into higher fields of original research and investigation. Many dormant minds have been aroused into activity through the mastery of a single problem. The American Mathematical Monthly will, therefore, devote a due portion of its space to the solution of problems, whether they be the easy problems in Arithmetic, or the difficult problems in the Calculus, Mechanics, Probability, or Modern Higher Mathematics.



At the beginning, Finkel hired a Chicago engraver to make the wood-cuts, but this was too expensive. Finkel made his first wood-cut — with a penknife no less — in Volume 1, page 71. He continued to do this for most of the first 19 volumes [Finkel 1931, 312].

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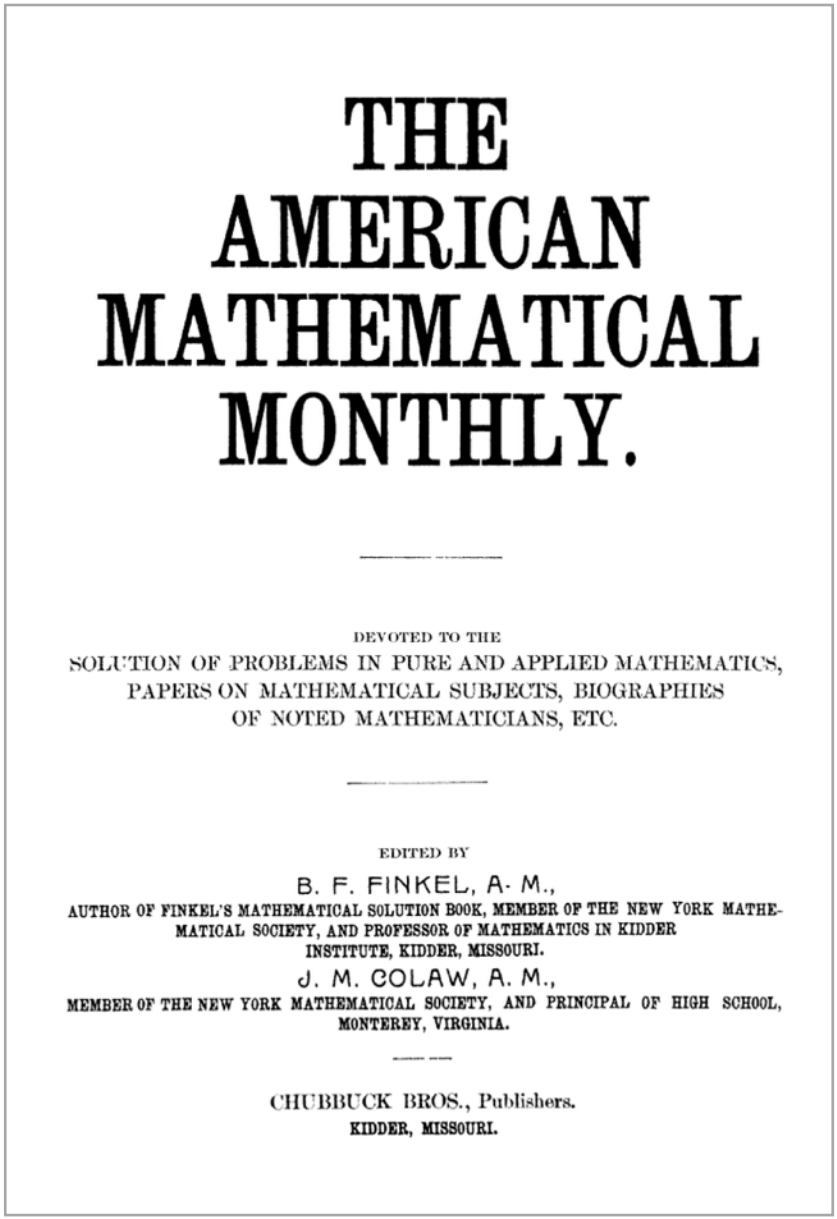
[17] In 1903 Halsted was fired after publishing articles in *Science* and the *Education Review* that criticized the university for hiring university graduate and high school teacher Mary E. Decherd over his protégé R. L. Moore, whom Halsted hoped to have as an assistant [John Parker, *R. L. Moore: Mathematician and Teacher*, pp. 36-38].



THE
AMERICAN
MATHEMATICAL
MONTHLY.

DEVOTED TO THE
SOLUTION OF PROBLEMS IN PURE AND APPLIED MATHEMATICS,
PAPERS ON MATHEMATICAL SUBJECTS, BIOGRAPHIES
OF NOTED MATHEMATICIANS, ETC.

EDITED BY
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CHUBBUCK BROS., Publishers.
KIDDER, MISSOURI.

First issue of the Monthly, January 1894

The editor and publisher of the local newspaper in Missouri, Edward J. Chubbuck, was daring enough to agree to print the new journal. While Finkel dealt with the editorial work, his wife

proofed the work of the inexperienced typesetters and "served as 'circulation manager' personally wrapping and addressing every copy." [*Kansas City Star*, May 11, 1939].

Drury College, Springfield, Missouri, 1895-1940

> In June, 1895, through the influence of Dr. Henry Hopkins, pastor of the First Congregational church, Kansas City, who was a member of the board of trustees of Kidder Institute and also of Drury College at Springfield, Dr. Finkel was elected head of the department of mathematics and physics at Drury. [*Kansas City Star*, May 11, 1939]

One of the first things Finkel did in Springfield was to make arrangement for publication of the monthly in Springfield by S. A. Dixon.

Financial problems arose early in the Monthly's history:

> We shall consider it a great favor if all the subscribers who have not paid their subscriptions for 1895 will kindly remit at once. We need the money to pay the printer. [*AMM*, 1895, 171]

> There are a number of subscribers in arrears for 1894. We shall consider it a kindness if those who are owing for 1894, will remit the amount of the subscription at once. A mathematical journal of the size and scope of the Monthly can not be published without funds, and were it not for a number of mathematical friends [e.g., Halstead] aiding us financially the MONTHLY would be obliged to discontinue.

In 1895, Finkel was offered scholarships by the University of Chicago and Yale University to study for a Ph.D. He accepted the scholarship from the University of Chicago but, having been offered the professorship at Drury College in Springfield, Missouri, he resigned the scholarship. Immediately after moving to Springfield, he set off for Chicago, which had just opened in 1892, where he attended the second summer session. While we don't know what he studied, we do know what was offered:

> THE UNIVERSITY OF CHICAGO. — During the summer quarter of 1895 the following courses (four hours weekly) in advanced mathematics will be given: by Professor Moore, Linear

> differential equations, Theory of functions of a complex variable; by Assistant Professor Maschke, Higher plane curves, Differential geometry of curves and surfaces; by Dr. Young (for first term), Mathematical pedagogy, Determinants; by Mr. Slaught, Differential equations; by Professor Smith of Shurtleff College, Advanced analytic geometry. [*Bulletin of the AMS*, 1, p. 260]

That summer he met and became friends with Leonard Eugene Dickson. Two years earlier, as a nineteen-year-old undergraduate student of Halsted at Texas, Dickson had published an article on Pythagorean Triples in the very first issue of the Monthly [19(1912), 184]. In 1896 Dickson became the first of E. H. Moore's 31 Ph.D. students.

> While in Chicago the first of September [1902], we called on Dr. Dickson and urged him to join us in the editorship of the Monthly. Not seeing his way clear at the time, he withheld his answer until he could consider the matter. After some meditation, he decided affirmatively. [*AMM*, 1902, 240]

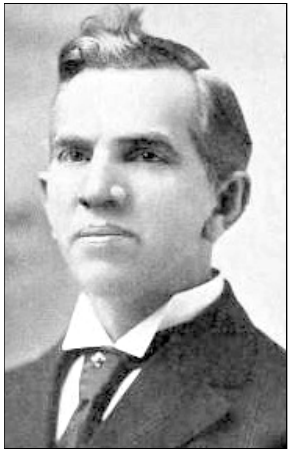
Before long, Dickson accepted Finkel's invitation (Colaw having become involved in writing elementary textbooks). Finkel called this "a red-letter day in the history of the Monthly" [Finkel 1931, 314]. Dickson took full charge of the papers published in the *Monthly*, while Finkel continued to deal with the problem section. Immediately after the announcement that Dickson was to be co-editor, we see his first editorial contribution:

> The hundredth anniversary of the birth of Abel, the eminent Norwegian mathematician, was celebrated during September at Christiania. Representative scientists from many countries were present. Among those upon whom honorary degrees were conferred were Simon Newcomb and J. Willard Gibbs. L.E.D.

After receiving a B.S. (1888) and M.S. (1891) from Ohio Northern, Finkel received an A.M. (1904) from the University of Pennsylvania. He wanted to earn a Ph.D., but realized that he would need additional help in running the journal. In 1904 Saul Epsteen joined the staff and a year later O. E. Glenn was added to the staff

[*AMM*, 19 (1912), 200 and 64 (1957), 3]. They helped during the two years when Finkel was working on his Ph.D. In 1906 Finkel earned a Ph.D. from the University of Pennsylvania with a dissertation on the *Determination of All Groups of order 2^m which contain Cyclic Self-conjugate Sub-groups of order 2^{m-4} and whose Generating Operations correspond to partitions, (m – 4, 4), (m – 4, 1)*. This was accepted for publication in the *University of Pennsylvania Publications, Series in Mathematics*, but was not published as this series ceased publication in 1905. His dissertation was to be presented at the 138th AMS meeting at Columbia on April 25, 1908, but was "read by title" as he was not present [*Bulletin of the AMS*, volume 14, p. 409]. Judging by other students who received Ph.D.s from Penn about this time, his advisor was likely George Hervey Hallett, Sr.

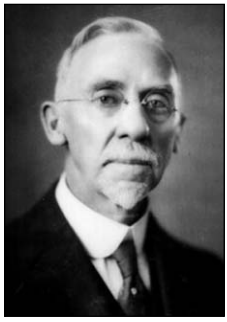
We don't have much evidence of Finkel's success as a teacher. We do know that the Junior Class at Drury dedicated the the 1909 yearbook to him with these words:



TO
BENJAMIN F. FINKEL
HEAD OF THE DEPARTMENT OF MATHEMATICS
AND PHYSICS AT DRURY COLLEGE
WHO BY HIS NEVER TIRING AID AND EVER READY FRIENDSHIP
HAS WON OUR SINCERE LOVE AND AFFECTION,
THIS ANNUAL IS GRATEFULLY
DEDICATED BY THE
JUNIOR CLASS

Dr. and Mrs. Finkel with the Drury Math Club (1934)

At this time, Dickson stepped down from the editorship of the *Monthly* as he joined the staff of the *Transactions of the American Mathematical Society* with volume 7, 1906. Slaught wrote that when Dickson "became an editor of the Transactions and had gained an international reputation, he still remained true to the *Monthly*." Dickson continued to publish in the *Monthly* and his articles added tone and interest, according to Slaught.



Dickson "suggested that his mantle be placed upon the shoulders of the aggressive, indomitable, and persevering Professor H. E. Slaught." After seeking Dickson's advice on the best way to serve the mathematical community, and "After a very conscientious debate with himself, he decided to devote his life to the promotion and improvement of the teaching of mathematics rather than to a research career." Consequently, Slaught accepted, and so the journal continued in strong mathematical hands. He served as an editor from 1907 to 1937. In 1913 he became Managing Editor and continued to hold that position until 1918 when the post was renamed Editor-in-Chief. He was then Editor-in-Chief 1916-18.

Finkel wrote that a "second red-letter day in the history of the Monthly" occurred in 1907 when Slaught replaced Dickson as editor along with Finkel [Finkel 1931, 314].

Slaught had graduated A.B. from Colgate University in 1883 and took a teaching position at the Peddie School in Hightstown, New Jersey, because he was interested in classics, but he quickly impressed people with his mathematical ability and showed great promise as a teacher and administrator. He married the music teacher, Mary L. Davis, at Peddie in 1885 and she encouraged him to use his talent to move up to university teaching. He applied for a fellowship at Johns Hopkins University to pursue a doctorate. This was not to be, for Fredereick Taylor Gates, an advisor to John D. Rockefeller (primary benefactor of the University of Chicago), through his fund raising efforts for Peddie got to know Slaught. He arranged for Slaught to meet President William Rainey Harper who was scouting for graduate students and faculty (he raided the faculty at Clark University) at the newly founded University of Chicago, and offered Slaught a two-year fellowship. He joined the University in 1892 when it opened. When his fellowship ended, he joined the teaching faculty, but because of his heavy teaching load did not complete his doctorate, under the direction of E. H. Moore, until 1898. He remained at Chicago for his entire career, becoming assistant professor in 1900, associate in 1908, and full professor in 1913. He retired in 1931 and died in 1937.[18]

Slaught realized that more editorial help was needed, so in early 1909, he asked Alexander Ziwet, who was on the engineering faculty at the University of Michigan, for help in editing the *Monthly.* On February 29, 1909, Ziwet responded that the *Monthly* was "somewhat out of my line" and suggested that Wooster Woodruff Beman may be interested. "Besides him we have Dr. Karpinski who is much interested in the pedagogy and history of mathemat-

[18] W. D. Cairns, "Herbert Ellsworth Slaught — Editor and Organizer,"*AMM*, 45 (1938), 1-4.

ics; he would probably be glad to contribute occasionally; but I do not feel sure that he would be suitable as editor or assistant editor."

Slaught had reason for his concern, for Finkel wrote him on October 10, 1909 on his own stationary that he was concerned that the *Monthly* has not been appearing on time. Money was of even more concern, for Finkel had been paying out of his own pocket. On January 27, 1910, Finkel wrote Slaught that he had signed a new contract with S. A. Dixon, who had been his printer in Springfield, Missouri, for 4 years. But the printing cost was high; he had to give him $1.75 per page to get him to do the work.

Unfortunately, the schoolteachers of mathematics saw no need for such a journal and so the *Monthly* "became occupied with a more virile race of mathematicians," adopting itself as a repository of articles of permanent wealth to teachers of collegiate mathematics. Part of Finkel's plan failed; few high school teachers subscribed. But he had the foresight to enlist the help of university mathematics faculty such as E.H. Moore (University of Chicago). The Monthly resonated with the college mathematics faculty very well.

Transferring the *Monthly* to a wider group.

Slaught was an editor of the Monthly from 1907 to 1917. For his first two years, he "ran it much as it had been going," as he reported in 1910, but he "used every effort to extend its list of active friends and succeeded in drawing to its cause a large number of valuable contributors and supporters who had formerly known little about it."

As editor, Slaught made ambitious strides toward improving the Monthly. He wrote in a 1910 letter that from the beginning of his editorship he "saw that we needed further financial support as well as editorial cooperation." He also believed that the *Monthly* needed to switch to a higher-quality printing service to elevate its status.

By 1909, Slaught wrote that he had "induced the University of Illinois to join with the University of Chicago in joint support to the extent of $50 annually, and Professor G. A. Miller at that time joined me [Slaught] as coeditor and director of the Monthly's destiny. Professor Finkel still managed the business end of the publishing and edits the problem department."

But there were problems with the Monthly. The typesetting was very difficult, and there were often delays. There were fears that the publisher would quit and, of course, there were constant financial worries. Finkel was afraid that he might have to cease publication. Consequently, in the summer of 1912, Finkel traveled to Chicago to visit Slaught and discuss these problems. Slaught was successful in enlisting the cooperation of other institutions and, beginning with Volume 19 (1912) the *Monthly* was published under the auspices of a dozen universities and two colleges. This arrangement was satisfactory, but not permanent, so Slaught approached the American Mathematical Society to see if they would take over the journal.

Slaught continued to solicit editorial support from colleagues and financial support from their educational institutions, including future MAA presidents E.R. Hedrick (University of Missouri), Florian Cajori (Colorado College), D.E. Smith (Teachers College at Columbia University), and G.A. Miller (University of Illinois), as well as E. J. Townsend (University of Illinois).

Townsend may have been the first to raise the possibility of bringing the Monthly to the American Mathematical Society (AMS) for support. In a May 17, 1912, letter to Slaught, he suggested that the AMS

> might well undertake to publish a mathematical paper that would be of value to the teachers of mathematics in the high schools and the small colleges, and one which would influence the character of the instruction and at the same time stimulate mathematical interest in those schools upon which we must depend for mathematical students.

In his reply, Slaught revealed the urgency of his need for financial support for the Monthly and suggested improving the Monthly first and later proposing that the AMS take it over:

> I cannot long stand the pressure. I must either put the Monthly on a different basis or stand from under.
>
> If your scheme, which you proposed with reference to having the Society take the Monthly over, could be put through, I should be only too glad to transfer the whole responsibility, including all editorial and business connection with the journal, and if you think that there is a chance of this being done, I should be only too glad to wait and see it tried. However, all the members with whom I have talked seem to feel very doubtful about this proposition at the present time. It may be best to go ahead as proposed above [with subsidies from educational institutions], and see what can be done with the Monthly, hoping later that the Society will take it over.

Slaught wrote to Finkel with a similar sense of desperation on November 6, 1912: "I had definitely promised myself that I must bring about this change [of the entire environment of the Monthly] between now and January first," he wrote, "or else withdraw entirely from the situation." After some persuasion by Slaught, Finkel agreed to transfer the rights to the journal to a board of editors, and Slaught met his January 1 deadline: The January 1913 issue stated that it was "published with the cooperation of the universities of Chicago, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Colorado College, and Oberlin College.

In the meantime, Slaught had succeeded in bringing the journal to the New Era Printing Company (later called Lancaster Press), which printed the Monthly from January 1913 through December 1925. With a more professional look and broader editorial cooperation, the Monthly grew more widely read and well regarded. It would need further, more stable financial support to keep up.

In 1914-1915 the Board of editors that "controlled and edited" the Monthly. It consisted of a representative of each school: C.H. Ashton, R.P. Baker, W.C. Brenke, W.H. Bussey, W.DeW. Cairns, Florian Cajori, R.D. Carmichael, D.R. Curtiss, I.M. DeLong, B.F.

Finkel, E.R. Hedrick, L.C. Karpinski, G.A. Miller, W.H. Roever, H.E. Slaught. Of the twelve professors on the board, three served on an editorial committee, and three served on an executive committee. Slaught remained the managing editor and was part of the board, the editorial committee, and the executive committee.

The AMS and the *Monthly*: 1914-1915

Mathematicians associated with the Monthly and with the American Mathematical Society (AMS) began to consider whether the AMS should take over the Monthly. Up to that point, the AMS had dealt almost exclusively with mathematical research at the university level.

Some AMS members favored maintaining the research focus, sometimes with negative dismissals of any mathematics accessible to the "average mathematician" that Finkel and the Monthly tried to reach. Other members saw the task of improving college-level mathematics teaching as a crucial element of elevating the quality of university-level mathematics, and therefore as a worthwhile endeavor for the AMS. The debate was sometimes contentious.

On February 11, 1914, Dickson wrote to Professor Cole (of the AMS) with his views on the possibility. Dickson emphasized that he "would like to see the Monthly perpetuated for it does a good work in its field," and that "there is a wide constituency ... being interested and profited by the Monthly."

In the letter Dickson also foretold the formation of a new organization to back the Monthly:

> Presumably, if the Society does not care to cover also the intermediate field, the Monthly must eventually be backed by an organization, corresponding to the Mathematical Association in England in its relation to the Mathematical Gazette. While I have not heard those behind the Monthly say that they contemplate an Association of Teachers of Mathematics, provided the present overtures to the Society fail. Still it seems clear to me that such an organization will eventually arise in America, and doubtless the backers of the Monthly have some plan in mind in case the

> present one fails. Whether our Society should head off such an organization by taking care of that constituency is a question of considerable importance, especially as the affirmative action would make the Society much more heterogeneous.

Dickson was unsure about what he identified as the important question: "whether the interests of mathematics in this country, in contrast with the mere interests of the Society, are best served under the present limitation of our energies in the direction of higher mathematics, rather than, by the proposed enlargement of energies, by attention also to intermediate mathematics."

He continued, "Either the Society should join in such an enlargement of its functions, or should gracefully acquiesce to an inevitable new organization, which instead of harming our Society should do us good." On this question, Dickson declined "to attempt to express even a tentative opinion, except that [he] would favor a discussion."

Other key players ventured to express opinions. D. E. Smith wrote to Slaught on February 13, 1914,

> With respect to enlarging the scope of the American Mathematical Society in the way that you suggest, I fear that the proposition is a doubtful one. The London Mathematical Society does not take in the teaching element; the Circolo of Palermo confines itself to Pure Mathematics, and in general there is in every leading country a society that publishes material as ours [the AMS] does, which not one member in a hundred can read, at least with any pleasure.
>
> I should think we could secure better results by keeping the American Mathematical Society a blueblood organization that stands for sound mathematics, and then put all the energy we can into organizing associations of teachers of mathematics, as we are doing at present.

Another future MAA president, E. R. Hedrick, wrote to Cole on April 28, 1914, with an opposite opinion:

> It is true that I believe that the Monthly has a place, and that it should continue to exist. I believe that the persons best served by the Monthly are on the whole about the same persons who are touched by the present activities of the Society, plus some other

> people. I am firmly opposed to the creation of an organization other than the Society which should undertake to support the Monthly and ask the support as members of these people. Indeed, unless absolutely forced, I would refuse to join in the formation of such an organization other than the Society.
>
> I firmly believe in the present activities of the Society, individually and severally, for all those now served. I firmly oppose all possible changes in this established work and service, and anything which would lessen the efficiency of that work, or get in its road. I cannot see that extending the scope of the Society's efforts would damage its established functions. That is about all that I think on this subject. Is it heresy?

In April 1914, Slaught presented a proposal to the Chicago Section of the AMS to set up a committee of five to investigate whether the Society should take over the publication of the *Monthly*. As Secretary of the Chicago Section of the AMS and editor of the Monthly, he formally submitted a proposal to the AMS on December 28, 1914. On April 23, 1915, the AMS Council voted, three to two, deeming it unwise to take over the *Monthly*. The final resolution stated,

> It is deemed unwise for the American Mathematical Society to enter into the activities of the special field now covered by the American Mathematical Monthly; but the Council desires to express its realization of the importance of the work in this field and its value to mathematical science, and to say that should an organization be formed to deal specifically with this work, the Society would entertain toward such an organization only feelings of hearty good will and encouragement.

Benjamin Finkel's dream has substantially come true; the *Monthly* is the most widely read mathematics journal in the world.

The Organizational Meeting for the MAA

Professor Slaught conceived the idea of a new mathematical organization to support collegiate mathematics. He wrote hundreds of letters to professors of mathematics in the United States and Canada setting forth his plan. In June 1915, Slaught sent out a form let-

ter requesting the return of a postcard [none of these have been located] if the recipient believed a new organization with the following four goals should be formed:

> 1. To provide organized activity in the large field between the fields of secondary school mathematics and the field of pure research.
>
> 2. To form a medium of communication and a forum for exchange of ideas between teachers and others interested in collegiate mathematics.
>
> 3. To furnish a place for publication of scientific articles and papers adapted to this intermediate field.
>
> 4. To publish historical articles, book reviews, notes and news, and indeed any matters of interest to the great body of men and women related to this field. [Jones, in *The MAA: Its First Fifty Years*, p. 20.]

In the October 1915 *Monthly* Slaught reported — and this is the first mention of the Association in the *Monthly* — that he had received approximately 350 replies, only a half dozen of which were in any way opposed to the proposal. Eventually 450 replies were received, representing every state in the Union [*AMM*, 22, 352].

It was proposed to hold an organizational meeting in conjunction with the annual meeting of the American Association for the Advancement of Science in Columbus, Ohio, on December 30–31, 1915. "The name of the new society, its precise character and policy, its relation to The American Mathematical Monthly, etc., will be questions for full discussion and determination at the organization meeting." [*AMM*, 1915, 253]

However, not all of the interest in new mathematical organizations was being generated at the national level.

> The first meeting of the Kansas Association of Teachers of College Mathematics was held at Topeka, Kansas, November 12 [1915]. This meeting was the result of a movement initiated in the spring of 1915 for the improvement of teaching collegiate mathematics in the colleges of Kansas. It is a part of a nation wide movement having the same end. ...

> This action of the college teachers of mathematics in Kansas is the first step in a movement that promises to grow rapidly. Definite plans are already formed for a similar organization in Ohio during the Christmas holidays, in conjunction with the meeting to be called for organizing a new national mathematical association, which is to be held at Columbus on Thursday, December 30, at ten o'clock in Page Hall of Ohio State University [*AMM*, 1915, 324].

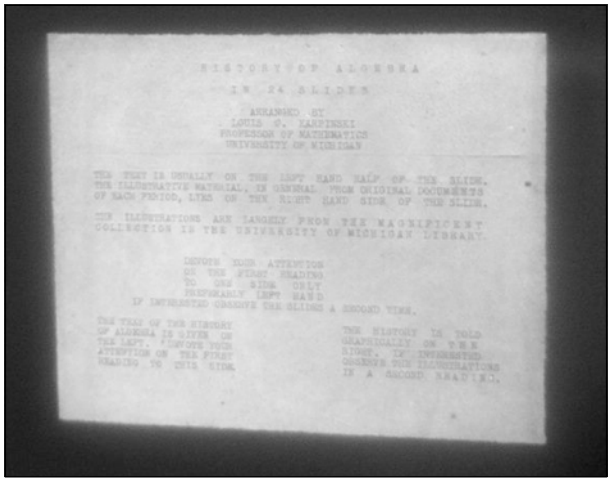
The organizational meeting took place in room 101 of Page Hall (front, left) on the campus of The Ohio State University. There were two sessions, the first on Thursday morning, December 30, 1915, and the second on the following morning. The meeting was attended by 104 individuals, many of whose names are recognized today, including: R. D. Carmichael (University of Illinois), L. E. Dickson (University of Chicago), B. F. Finkel (Drury College), Henry S. White (Vassar College), and Alexander Ziwet (University of Michigan), to name but a few. When the meeting was called to order, E. R. Hedrick, of the University of Missouri, was elected temporary Chairman (despite his earlier protestations) and W. D. Cairns, of Oberlin College, temporary Secretary. Hedrick immediately asked H. E. Slaught, who was acting on behalf of the board of editors of the *Monthly*, who had called the meeting, to discuss the history of the movement to found a new organization devoted to collegiate mathematics.

The meeting then resolved into a committee of the whole to consider, section by section, a constitution and by-laws which had been drafted in advance. It took three hours of painstaking deliberation to resolve all issues but one: What should the new organization be called? Eighteen names had been suggested, so a commit-

tee was given the task of deciding. The three committee members decided to act independently on choosing a name. When they reconvened they had all chosen the same name, and this was accepted unanimously by the whole group the next morning. Thus it was that our society became known as The Mathematical Association of America.

On Friday morning, December 31, 1915, the Constitution and Bylaws were officially adopted. They were first printed in the January 1916, issue of the *Monthly*, an issue that was delayed in mailing. E. R. Hedrick was elected the first President of the MAA, E. V. Huntington of Harvard and G. A. Miller of Illinois was chosen as Vice-Presidents, and Cairns was continued as Secretary-Treasurer (a post in which he served until 1943). Twelve individuals, representing as many states, were elected to the executive committee. A committee was appointed to negotiate with the owners of the *Monthly* to make it the official journal of the Association, and thus it was that the *Monthly* began its twenty-third year of continuous service to the mathematical community.

As one would expect of any mathematical meeting, the organizational meeting was not devoid of mathematics. There was only one speaker, the distinguished historian of mathematics from the University of Michigan, Louis C. Karpinski, who gave an illustrated lecture on the "Story of Algebra." Karpinski had a great interest in popularizing the history of mathematics and developed series of glass slides (4 inches wide and 3 ¼ tall) dealing with arithmetic (25 slides), geometry and trigonometry (26 slides), algebra (25 slides), and higher mathematics (17 slides). These consisted primarily of title pages of historically important books. Here is the first slide from the Algebra lecture. Because it is difficult to read, we transcribe it below.



HISTORY OF ALGEBRA

IN 24 SLIDES

ARRANGED BY

LOUIS C. KARPINSKI
PROFESSOR OF MATHEMATICS
UNIVERSITY OF MICHIGAN

THE TEXT IS USUALLY ON THE LEFT HAND HALF OF THE SLIDE. THE ILLUSTRATIVE MATERIAL, IN GENERAL FROM ORIGINAL DOCUMENTS OF EACH PERIOD, LIES ON THE RIGHT HAND SIDE OF THE SLIDE. THE ILLUSTRATIONS ARE LARGELY FROM THE MAGNIFICENT COLLECTION IN THE UNIVERSITY OF MICHIGAN LIBRARY.

DEVOTE YOUR ATTENTION
ON THE FIRST READING
TO ONE SLIDE ONLY
PREFERABLY LEFT HAND

IF INTERESTED OBSERVE THE SLIDES A SECOND TIME.

THE TEXT OF THE HISTORY
OF ALGEBRA IS GIVEN ON
THE LEFT. DEVOTE YOUR
ATTENTIN ON THE FIRST
READING TO THIS SIDE

THE HISTORY IS TOLD
GRAPHICALLY ON THE
RIGHT. IF INTERESTED
OBSERVE THE ILLUSTRATIONS
IN A SECOND READING.

The slides begin with the Rhind Papyrus and include illustrations of the work of Al-Khowarizmi, Fibonacci, Pacioli, Record, Vieta, Leibniz and Newton. The last slide has popular nineteenth century American algebras (Jeremiah Day, John Bonnycastle, Francis J. Grund, and Benjamin Peirce). This must have been a fascinating presentation.

E. R. Hedrick wrote that Karpinski's erudite and interesting lecture would not have been given at one of the other mathematical organizations. The lecture emphasized the point that "serious and dignified study of no matter what topic in the mathematical field might constitute research in a newer sense." [*School and Society*, 3, 396.] More mathematics was discussed by the other societies. Henry S. White gave his retiring address as Vice-President of section A of the AAAS on "Poncelet Polygons." In addition, twenty-six papers were presented at the AMS meeting that was held at Ohio State the same weekend.

Which Section Was First?

This question is one that periodically haunts three sections: Missouri, Kansas and Ohio. Our aim here will be to try to give an objective answer to this recurring puzzle, by carefully examining the extant documents from the Monthly.

Article V of the Constitution of the MAA is entitled "Sections," and the first item reads:

> Any group of members of this Association may petition the Council for authority to organize a Section of the Association for the purpose of holding local meetings. The Council shall have power to specify the conditions under which such authority shall be granted.

In the report of the Organizational Meeting we find that this section of the Constitution was quickly put into use:

> The Council received formal applications from duly authorized representatives of three states requesting authority for organizing Sections of the Association; namely, from Kansas, Missouri and Ohio. The Kansas meeting was held early in the autumn, the

> Missouri meeting at Thanksgiving time, and the Ohio meeting on Thursday afternoon at Columbus, the latter having some thirty-five delegates present. The Council appointed a committee consisting of E. R. Hedrick, Alexander Ziwet, and K. D. Schwartzel, to formulate the terms under which such petitions may be granted, as provided by the Constitution, and to act with power on these and other similar petitions which may be received before the next meeting. [*AMM*, 1916, 6]

There is a handwritten document which reads:

> Jan. 9, 1916
>
> Received from G. N. Armstrong formal application for a charter for an Ohio Section with a constitution enclosed. Sent to Pres. Hedrick for action Jan. 12. Sent copy of minutes & of council minutes to Hedrick also copy of minutes to Slaught to whom last week I sent copy of Council minutes.

The February 1916, issue of the Monthly indicated that the committee on the organization of sections was working out the details and would report in the March issue, and so they did. After stating the newly formulated "Regulations for Sections," it was reported that:

> The first body to make application for admission as a section was in Kansas. A meeting was held in the autumn of 1915 at which the Kansas teachers of collegiate mathematics organized and appointed Professor U. G. Mitchell, of the University of Kansas, as their delegate to present their application at the Columbus meeting as soon as the national Association should give them an opportunity. They held their first meeting as a Section of the Mathematical Association of America at the University of Kansas on March 18, 1916. [AMM 23(1916), p. 95.]

Interestingly enough, Ulysses Grant Mitchell (1872-1942) was the only mathematician from Kansas at the Organizational meeting in December. The report of this first meeting of the Kansas section, as a Section of the MAA, is printed in the May 1916 Monthly. It indicated that they had now become a section of the national organization, but no date for the acceptance of their charter is given. The report repeats the statement that the Kansas section was the first section to make application for admission to the MAA. The pro-

gram for this meeting is reproduced in the *Kansas Section of the Mathematical Association of America, 65 Years (1915–1980)*, which was prepared by Elaine L. Tatham in 1980. This program carries the line "The Kansas Association has now become a section of the national organization, The Mathematical Association of America, recently organized at Columbus, Ohio." Again, no date is given.

The Organizational Meeting for the Ohio Section

The twenty-five Ohio teachers of collegiate mathematics who were registered at the organizational meeting of the MAA met together to form a Section of the national organization. They adopted a constitution that is reproduced in Appendix E below. Most importantly, they applied to the national Association for a charter, which was granted on March 1, 1916.

They also elected the first section officers. Professor R. B. Allen of Kenyon College was elected Chairman, G. N. Armstrong of Ohio Wesleyan University was chosen as Secretary-Treasurer, and C. C. Morris of Ohio State University became the third member of the Executive Committee.

The full report of the first meeting of the Ohio Section is in the July issue of the Monthly and contains the information that the section was granted a Charter by the national organization on March 1, 1916.

> The first meeting of the Ohio Section of the Association was held at Columbus, on April 21, 22, 1916. This section was formed at Columbus at the same time that the national association was organized and application for admission was made then [p. 185].

We have already discussed the program of this meeting in detail above.

The next mention of Sections is in the November Monthly, p. 361. At this time there were four sections, Kansas, Ohio, Missouri, and Iowa. (It is not clear if there is any significance to this order). The

Ohio and Kansas sections had held their first meetings (besides their organizational meetings), and the Missouri section had one planned for November 16, 1916. This was the first mention of a meeting of the Missouri section, so it seems clear that they were definitely not the first section of the MAA.

In "The Association and Its Sections," H. E. Slaught gave a ten-year history of the sections, of which there were seventeen by that time. He reported:

> It will be recalled that Ohio and Missouri were contestants for the honor of securing the first charter for a section and that Ohio won by the margin of a few minutes, both petitions being presented within an hour after the final adoption of the constitution at the organization meeting of the Association in Columbus, Ohio, in December, 1915. [*AMM* 34, 225.]

We should remember that Slaught was an editor of the Monthly at the time the Association was founded in 1915, was present at the organizational meeting in Columbus, and, being from the University of Chicago, does not have a favorite son in the dispute over which section was first. Consequently, considerable weight must be given to his statement.

On October 15, 1966, when Kenneth O. May was preparing *The Mathematical Association of America: Its First Fifty Years* (published in 1972), he wrote to Foster Brooks, then Secretary of the Ohio Section, asking for information about the history of the section. Brooks replied on November 18, 1966, indicating that he had "the complete file of papers of the section." Brooks was unable to get any charter members to write a history at that time, and so was forced to write a brief history himself. He sent this to May on June 16, 1967.

> "The official account of these events, as recorded in the minutes of the Section" indicates that twenty-five members of the Ohio Teachers of Collegiate Mathematics met December 30, 1915, at 2 P.M. and passed a resolution that the Ohio Teachers of Collegiate Mathematics favor forming themselves into a section of "The Mathematical Association of America."

The use of the official name here before it was approved the next day indicates how universal the agreement was about the name of the new Association. This group appointed Professor Allen of Kenyon College as Temporary Secretary. More importantly, "Professor Allen was appointed a delegate to represent the section at the adjourned meeting of the parent organization to be held Friday, December 31 at 9 A.M." From the information reported in the *Monthly*, it appears that Allen dutiful carried out this responsibility, even being the first to apply for membership as a Section.

Also at this organizational meeting of the Section, a committee of five was appointed to, among other things, "formulate a scheme of organization" and "to report to an adjourned meeting [of the Section] to be held December 31 at 2 P.M." The next day this committee proposed the Constitution of "The Ohio Section of the Mathematical Association of America," which is reproduced in Appendix E below. It was immediately accepted.

The next item dealt with in the history by Foster Brooks contains information that has never been reported in the *Monthly*:

> Under date of January 3, 1916, the Secretary-Treasurer of the Ohio Section notified the Secretary of the parent Organization of the formation of the Ohio Section, and made application for recognition and the granting of a charter. Notification of the granting of this request under date of March 1, 1916, was received in the attached letter from the President of the parent Association.

It is not clear whether the Secretary-Treasurer referred to above was the Temporary Secretary, R. B. Allen of Kenyon, or G. N. Armstrong of Ohio Wesleyan, who was elected December 31, 1915, as the first Secretary-Treasurer of the Ohio Section. But the March 1, 1916, letter of E. R. Hedrick, first President of the MAA, indicating that the Ohio Section had been approved, was sent to Armstrong, with a copy to Allen. The Ohio Section was the first to receive a letter granting them permission to form a section.

Professor Brooks also wrote about the first meeting of the Ohio Section. Ohio was not the first Section to hold a meeting. That was

the Kansas Section, which held a meeting on March 18, 1916, but they had not yet been officially recognized as an MAA section. His report is substantially different than that which appears in the June 1916, *Monthly*. This raises the question of how much, if at all, the required reports which were submitted to the national organization were edited by the secretary before they appeared in the *Monthly*. We suspect that they were printed verbatim — at least this would account for the discrepancies over which section was first. Moreover, the Secretary of the national organization was an Ohioan, so he certainly would not have removed the statements in the Kansas reports that they were first.

In summary, Ohio may well have been the first section to apply for membership in the MAA. We surmise that, on December 31, 1915, they were recognized first at the meeting and made an oral application for membership, and that Kansas got to speak next. But, since Mitchell was acting as a committee of one from Kansas, he was able to submit a letter asking for admission immediately after the meeting. This would allow both sections to claim that they were first. But Ohio was not the first Section to hold a meeting as a recognized Section of the MAA.

Hopefully, the publication of this history will prompt people to search deeply into their files and into the archives of their schools and find further documentation concerning the history of the Ohio Section. In any case, one thing is certain, as is amply documented by this history: The Ohio Section of the Mathematical Association of America has a firm claim on consistently being one of the most active and best Sections.

> How long did it take the MAA to form sections? Minutes! No sooner had the constitution been approved than three states submitted formal applications to become sections — Kansas, Missouri and Ohio.
>
> Which of the three state organizations became the first MAA section? Organizationally savvy, the Ohio group created a special committee at the conclusion of the first day of the two-day meeting to prepare its own constitution. Consequently Ohio

> beat Missouri by a few minutes in the heated race; Kansas placed third. [Zitarelli, "The Mathematical Association of America: Its first 100 years," p. 6]

At the annual Joint Mathematics Meetings in January 2012, there was an "MAA Session on Writing the History of the MAA." Three of the talks in that session were:

- "Highlights in the History of the Missouri Section", by Leon M. Hall.
- "The Ohio Section also celebrates its centennial", by David Kullman, Thomas Hern, and Daniel E. Otero.
- "The Kansas Section: Were We First?*"* by Robert W. Neufeld, Elaine L. Tatham, and Timothy W. Flood.

With vigor, humor, and honest sincerity each group pressed their claims for being the First Session.

Which section was first is, after a century, of little importance, but what is clear from subsequent history in this volume is that the Ohio Section of the Mathematical Association of America has a firm claim on consistently being one of the most active and best Sections

A Sad Ending

In 1957 Charles W. Trigg wrote

> In 1934 Finkel became inactive in the problem department although he remained on the editorial board until his death on February 4, 1947. [Trigg 1957, p.1].

The situation was much more complicated than this sentence indicates. Finkel's work had deteriorated and there were numerous complaints about it. But it was a delicate situation. W. B. Ford writing from Ann Arbor to Slaught on January 8, 1933 commented:

> It looks to me as though somebody diplomatically inclined would simply have to figure out some way to let Finkel gradually fade out of the picture. If that can't be done then let him resign as he threatens, and follow this up by a resolution by the Trustees expressing the indebtedness of the Associations for his early activities, etc. etc.

A week later, Bussey wrote to Slaught that

> During my five years as editor I regarded [Otto] Dunkel as the *responsible* editor of "Problems and Solutions." Professor Finkel was just a figurehead. I agree with all that Carver has said about the *unfitness* of the material sent by Finkel to Dunkel. In my judgment Finkel is not qualified to be the *responsible* editor of "Problems and Solutions." He lacks not only the mathematical ability that Dunkel has but also the ability or else the inclination to put the material that comes to him in decent shape for the printer. Let Finkel resign.

Walter B. Carver to Slaught, November 1, 1932

> I am having some little difficulties with respect to the Problems and Solutions department of the Monthly because of the divided responsibility. I want to move carefully, because I do not want to offend Finkel . . . Contributors write directly to Finkel. He makes up copy, mostly by clipping from letters sent to him. The copy looks pretty bad — frequently much worse than the sample sheet enclosed. The names of proposers and solvers are frequently wrong. Finkel does not correct or return page proof.

Even with these serious concerns he felt that nothing should be done to offend Finkel. His editorial work did not improve and on January 3, 1933 Carver wrote Slaught again:

> the material as Finkel sends it out from his office is in no shape for publication. . . . Much of Finkel's material is unfit for publication for two kinds of reasons — it is often illegible and in very bad shape mechanically, and it is often lacking in clearness and very unhappy in expression. Occasionally it is definitely wrong mathematically.

Carver was not the only one who was unhappy. He reported two weeks later to Slaught that Finkel had sent an ultimatum that he will send no more material to Dunkel and will not work with him. The situation was not hopeless, but it was another year, February 20, 1934, before Carver wrote to Cairns that "Finkel had asked that no mention be made in the Monthly of his resignation."

There is no record of when Finkel actually gave up editorial responsibility for the problem section, but there is an undated draft of a four-page letter from Slaught that reads in part:

> The Trustees have informed me "that you are desirous of retiring from active responsibility for the Department of Problems and Solutions in the Monthly. While acceding to your wish in this particular, the Trustees indicated their very urgent desire that you should continue as an associate editor with no specific duties."

Slaught closes with his own personal touch: "I would say that you are the Dean of Problem Solvers in America." He is aware of how delicate this issue is and has high praise for Finkel throughout. After many years of working together this had to be a sad ending for these two men who had devoted so much of their life to *The American Mathematical Monthly*.

Finkel retired as head of the Department of Mathematics and Physics after 43 years at Drury College in 1937, but continued to visit "to see that things are going all right." He was "extremely friendly, cordial, friendly. His hearty laugh belies the age his white hair would indicate." His home retained its 1900s look and his extensive library contained a good deal of classical literature as well as mathematics [*The Drury Mirror*, April 28, 1944]. Unfortunately the disposition of his books and nachlass are unknown.

At 5 A.M. on January 1, 1938, Finkel returned from an A.A.A.S. meeting in Indianapolis. Not having a key, he rang the door-bell. Hanna Finkel — "Mother" as she was affectionately called by the students — "in an effort to find the light-switch in her bedroom, became confused in the dark, wandered out into the hall and to the back stairway and fell down the entire flight, sustaining fatal injuries." She died almost four weeks later on January 29, 1938. At the funeral, Drury College President Nadal remarked that "she has

stood beside Dr. Finkel with understanding and sympathy, helping him with his work" [*Drury College Bulletin*, July 1938].

Doctor Benjamin Franklin Finkel died at his longtime home at 1227 Clay Street in Springfield, Missouri, on February 5, 1947. He was eighty-one years old. The Finkels had three children. At the time of his death in 1947 they were Mrs. Lucile Whitney of Alabama and Mrs. Louise Lockwood of Toledo[19] Their only son, Calvin Randell Finkel (1891-1908), was a member of the Drury class of 1912.[20]

Happiness had entered his life two years earlier when he married Mary Frances Ford, 57, at the Congregational church, where he had been a lifelong member. He was a staunch Republican. He is buried next to his first wife and parents in the Reber Hill Cemetery near his birthplace in East Ringgold, Ohio. Requiescat in pace.

Dr. and Mrs. Finkel on the Ohio Farm they still owned.

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[19] *Drury College Bulletin*, January 1947; this must have come out late as it reports on Finkel's death on February 5, 1947.

[20] On Halloween night, October 31, 1909, he and some friends were playing pranks on the faculty on campus. When spotted, he was ordered to stop, but did not. Then he "was shot down . . . by a cowardly special officer who was hired to guard Drury campus against depredations for that night." Officer Charles Finn, the "fool with a gun," was charged but not convicted for Calvin's death [The Drury Mirror, November 6, 1908 and April 9, 1909].

Acknowledgements

William Garvin, Archivist at the F. W. Olin Library at Drury University deserves special thanks for supplying newspaper clippings and several photographs of Finkel that are reproduced here.

Emily Gattozzi, Curator of the OWU Collection at Ohio Wesleyan, helped by providing information about George Washington Shaw.

Paul Logsdon the archivist at Ohio Northern University deserves special thanks for providing information about Finkel's grades at ONU and much helpful advice.

Carol Mead, Archivist at the Archives of American Mathematics, for information about the transfer of the ownership of the *Monthly* from Finkel to the consortium, then to the MAA, and details of how Finkel was eventually forced out.

Ohio Section Meetings

One of the best ways to gauge the pulse of an organization is to observe its meetings. This is particularly true of the Ohio Section since, at least in the early years, its principal activities consisted of annual meetings.

The First Annual Meeting of the Ohio Section

The First Annual Meeting of the Ohio Section was held April 21-22, 1916, at the Ohio State University in conjunction with the Ohio College Association, the Ohio Academy of Science, the Ohio Society of College Teachers of Education, and the Association of Ohio Teachers of Mathematics and Science. Such joint meetings were common in those days when all of the organizations were small.

Forty individuals, from twenty-two colleges and universities, attended the meeting. Few of these names would be recognized today by anyone other than a student of the history of American mathematics. No school had more than two representatives, except Ohio State, which had nine. It is encouraging to note that eight of the participants were women. But it is a sign of the times that all of those were addressed as "Miss."

In reading the report of the meeting, published in the *Monthly* [23, 189-193], one is struck by the fact that a number of things that we consider to be standard at today's meetings were already a part of that first meeting. The program included an invited address, a business meeting, a chairman's address, contributed papers, a panel discussion, and a banquet. The written report phrased this last item rather more eloquently than we would today: "The members of the Section dined together." Later on Friday evening, Professor Charles H. Judd, of the University of Chicago, spoke on "The more complete articulation of higher institutions with the high school."

This the same topic would be re-visited at meetings in the 1980s and 90s.

At the business meeting three new officers were elected, and the group also passed three resolutions. There was to be one meeting in the spring of each year, and it was to be held in conjunction with the Ohio College Association. Naturally, money reared its ugly head: "a collection of twenty-five cents each be taken to meet the expenses of this meeting for printing and postage." This seems ridiculously cheap, but a quarter then was dearer than our five dollars today. The final resolution asked the national Association to remit five per cent of the annual dues and at least one half of the initiation fees of new members. Annual MAA dues at the time were three dollars, which would have been barely sufficient to pay for the copies of the *Monthly* that each member received. Amazingly, the national Association decided to remit all of the initiation fees for new members to the sections.

The heart of the program, then as now, consisted of the talks. The Chairman's address, by R. B. Allen, was titled "Hypercomplex Number Systems." He stated the fundamental theorems and gave "enough of the proofs to indicate their elementary character." Using these results, he showed that "the only real number systems in which division is unambiguous [are] the real system, the ordinary complex system, and the real quaternion system." From the brief abstract it appears that this was a sound exposition of a fairly recent mathematical result.

There were five other "formal papers," but only one of those was mathematical. C. N. Moore of the University of Cincinnati discussed the history of divergent series, the principal methods of summing them, and some of their applications. The other talks dealt with pedagogy. A. E. Young of Miami University spoke on "What elective courses following the calculus should the average college offer?" He classified courses as "algebraic, geometric, functional, or applied mathematics," and suggested that the average student take those from the first and second category, with "a functional course for the exceptionally brilliant, and courses in ap-

plied mathematics for the prospective engineer." Unfortunately, the abstract does not explain what is meant by a functional course.

Two papers, by Harriet Glazier of the Western College for Women and J. B. Faught of the Kent State Normal College, dealt with the preparation and qualifications of secondary school teachers. In addition six other "brief notes" were scheduled, but two of them were omitted "owing to lack of time."

Rereading the report of this meeting, and of the other early meetings of the Ohio Section, one is struck with how little things have changed. We would like to think that we have made great strides in pedagogy and curriculum design, yet we are still faced with many of the same problems that our forebears were. Perhaps success is measured in part by how hard we struggle.

Subsequent Meetings

Not only is Columbus near the geographic center of our section, but at the time it was also a hub for five major steam railroads and six electric interurban lines. Therefore it's not surprising that 39 of the first 40 Ohio Section meetings were held on the Ohio State campus. Average attendance at those first forty meetings was 55, with a high of 139 at the first meeting to occur outside of Columbus – the 34th annual meeting, held at Denison University in 1950. Beginning at Oberlin College six years later, it became customary to vary the meeting site from year to year, with efforts being made to include all geographic regions of the Section.

The second annual meeting was held at The Ohio State University on April 6, 1917, the same day that the United States formally entered World War I. Attendance was a bit lower than the previous year, with thirty-four persons registered from nineteen schools. Not surprisingly, eight of them were from Ohio State. At this meeting five of the six formal papers dealt with topics of pure or applied mathematics, including Taylor's series, Fourier series, binary forms, mathematical statistics, and paths of comets. The 23 participants present at the close of the afternoon session posed for

a photograph on the steps of Chemistry Hall. A copy of that photo appears on the back cover of this volume.

In the report of the eighth annual meeting of the Ohio Section (March 30, 1923) it is noted that "Following an inquiry from the University of West Virginia, it was voted to invite the mathematicians from that state to join in the meetings of the Ohio Section." Ten years later the Allegheny Mountain Section was formed, with the intent of serving mathematicians in Western Pennsylvania, West Virginia, and Eastern Ohio. The latter remained in the Ohio Section, but all of West Virginia, except Cabell County, joined the new section – a situation that remains to this day.

In the early years a typical meeting took place on a Thursday or Friday and consisted of an afternoon session, dinner, and an evening session. In 1943 only the afternoon session was held, and the 1945 meeting was canceled altogether, due to travel restrictions imposed by World War II. In 1948 the meeting day was changed to Saturday, with morning and afternoon sessions. This pattern continued through the 50th annual meeting in 1966, after which the present two-day (Friday-Saturday) meeting schedule was adopted.

On December 7, 1963, a special meeting of the Section was held at Denison University under the leadership of the Section Chairman, Charles Capel (Miami University). No formal papers were presented at this meeting, but sessions were devoted to discussion of the freshman-level mathematics curriculum, teacher training and certification, and revision of the Ohio Section By-Laws. The outcome of this historic meeting was the formation of standing committees: CONTTAC, CONCUR, and COB. (See the chapter on Committees for details.)

The next fall meeting of the Ohio Section was a joint meeting with the MAA Committee on the Undergraduate Program in Mathematics (CUPM), held in Columbus on October 20-21, 1967. Two years later the fall meeting became an annual event in the Ohio Section, and until 1978 each fall meeting program was dedicated to

a special topic, or theme. The spring meeting is still designated as the "annual meeting" because the annual business meeting and the election of officers occur then.

Themes of Special Fall Meetings

1963 Special meeting on undergraduate curriculum, teacher training, and by-laws.

1967 Conference on Collegiate Mathematics in Ohio (with CUPM).

1969 Mathematics for junior colleges.

1970 Accreditation and certification

1971 Differential geometry

1972 Applications of mathematics

1973 No special theme

1974 Operations research and statistics

1975 Teaching of college mathematics

1976 Mathematical modeling

1977 Differential equations and combinatorics

The 50th annual meeting of the Ohio Section was held at Ohio Wesleyan University on April 23, 1966. Celebration of the occasion appears to have been limited to special recognition for A.G. Caris, the only charter member of the MAA in attendance, and Rufus Crane, who had served as Secretary-Treasurer of the Section for 21 years. During the five years leading up the 100th annual meeting, a "Centennial Minute" was observed as part of the program at each spring and fall meeting, and souvenir tchotchkes were given to all attendees. For a complete listing of Ohio Section meetings, see Appendix B.

Joint Meetings

On occasion, meetings of the Ohio Section have been scheduled jointly with those of other cognate organizations. The 1915 Constitution of the Ohio Section specified that the annual meeting "shall be held at the same time and place as that of the Ohio College Association," and the very first annual meeting, in April 1916, was held in connection with meetings of the Ohio College Association, the Ohio Academy of Science, the Ohio Society of College Teachers of Education, and the Association of Ohio Teachers of Mathematics and Science. The Section continued to meet in connection with the Ohio College Association for the next 15 years. In 1922, following the Friday meeting of the Section and the OCA, a joint Saturday meeting was held with the Society for the Promotion of Engineering Education.

On October 20-21, 1967, a special joint meeting of the Ohio Section and the MAA Committee on the Undergraduate Program in Mathematics (CUPM), billed as a "Conference on Collegiate Mathematics in Ohio," was held in Columbus. A total of 208 persons attended, including 54 who were not members of the Section. In April 1979 the 63rd annual meeting of the Ohio Section was held jointly with the Ohio Mathematics Association of Two-Year Colleges (OhioMATYC) on the Middletown Campus of Miami University. (A special Ohio Section fall meeting held ten years earlier at Denison to discuss "matters related to mathematics for junior colleges," may have contributed to the founding of OhioMATYC in 1973.) Other joint meetings with OhioMATYC were held in April 1995 at Ohio State, October 1996 at Denison, October 1998 at Columbus State, October 2000 at Wittenberg, and October 2002 at the Trumbull Campus of Kent State University.

The April 1997 Section meeting at Youngstown State University was held jointly with the Ohio Statistics Education Conference. Joint meetings with the Great Lakes Section of the Society for Industrial and Applied Mathematics (SIAM) were held in October 1982 at Youngstown State University, October 1999 at the College

of Wooster, and April 2014 at the University of Toledo. The Section met jointly with the Ohio Academy of Sciences in May 1970.

Charles Groetsch, U. of Cincinnati, now of The Citadel, at the joint meeting with the Great Lakes Section of SIAM at Toledo.

Programs and Speakers

The core of every Ohio Section meeting has been its program of papers, mostly contributed by members of the Section. The contents of these papers reflect the mathematical and academic trends of the times. The topics may be broadly characterized as classical mathematics, applied mathematics, statistics, history of mathematics, the undergraduate curriculum, and mathematics education. The small sample that follows can only give the reader a flavor of Ohio Section programs. Those who want a fuller taste are invited to examine the reports in the *American Mathematical Monthly* (prior to 1982) and the list of invited addresses (Appendix F).

At the first annual meeting, Chairman R.B. Allen (Kenyon College) started the tradition of giving a Chairman's Address. His paper was an expository treatment of "Hypercomplex Number Systems." Another 1916 paper on a classical topic was "Divergent Series and Their Applications," by C.N. Moore (University of Cincinnati). Raymond L. Wilder (Ohio State University) spoke about the definition of a continuous curve in 1925, and B. H. Redditt (Kenyon College) discussed the symmetry groups of polyhedra five years later. A talk by Henry Blumberg (Ohio State University)

on the theory of transfinite sets could still be called "Controversial Mathematics" as late as 1926. The 1990 President's Address by Olaf Stackelberg (Kent State University) combined two classical topics in a paper titled "Number Theory and Probability: A Rich Interplay." Among recent papers on "modern" topics we find: "The Remarkable Tilings of Roger Penrose," by Milton Cox (Miami University) in 1987; "Fermat's Last Theorem and Elliptic Curves," by Alice Silverberg (Ohio State University) in 1994; and "Random Fractal Images" by Judith Palagallo (University of Akron) in 2001.

Applied mathematics has also been well represented over the years. In 1917, for example, C.J. West (Ohio State University) spoke on "The application of Mathematics to the Biological and Social Sciences," while Paul Biefeld (Denison University) gave a paper on the actual and apparent paths of comets. "The Theory of Relativity" was discussed by A.C. Lunn in 1920, and a certified public accountant from Columbus, W.E. Langdon, spoke on "Mathematics in Accounting" the following year. By the 1950s applied topics included linear programming, photogrammetry, and mathematics related to computers. The 1960s saw a greater emphasis on pure mathematics – perhaps a consequence of the "new math" movement. However, a renewal of interest in the applications of mathematics soon produced papers on such topics as error-correcting codes, graph theory, optimization, and apportionment of votes. By 1979 Yung Chen Lu (Ohio State University) was expounding on "Catastrophe Theory," and the following year D. K. Ray-Chaudhuri (The Ohio State University) presented "An Introduction to Coding Theory." Eugene Gartland (Kent State University) spoke on "Numerical Solution of Problems in Liquid Crystals" in 1990, and Dale Mugler (University of Akron) presented "Music and the Time-Frequency Analysis of Wavelets" in 2004.

It is interesting to observe the growing impact of computers on mathematics. In 1930 George W. Spenceley (Miami University)

discussed the solution of linear equations by means of a "computing machine" that was actually a Monroe mechanical calculator. Nineteen years later, Edmund Churchill and Herman Berman (Antioch College) described an analog computer used to solve simultaneous linear equations. In 1952 – a year after UNIVAC's debut – Eugene R. Epperson (Miami University) reported on "A New 23-Place Logarithm Table" that he and the Spenceleys had just completed for the Smithsonian Institution, and four years later R.W. House (Wright-Patterson A.F.B.) described "The Air Force's Newest Large-Scale Computer," capable of 5000 operations per minute.

By the end of the 1950s there was already talk of the impact of electronic computers on the mathematics curriculum, yet the 1958 meeting included a paper on "advanced slide rule techniques." The Ohio State University computer science curriculum was described in 1965, and the program for the 54th annual meeting in 1970 included eight papers on the theme of computers in the undergraduate curriculum. Five years later "Pocket Calculators in the Classroom" caught the attention of the Section, and by 1978 W.C. Weber (Bowling Green State University) was asking, "What Can a Pocket Programmable Do for You in Numerical Analysis?" By 1989 hand-held calculators had graphics, as well as symbolic algebra capabilities, and the Ohio Section fall meeting included a minicourse on "Computer Algebra Systems and their Classroom Use," led by Zaven Karian (right–Denison University). Four years later Alan Stickney (Wittenberg University) led "A Graphing Calculator Tour," and in 2012 Katie Cerrone (University of Akron) was "Expanding the Classroom with Tablet Technology."

The Ohio Section has also welcomed papers in the area of statistics. For example, at the second annual meeting C.J. West (Ohio State University) presented a paper on the application of statistical theory to problems in the biological and social sciences, and the following year W. E. Anderson (Wittenberg College) discussed the use of statistical (standardized) tests in collegiate mathematics. A paper on correlation coefficients was presented by W. E. Cairns

(Oberlin College) in 1921, and C. C. Morris (Ohio State University) discussed sampling theory ten years later. Statistical distributions formed the basis of a paper by P. R. Rider (Wright-Patterson A.F.B.) in 1954, and "The Role of a Statistics Laboratory on a College Campus" was the title of a 1959 paper by D. R. Whitney (Ohio State University). In 2000 and 2001, respectively, Zaven Karian (Denison University) spoke about "Using Maple for Teaching Probability and Statistics," and Jerry Moreno (John Carroll University) described "Citizens' Stats 101 - Toward a Quantitatively Literate Citizenry."

Interesting and challenging problems that can be solved with the help of undergraduate mathematics are often the focus of contributed papers presented at Ohio Section meetings. It must be remembered that Benjamin Finkel's early interest in mathematics was kindled by such a problem, and that problems have always been a prominent feature of the American Mathematical Monthly.

Papers on the history of mathematics or biographical studies of famous mathematicians often appeal to a wide audience, and the Ohio Section is no exception. A sampling of historical topics at section meetings would include the 1922 paper on "Chinese Algebra" by Emma L. Konantz (Ohio Wesleyan University), and the 1984 paper by V. Frederick Rickey (Bowling Green State University) on "Curves of the Calculus." As early as 1916, Harriet Glazier (Western College for Women) suggested a history course "which should give the historical background of the subject and familiarity with the mathematical literature." O.L. Dustheimer (University of Toledo) gave details of such a course in 1949, and thirty years later Fred Rickey spoke on "History of Mathematics as a Pedagogical Tool."

The life and work of E.H. Moore, a graduate of Woodward High School in Cincinnati, was examined by W.G. Simon (Western Reserve University) in 1933 and by Thomas Hern (Bowling Green State University) in 2012. William Rowan Hamilton was the topic of a paper by J. L. Synge (Ohio State University) in 1944, and

Daniel Otero (Xavier University) talked about "Henry Briggs and the Story of Logarithms" in 2002.

The undergraduate mathematics curriculum has always been a topic near and dear to the hearts of Ohio Section members. At the first annual meeting, A.E. Young (Miami University) addressed the question of "What Elective Courses Following the Calculus Should the Average College Offer?" The following year Louis Brand (University of Cincinnati) spoke on "Senior Year Mathematics for Engineering Students." In 1923 C.N. Mills, reporting on a survey of 26 colleges and universities in Ohio, noted that the number of semester hours required for a mathematics major ranged from 15 to 38. A year later two papers were presented on "sectionizing" of college freshmen on the basis of prognostic tests.

As early as 1931 W.G. Simon (Western Reserve University) expressed "Some Doubts About the Content of Elementary Courses in Calculus." This topic re-emerged in the 1980s when attention turned to a "lean and lively calculus." A 1998 invited address by Susan Ganter (American Association for Higher Education) dealt with "Ten Years of Calculus Reform." Mark Smith (Miami University) revisited the calculus course again in 2005 with "Arc Length and Surface Area – What's up with Calculus Textbooks?"

After World War II, the undergraduate mathematics major was reexamined and became the subject of the 1948 chairman's address by Harry Pollard (Miami University). That same year Wayne Dancer (University of Toledo) reported that the number of semester hours required for a mathematics major in Ohio colleges now ranged from 24 to 36, with the average being slightly more than 28. At the 1958 annual meeting Wade Ellis discussed independent studies at Oberlin College, and Gaylord Merriman reported on three experimental courses at the University of Cincinnati.

Major changes in the undergraduate curriculum, prompted by the work of CUPM, began to occur in the sixties. At the fall 1967 "Conference on Collegiate Mathematics in Ohio," members of var-

ious CUPM panels described the work of this committee and its implications for Ohio colleges and universities. Movements to reform the teaching of calculus and include some discrete mathematics in the first two years shared the curriculum spotlight in the 1980s. In 1998 Douglas Faires (Youngstown State University) talked about "Designing a Modern Applied Mathematics Program," and a CONCUR panel in 2006 discussed the "Future of the Entire College-Level Mathematics Curriculum."

Pre-college mathematics education and teacher training have also been ongoing concerns of the Ohio Section. At the first annual meeting in 1916 Harriet Glazier (Western College for Women) spoke on "What Courses Should Be Offered for Prospective Teachers of Secondary Mathematics?" A round-table discussion in 1920 dealt with "Freshman Mathematics to Meet the Changing High School Mathematics as Presented for Entrance to College." Speakers noted a tendency to minimize the amount of mathematics required for high school graduation, so that "more pupils enter college deficient in mathematics." In 1929 M. O. Tripp (Wittenberg College) spoke about "The Teacher's Course in Mathematics," and a 1947 committee, chaired by Harold P. Fawcett (Ohio State University), recommended a training program for teachers in the elementary schools. That same year the Chairman's Address by S. A. Rowland (Ohio Wesleyan University) was titled, "The Association's Interest in Pre-College Training." The 1957 annual meeting program included talks by Bernard H. Gundlach (Bowling Green State University) on "A New Approach to the Teaching of Elementary Mathematics," and Mildred Keiffer (Cincinnati Public Schools) on "Mathematics in the Cincinnati Public High Schools."

In 1922 Marie Gugle, teaching in the Columbus Public Schools and soon to become President of the National Council of Teachers of Mathematics, spoke about the problem of articulation between high school and college mathematics. A 1983 report by William Beyer (University of Akron) on "School-University Articulation" suggested that the problems identified by Gugle were ongoing six-

ty years later. At the 1994 fall meeting a "swap session" dealt with "Articulation Requirements under Integrated Curricula"

These dual concerns of the K-12 mathematics curriculum and the education of teachers are still common topics for papers at Ohio Section meetings in the 21st century. For example, in 1991 Harvey Keynes (University of Minnesota) asked, "Can Mathematicians Be Involved in Education and Still Survive in the Profession?" David Kullman (Miami University) reported on Project Discovery in 1993 and its goal of promoting inquiry learning among middle school mathematics teachers. A 2006 report by Daniel Otero (Xavier University) told how the mathematics education program at that institution was being redesigned. In 2009 Raymond Heitger spoke about "K-12 Teacher Preparation (or Lack Thereof)" while Bradford Findell (Ohio Department of Education) described current efforts at "Revising Ohio's K-12 Mathematics Standards."

Speakers from Outside Ohio

Although most speakers at our meetings have been members of the Ohio Section, distinguished visitors from outside the state have often been invited to address section meetings. The first such speaker was George Yuri Rainich (University of Michigan) who spoke on "Linear Vector Functions" in 1930. He was followed by Harold T. Davis (Indiana University) in 1933, speaking on "The Predictable Element in Economic Series," and Kenneth P. Williams (also from IU) who spoke the following year on "The Problem of Professional Training."

The first really prominent out-of-stater was Gabor Szegö whose 1935 talk was, "Some Recent Applications of Sturm's Oscillation Method." Szegö, a Hungarian mathematician who was one of the foremost analysts of his generation, was at Washington University at the time, having just come to the US to escape the Nazis in Germany. In 1938 Karl Menger (University of Notre Dame) spoke on "The Foundations of Projective and Affine Geometry." Rounding out the decade, Gilbert A. Bliss (University of Chicago) pre-

sented a paper on “The Hamilton-Jacobi Theory in the Calculus of Variations” in 1939, and the following year another Nazi refugee, the eminent algebraist Emil Artin (Indiana University), spoke on “Introduction of Coordinates in Affine Geometry.” At the 1942 meeting Lester R. Ford (Illinois Institute of Technology) told about “A Million Ways to Solve Equations.”

A number of invited speakers have come from outside academia. In 1972 Murray Klamkin (Ford Motor Company) spoke on “Mathematics in Industry,” and Robert J. Herbold (Proctor and Gamble, and later Microsoft.) talked about “Mathematics in Managerial Science.” In 1981 Philip M. Tuchinsky (also at Ford) presented “How I Do My Job – Systems Development,” and in 1990 Peter E. Castro (Eastman Kodak) talked about “Industrial Mathematics – More Than Applied Mathematics.” At the spring 2000 meeting Katherine Coleman Johnson gave an after-dinner talk about her experiences during a 33-year career in NASA's Space Flight Division. (In 2015 Johnson was honored at the White House with a Presidential Medal of Freedom.) Speakers from the National Security Agency have included Dan McWhorter who gave two talks in 2003: “Introductory Coding Theory” and “Mathematics at the National Security Agency.” The following year J. Kevin Colligan, spoke on “Breaking the Enigma.”

History of mathematics has been a popular topic for speakers from outside the Section. As early as 1941 George A. Miller (University of Illinois) gave a talk on “Mathematical Statements in the History of Mathematics.” Euler scholar William Dunham (Muhlenburg College) spoke about “Euler's Sums and Euler's Crumbs” in 1999. In observance of the millennium in 2000, James Tattersall (Providence College) gave two talks: “Two Books that Spanned a Millennium” and “Mathematical Vignettes from Cambridge.” Fred Rickey, formerly of Bowling Green State University, returned to Ohio several times as a visitor from the US Military Academy at West Point. In 2001 he described “The Palimpsest of Archimedes” and eight years later he told us about “Jared Mansfield: Ohio's First

Mathematician." That same year Judith Grabiner (Pitzer College) gave two history talks: "It's All for the Best: Optimization in the History of Science" and "Lagrange, Symmetry, and Space."

Not surprisingly, many invited speakers have chosen to talk about the undergraduate mathematics curriculum and how to teach it. A sampling of such talks would include: J. Laurie Snell (Dartmouth College, 1958) "The New Dartmouth Mathematics Curriculum," Edwin E. Moise (CUNY, 1975) "The Problem of Learning to Teach," Lynn Steen (St. Olaf College, 1984) "Renewing Undergraduate Mathematics," Alan H. Schoenfeld, (University of California–Berkeley, 1985) "The Reality of Student Problem Solving Behavior – It's Worse Than You Think," Bettye Anne Case (Florida State University, 1990) "Are We Teaching Majors the Right Mathematics? Are We Teaching It the Right Way?" and David S. Moore (PurdueUniversity, 1992) "Teaching Statistics as a Respectable Subject."

Invited speakers have sometimes been incumbent presidents of the MAA. For example, in 1964 R. H. Bing (University of Wisconsin) gave an invited address on "Homogeneity." The following year President Raymond L. Wilder (University of Michigan) spoke about "The Axiomatic Method." Victor Klee (University of Washington) spoke about "Convex Sets in Geometry and Analysis" in 1971, and Ralph P. Boas (Northwestern University) addressed the Ohio Section on "Consequences of Continuity" two years later. Boas returned in 1981 to give a lecture on "The Harmonic Series and the Elephants."

In addition to Rickey and Boas, "repeat performers" have included Peter J. Hilton (Cornell University, Case-Western Reserve University, and SUNY-Binghamton) and Henry O. Pollack (Bell Telephone Labs). Hilton addressed the Section three times: "COSRIMS [Committee on Support of Research in the Mathematical Sciences]: Problems of Implementation of the Recommendations" in 1965, "The Development of Algebraic Topology – A Study in Evolution" in 1979, and "From Elementary

Geometry to Not So Elementary Number Theory: The Final Story" in 1986. Pollack also talked about COSRIMS in 1969 and described "A Loop Switching Problem" in 1974.

Some talks at Ohio Section meetings might be called "just for fun," even though they involved non-trivial mathematics. For example, in 1986 Persi Diaconis (Stanford) spoke on "Combinatorics and Card Tricks." Frank Ryan (Rice), who led the Cleveland Browns to their last league title in 1964, is the only Ph.D. in mathematics to have played in the National Football League. One of his two talks in 2007 was titled, "Resolved, that a Football Is a Mathematical Object," and the other was "Mathematics and Truth: Have You Checked Your Foundation Lately?" After his talk, Frank Ryan autographed the Ohio Section's official NFL football.

The Ohio Section has not been averse to employing the latest in educational technology. For example, three of the papers delivered at the 1917 annual meeting were illustrated by "lantern slides." By 1930 Ida M. Baker (Western Reserve University) was involved in an experiment with the Cleveland Public Schools, teaching arithmetic lessons via radio. A later generation of instructors began to replace radio with educational television, and mathematical film festivals were featured at section meetings in 1966, 1972, and 1973. In the seventies and eighties video cassettes, computers, and hand-held calculators appeared in ever-increasing numbers – not only in Ohio classrooms, but in talks presented at section meetings as well. Today PowerPoint slides and multi-media presentations are standard tools for most Ohio Section speakers.

John Michel presenting the President's address
at the University of Akron, April 13, 1996.

Student Speakers

In the early 1950s J. Sutherland Frame introduced Pi Mu Epsilon student paper sessions at the Joint Summer Mathematics Meetings, and it was inevitable that students would eventually participate in the Ohio Section meetings. The earliest record of student papers occurs in April, 1957, when A. J. Gruber (Kent State University) spoke on "a serial numbering system for permutations." Nearly a decade later, in 1968, G.J. Sherman (Bowling Green State University) and Edward Molnar (Ohio University) spoke on "The Rim of an R-group" and "The History of Ryley's Problem," respectively. Two years later there were three student speakers on the program, followed by two students in 1971 and seven students, representing four universities, in 1972. This began a tradition of student papers at the spring meetings that has grown to rival the contributed papers by faculty in quality as well as in number.

By 1977 the number of student papers presented at the Ohio Section spring meeting had grown to 31, and nearly half of the 216 persons registered at that meeting were students. In 2013 fifteen of the thirty contributed papers were presented by students. To promote student participation, a Committee on Student Members (CONSTUM) was formed, originally as a subcommittee of the Committee on Section Activities and then, in 1987, as a standing committee in its own right. Other sections picked up the idea of

student paper sessions and, by 1982, seventeen sections reported a total of 98 student speakers, with the Ohio's 22 leading the pack.

At one time student papers were scheduled in specially designated sessions, but now they are intermingled with the other contributed papers. For a number of years it was the practice of the Ohio Section to give awards to three students for outstanding papers. Later, each student speaker received a free MAA membership. Today, however, student speakers only get free registration, the same as other students who attend the meeting, and they are invited to partake of a pizza party, provided by the host institution.

Ohio Section Programs and World Affairs

When the Ohio Section (along with the MAA itself) was founded in the closing days of 1915, World War I had been raging in Europe for nearly a year and a half, although the United States remained neutral. The Second Annual Meeting of the Ohio Section was held on April 6, 1917 – the very day that the United States declared war on Germany. The Secretary's report for the following year notes that an evening round table discussion on standardized testing "continued with interest until adjournment was necessitated by the closing of [the Ohio Union] under the war department regime."

The overall theme of the 1919 annual meeting was "Mathematics and Warfare." In his Chairman's Address, C. N. Moore (Cincinnati) called attention to "the great importance of mathematics in various war activities, due to its extreme usefulness in many technical and scientific labors." Contributed papers at that meeting included "The Mathematical Features of Navigation" by D.T. Wilson (Case School of Applied Science), "Ballistics as Applied Mathematics" by M.E. Graber (Heidelberg University), and "The Mathematics of Aviation" by S.E. Slocum (University of Cincinnati). The Friday evening round table centered upon war activities and lessons learned from the S.A.T.C. (Student Army Training Corps – a forerunner of ROTC). Harris Hancock (University of

Cincinnati) reported on "extensive mathematics tests given to S.A.T.C. applicants at the University of Cincinnati, which indicated very inadequate preparation on the part of the men."

Another paper on ballistic tables, presented at the 1921 meeting by A. A. Bennett (University of Texas), appears to have been the last one with direct military applications to be presented at an Ohio Section meeting until R. S. Burington (Case School of Applied Science) spoke on the "use of conformal mapping in shaping wing profiles" in 1939.

The Great Depression notwithstanding, the 1930's found the Ohio Section growing in numbers and enthusiastically supporting the annual meetings. Attendance records were set at Section meetings in 1933 and 1938. At the latter, C.C. Morris (Ohio State University) "analyzed the mathematical aspects of the recovery program of President Roosevelt, showing why he took the steps he did, their result, and prophesying what his future steps [would] be." In 1952 Professor O.L. Dustheimer (then retired), reconsidered one of the most far-reaching of these steps in a paper on "Social Security and College Retirement Programs."

The 26th Annual Meeting, in April 1941, featured contributed papers on "Aerial Photogrammetry" by J. R. Musselman (Western Reserve University), "Aerodynamics and Airplane Performance" by Major Bradley Jones (University of Cincinnati), "Stress Analysis in Airplanes" by H. W. Sibert (University of Cincinnati), and "Ciphering Systems and Deciphering Methods" by R. F. Rinehart (Case School of Applied Science). These topics suggest that mathematicians were anticipating our fast-approaching involvement in World War II. It is also worth noting that C. C. Morris, a charter member of the MAA, spoke at that meeting on "The first twenty-five years of the Mathematical Association."

By 1942 America was fighting a war on two fronts, and a symposium invited those present to compare experiences "as to the effect of the present emergency upon the nature and content of courses

offered." In 1943 H. K. Justice (University of Cincinnati) reported on the results of a questionnaire designed to ascertain the "effects of the war upon mathematics in Ohio," and Henry Blumberg (Ohio State University) responded with an address titled "Whither American Mathematics?" C. T. Bumer (Kenyon College), in a talk about "pre-meteorological training," emphasized the need to quickly train meteorologists to meet the needs of the armed forces and the importance of differential equations in that training. The following year C. O. Williamson (College of Wooster) demonstrated a "new navy plotting board" to solve vector triangles in navigation. There was no Ohio Section meeting in 1945 due to wartime restrictions on non-essential travel.

In the decade immediately following World War II several papers dealt with problems of interest to the military – especially the Air Force. R. F. Rinehart (Case School of Applied Science) presented a mathematical solution to a "problem of rapid scanning radar antenna" in 1948. Research and development work at the Air Force Institute of Technology at Wright Patterson Air force Base became the subject of several talks. Brigadier General L. I. Davis shared examples requiring differential equations, vector analysis, and probability and described an "electronic war game" in 1952. The following year attendees learned about the Air Force's "newest large scale computer," capable of 5000 operations per minute and having about 100K of RAM. A sequel to the 1941 paper on photogrammetry was presented at the 39th Annual Meeting in 1955.

Despite these scattered presentations on applications of mathematics to warfare, it must be observed that, even in wartime, the great majority of papers at Ohio Section meetings continued to deal with subjects for which the Association was founded. These included: exposition of topics in pure and applied mathematics, the undergraduate curriculum, student preparation (or lack thereof) in mathematics, and the preparation of K-12 mathematics teachers. These remain among the principal foci of the Ohio Section in our 100th year.

Entertainment

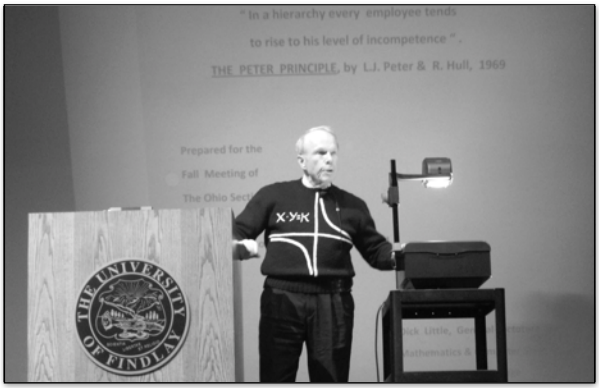
In recent years attendees at Ohio Section meetings have been treated to some professional (and not-so-professional) entertainment.

As early as Fall 1988, *The Logarythms*, a barbershop quartet from the Bowling Green State University Department of Mathematics and Statistics (Cliff Long, Dean Neumann, Herb Hollister, and Charles Holland) sang several "numbers" for the Section, including π and S_4 (the Symmetric Group of the 4! permutations on four hats as a sequence of transpositions). This was was followed by Richard Little's slide show on "A Tour of China." *The Logarythms* returned with some more numbers in spring 1991. In April 2012 *Calculus the Musical* was performed at Xavier University, and the following year at Baldwin Wallace, Colin Adams and the Möbiusbandaid Players presented *Mathematically Bent Theater*, including "Pythagoras's Darkest Hour," "The Book," and "Lord of the Rings."

Ohio Section meetings today may seem less formal than those of 100 years ago, but they are certainly as informative and interesting. Section members continue to regard them as an important way of renewing professional friendships, rekindling enthusiasm, and keeping up to date with the latest trends in collegiate mathematics.

Section Meetings

Harold Putt and Aparna Higgins during a break.

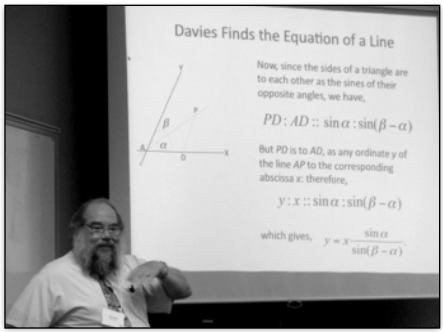


Dick Little, appropriately attired.

Friday Evening Banquet

Section Meetings

David Kullman at the Book Exhibits



Fred Rickey

A panel discussion with Dick Little at the podium

Section Meetings

25th anniversary (Michael Zwilling, Constantine Kilorys, Daniel Otero)
and 50th anniversary (Bob Clark, Ernest Leach) honorees in 2002

Roger Marty, Tom Dence, Fred Rickey, David Cusick,
Frank Morgan, and Danny Otero, 1998

Ohio Section Officers

The 1915 Constitution of the Ohio Section provided for two officers, a Chairman and a Secretary-Treasurer, each of whom was to be elected at the annual meeting. These two officers and "an additional member elected by the Section at the annual meeting" constituted the Executive Committee, which was to "transact all business of the Section between meetings." Immediately after adopting the constitution, the members present elected Reginald B. Allen (Kenyon College) as Chairman, Gordon N. Armstrong (Ohio Wesleyan University) as Secretary-Treasurer, and C. C. Morris (Ohio State University) as the third member of the Executive Committee.

The first annual meeting of the Section was held less than four months later, on April 21-22, 1916. At the business session Theodore M. Focke (Case School of Applied Science) was elected Chairman, while Armstrong and Morris were re-elected to their respective positions. Thereafter a new Chairman and third member of the Executive Committee were elected each year, but the Secretary-Treasurers were re-elected many times. In fact, while there have been one hundred Chairmen/Presidents of the Ohio Section since 1915, only ten members served as Secretary-Treasurer from the founding of the Section until 2006. This longevity of service on the part of the Secretary-Treasurers has provided much-needed continuity to the organization of the Section.

The third member of the Executive Committee was often chosen from the college or university at which the following year's Annual Meeting would be held. In this way, the Executive Committee included a member who could help coordinate local arrangements for the meeting. This office was abolished in 1965, after the 1964 *Constitution and By-Laws* were adopted.

In 1923 a three-member Program Committee was created, with members being elected for one-, two-, and three-year terms, respectively. At each annual meeting thereafter, the senior member

of the committee would retire, and a new member would be elected. The senior member of the committee was designated as its Chairman. This three-year rotation scheme continues today. There have been years when more than one new member was elected to the Program Committee, undoubtedly due to an early resignation.

Over the years it has not been at all unusual for a member of the Program Committee to later be elected Section Chairman, although the reverse order sometimes occurred during the early years. In fact, four out of the first six Program Committee Chairmen had previously served as Section Chairmen. Forbes B. Wiley (Denison University), who was Section Chairman in 1917-18, served as Program Chairman twice (1938-39 and 1946-47); and I. A. Barnett (University of Cincinnati) held that office three times (1926-27, 1941-42, and 1949-52) with a term as Section Chairman (1933-34) also in the mix.

Similar patterns occur among the "third members" of the Executive Committee. For example, after completing his term as Program Chairman in 1924, the first Section Chairman, R. B. Allen (Kenyon College), was elected as the Third Member. S. E. Rasor (Ohio State University) went from being Third Member (1919-20) to being Section Chairman (1920-21), and he was elected to the Third Member office twice more (1929 and 1937). The very first Third Member, C.C. Morris (Ohio State University), was re-elected to that office in 1930. The names and terms of office of all Section Chairmen/Presidents, Program Chairmen, and Executive Committee Third Members are listed in Appendix C.

Although members of the Executive Committee normally served one-year terms, and members of the Program Committee served for three years, there was an exception during World War II. Because of the war effort, no annual meeting – and hence no election – was held in 1945. This meant that Chairman J. B. Brandeberry (University of Toledo) and Executive Committee Third Member H. M. Beatty (Ohio State University) served from 1944 to 1946, and

the terms of the Program Committee members were likewise extended.

Section Governors were approved by the MAA at its annual meeting in December, 1946. Their election was to be conducted by the Secretary-Treasurer of the Association, and their term of office was specified as three years. The section governors are voting members of the national MAA Board of Governors, which meets twice a year, and they also serve as liaisons between their sections and the Association.

Governor elections were phased in over a three-year period, with the Ohio Section electing its first Governor, Forbes B. Wiley (Denison University), in 1949. Professor Wiley had served as the Section's third Chairman in 1917-18. As noted in Appendix C, there have been 23 Ohio Section Governors since 1949. Also, Zaven A. Karian (Denison University) served as an MAA Governor-at-Large from 1987 to 1990.

In 1964 the original *Constitution* of the Ohio Section, which had been in effect for nearly fifty years, was replaced by a new *Constitution and By-Laws*. This document provided for the offices of President, Past-President (the most recently retired President), President-Elect (who would automatically become President the following year), and Secretary-Treasurer. The Executive Committee was to be made up of these four officers. A year later, however, at the request of the MAA Committee on Sections, the word "President" was replaced by "Chairman" wherever it appeared. In 1988 the title "President" was finally accepted, and Charles Hampton (College of Wooster) became the first President of the Ohio Section.

In 1992 the *Constitution and Bylaws* were again revised and renamed simply as *Bylaws*. The Governor was added to the list of officers, and the Executive Committee was expanded to include, along with the officers, chairs of the Program Committee and the

other standing committees. (See the chapter on Committees for details about the latter.)

The most recent (2015) revision of the *Bylaws* lengthens the term of office of the President to two years, specifies three-year terms for the Secretary and Treasurer, and includes (when the positions are filled) the offices of Secretary-Elect and Treasurer-Elect. The Coordinator of Ohio NExT has also been added to the Executive Committee. The first Ohio Section President to serve a two-year term will be Chris Swanson (Ashland University), beginning in April 2016.

In 2006 the office of Secretary-Treasurer was split, and the Section now has a Secretary and a Treasurer, both of whom are members of the Executive Committee. William Friel (University of Dayton), who was serving as Secretary-Treasurer at the time, remained as Treasurer for one more year, while Mark De Saint-Rat (Miami University-Middletown) became the first person to hold the office of Ohio Section Secretary.

The Ohio Section minutes for December 31, 1915, mention a committee on nominations, and it seems likely that such a committee was appointed every year. A comment in the 1954 records of the Section suggests that such committees were usually made up of "former chairmen and senior members who happened to be at the [annual] meeting." The 1964 *By-Laws* specified that the nominating committee "shall consist of the three most recent Past-Chairmen of the Section..." Nominations from the floor at an Annual Meeting are also permitted, but there is no record of any election in which an office was contested. Presumably each nominating committee did its job well and presented a single slate of candidates that was acceptable to the members attending the meeting.

Although women have been active in the Ohio Section since its inception, the first female to hold an office in the Section was Mary E. Sinclair (Oberlin College) who served as Program Chairman in 1937-38. Marion D. Wetzel (Denison University) also held

that office in 1954-55 and would go on to become the first woman to chair the Section (1978-79). During the last quarter-century, nearly 25 percent of the Ohio Section Presidents have been women.

In addition to the elected officers and other members of the Executive Committee, today's Ohio Section functions with the services of a number of appointed leaders. Over the years these have included chairs of *ad hoc* committees, contest chairs, awards committee chairs, newsletter editors, webmasters, public information officers, department liaison coordinators, and liaisons to Ohio-MATYC and OCTM. These appointed officers are not members of the Executive Committee, but are invited to attend its meetings to report on various Section programs and activities and advise the Executive Committee members on appropriate courses of action.

Past Presidents were presented with commemorative President's gavels in 1997.
Front row: Janet Roll, Charles Hampton, Cliff Long, Dick Horwath, Dick Little, Robert Wilson.
Middle: Floyd Barger, Thomas Hern, Alan Poorman, Milt Cox, Will Hahn, James Smith.
Back row: John Michel, Al Stickney, David Kullman, Olaf Stackelberg, William Friel, Richard Laatch, Doug Faires, Fred Leetch (hidden), William Beyer, Bernard Yoswiak.

Ohio Section Committees

Rare indeed is an organization consisting of more than ten persons that does not delegate some of its ongoing work to committees. Although committee jokes are legion, by and large it is the case that committees are the backbone of the organization. The Ohio Section of the Mathematical Association of America is no exception to this rule.

Actually, the Ohio Section's first committee was formed before there was an Ohio Section or even an MAA. On December 30, 1915, while the organizational meeting of the Association itself was still in progress in Columbus, Ohio, twenty-five members of the Ohio Teachers of Collegiate Mathematics (OTCM) convened at 2:00 p.m. in Columbus. After passing a motion favoring the formation of the OTCM into a "section of The Mathematical Association of America," the group directed that a committee of five be appointed to:

a) issue a call to all teachers of collegiate mathematics in Ohio to join in this project;
b) formulate a scheme of organization; and
c) prepare, if possible, a program for the regular meeting of the Section.

The membership of this first committee consisted of Professors C.C. Morris (Ohio State University), T.M. Focke (Case School of Applied Science), W.D. Cairns (Oberlin College), M.E. Graber (Heidelberg University), and Harriet E. Glazier (Western College for Women). Already two important precedents had been set, which have been followed with reasonable consistency in the Section for one hundred years: there were representatives of major universities and four-year colleges, and both men and women were represented on the committee.

At 2:00 p.m. on December 31, 1915, less than twenty-four hours after the formation of the committee, the OTCM reconvened and adopted a *Constitution* that the committee had written overnight.

The organizing committee apparently had done its work well, because this hastily drawn *Constitution* was left unchanged for nearly 50 years.

The 1915 *Constitution* provided for only one committee – an Executive Committee consisting of the two section officers (Chairman and Secretary-Treasurer) and a third member to be elected at the Annual Meeting. A three-member Program Committee was later established in 1923. There is no reference to a Nominating Committee prior to 1954 when Chairman Paul R. Rider (Wright-Patterson AFB) appointed one. The latter two committees were formally defined in the 1964 *Constitution and Bylaws*.

Throughout its history the Section has, from time to time, constituted *ad hoc* committees to deal with specific current interests and issues. These typically concerned state requirements for mathematics in elementary and secondary schools, college entrance requirements, the undergraduate mathematics curriculum, or preparation of mathematics teachers.

Section records mention the following committees, formed in the years prior to 1964:

1922: A committee of seven was elected to investigate the mathematics situation in Ohio with respect to state requirements, elementary and high school courses, college entrance requirements, college courses, and teacher training. Chaired by C.N. Moore (University of Cincinnati), the committee, in turn, appointed six subcommittees to deal with the individual issues.

1923: A committee, consisting of Professors G.N. Armstrong (Ohio Wesleyan), C.L. Arnold (Ohio State), and A.D. Pitcher Western Reserve), was appointed to address the question of why high school freshmen and college freshmen should consider electing mathematics.

1931-33: A committee chaired by I.A. Barnett (University of Cincinnati) made a study of the mathematics being taught

in Ohio's high schools and the preparation of students entering college.

1940: A committee was appointed to investigate the possibility of some sort of cooperation with the Ohio Academy of Science.

1945: A Committee on Certification of Teachers, also chaired by Professor Barnett, prepared and sent to the State Board of Education and members of the Ohio Section a proposed course of study for prospective teachers of elementary school mathematics.

1947: A Committee on Pre-Service Education of Teachers, under the chairmanship of Professor Harold Fawcett (Ohio State University), prepared a statement outlining the mathematical topics which prospective elementary teachers should understand. (Whether this was a continuation of the 1945 Barnett committee or an entirely new group is not clear.)

1951: A committee chaired by Professor Forbes B. Wiley (Denison University) was appointed to investigate the awarding of prizes to top high school mathematics students in the state. The broader issue was how to promote interest in mathematics among secondary school students.

1955: A special Nominating Committee was appointed to select nominees for the Section's member of the MAA Board of Governors, the election to be conducted by the national office.

1956: An ad hoc committee considered whether or not the Section should support the censure of an Ohio institution by the American Association of University Professors by refusing to hold a meeting on the campus of the institution. (The committee was able to work out a solution that avoided a direct confrontation of the issue and was satisfactory to all parties concerned.)

1957: At the request of the national MAA office, a Committee on High School Contests was named to supervise the then new National High School Mathematics Contest in Ohio. Professor Harold Tinnappel (Bowling Green State University) was the elected chairman of this committee. After a few years this committee was dissolved, and a Contest Director was appointed who would report directly to the Executive Committee.

1962: For a time a Committee on Cooperation with State Officials, chaired by Professor W. R. Van Voorhis (Fenn College), was recognized as a standing committee of the Section. There is no record of when it began and ended nor of the issues that prompted its existence.

1963: In April 1963 a committee chaired by Professor Clarence H. Heinke (Capital University) was named for the purpose of making periodic examinations of the mathematics requirements for teachers of mathematics in Ohio. This interest in certification was stimulated by recommendations on the subject from the MAA's Committee on the Undergraduate Program in Mathematics (CUPM). In a few months this new committee evolved into CONTTAC, as part of the major Ohio Section reorganization about to be described.

It is very likely that, during the first half-century of the Section's existence, other *ad hoc* committees were appointed, carried out their assignments, and expired without being recorded in the Section files.

The 1963-64 academic year saw changes of monumental proportions in the organization and subsequent level of activity in the Ohio Section. On November 16, 1963, the CUPM Panel on Teacher Training held a conference in Cleveland. During this conference a group of some thirty-two Ohio college mathematics faculty members met and expressed an interest in seeing the Ohio

Section Committees

Section pursue its mission of promoting the cause of mathematics in the region more aggressively than it had done in the past. In particular there was talk of revising the Section Constitution and working to improve the freshman mathematics program.

Subsequently, under the able leadership of Section Chairman Charles Capel, (Miami University) a special meeting of the Section was held at Denison University on December 7, 1963, to discuss the items mentioned above as well as the general question of "activating" the Section. The outcome of this special meeting was the creation of three key committees:

> CONCUR (Committee on Curriculum) chaired by Professor David Lipsich (University of Cincinnati);
>
> CONTTAC (Committee on Teacher Training and Certification) chaired by Professor Lyman Peck (Miami University);
>
> COB (Committee on By-Laws) chaired by Professor Wade Ellis (Oberlin College)

All three committees were directed to prepare recommendations for their respective areas in time to present these at the annual meeting of the Section in May 1964.

The committees with these mnemonic titles did their work well. CONCUR proposed a resolution that, beginning in September 1966, no college credit be given in four-year degree programs for courses in pre-calculus, algebra, or trigonometry and further that, after September 1968, these courses should no longer be offered in four-year colleges, even on a non-credit basis. After the resolution passed, copies were sent to college mathematics departments and academic administrators. Even though the recommendation could only be advisory, many institutions did attempt to conform at least to its spirit, and often to its letter. Alas, within a decade or so, deterioration in the mathematics preparation of many first-year college students forced the abandonment of this noble effort.

Section Committees

CONTTAC made three recommendations pertaining to the training and retraining of secondary school teachers of mathematics. These were keyed to the CUPM recommendations and, in particular, specified a curriculum for teachers of calculus in high schools.

COB proposed adoption of a set of By-Laws to replace the Section Constitution – probably the first formal change since the 1915 adoption of the original Constitution. These By-Laws provided for three standing committees:

> Executive Committee – composed of the Chairman, Past Chairman, Chairman-Elect and Secretary-Treasurer.
>
> Nominating Committee – composed of the three most recent section chairmen who were not members of the Executive Committee.
>
> Program Committee – composed of three members, elected on a staggered basis to serve a three-year term.

It was agreed that CONTTAC and CONCUR should not be frozen into the By-Laws. This decision allowed these committees to be modified easily to meet changing needs. A year later (1965) COB, on the advice of the MAA Committee on Sections, recommended minor changes in the 1964 version of the By-Laws. After this revision COB was discharged.

Following their very active years of 1964 and 1965, CONTTAC and CONCUR continued to exist, and persons were regularly appointed to succeed those whose terms were expiring. Membership on both committees included high school, as well as college teachers of mathematics and, for awhile, they were recognized as joint committees of the Ohio Section and the Ohio Council of Teachers of Mathematics (OCTM). In 1967 CONTTAC issued a report and recommendations on the training of elementary and secondary school mathematics teachers. This report was widely circulated, and most of its recommendations were incorporated into the revised teacher certification standards adopted by the State Board of

Education the following year. By the close of the decade, however, CONTTAC and CONCUR had lapsed into inactivity.

In May 1971 the Executive Committee, at the urging of then-Chairman Elwood Bohn (Miami University), reactivated both CONCUR and CONTTAC, formed a new COB to undertake a complete bylaw revision to meet recommendations of the MAA Committee on Sections, and set up another committee to be known as COCCU (Committee on Cooperation Between Colleges and Universities). This new group was to explore ways in which the various mathematics departments might cooperate - joint seminars, colloquia, etc.

When the Section began to invite undergraduates to present papers at spring meetings, a special committee, acting under the COCCU umbrella, was charged specifically with promoting this effort. The success of the student activities and the summer short courses led to the renaming in 1980 of COCCU as CONSACT (Committee on Section Activities), with sub-committees responsible for specific projects. In 1987 two of these subcommittees themselves achieved the status of standing committees. CONCON (Committee on Contests) for a while was responsible for administering the MAA contests (AHSME and AJHSME) in Ohio, and CONSTUM (Committee on Student Members) is charged with promoting student chapters of the MAA.

CONTTAC has undergone two name changes during the course of its history. In the 1980's it was felt that "teacher education" was a more appropriate term than "teacher training," so the committee became CONTEAC. In 2004, when the state of Ohio began issuing teacher licenses instead of certificates, the committee was renamed CONTEAL (Committee on Teacher Education and Licensure). Today seven committees (Executive Committee, Program Committee, Nominating Committee, CONSACT, CONCUR, CONTEAL, and CONSTUM) are explicitly named in the Ohio Section By-Laws.

Section Committees

In 1979 and 1980 two more *ad hoc* committees were appointed – one to investigate problems resulting from the need at many institutions to teach computer science in departments of mathematics, and the other to write a 75-year history of the Ohio Section. These were dissolved when their work was completed, but the latter was reconstituted in 2008 as a Centennial Committee, chaired by David Kullman (Miami University), to prepare for the Section's Centennial in 2015. That committee not only produced the *Centennial History* that you are reading, but also prepared Centennial Notes in *Ohio Focus*, Centennial Minutes and tchotchkes at fall and spring section meetings, and a special program for the 100th Annual Meeting in 2016.

It is no accident that the period of greatest activity in the Ohio Section has occurred during the half-century since Charles Capel and his colleagues established the modern committee system. Many members have been regularly and actively involved in the Section as the result of their service on a section committee. Personal and professional friendships and cooperation have flourished. From these contacts new ideas have emerged and have been constructively implemented. The accomplishments of the Ohio Section have become known and emulated throughout the other twenty-eight sections of the Association. Of course it is the members who have brought this about, but only by working together on committees have the members been so effective.

President Dwight Olson chairing Executive Committee meeting, Spring 2006, with guest and former Section member Joan Leitzel in attendance. Phil Blau is sitting next to her.

Ohio Section Activities

At first the only activities of the Ohio Section were its annual meetings. However, many of the papers and discussions at these meetings led to programs or projects that involved members' participation at other times of the year. Concerns about the undergraduate curriculum, teacher preparation, and articulation between secondary schools and colleges formed the basis for some of the earliest activities.

A 1920 round table discussion of the "changing high school mathematics as presented for entrance to college" revealed a tendency to minimize the amount of mathematics required for high school graduation. In addition to the required courses in beginning algebra and plane geometry, most high schools offered elective courses in advanced algebra and solid geometry, but these were often avoided by the students. As a result, there was a "tendency for more pupils to enter college deficient in a half-unit or more of mathematics." A feeling was also expressed that "the same care in selecting teachers of mathematics was not exercised nor the same respect accorded mathematics as was done in former years."

Two years later the Ohio Department of Education ruled that a unit of mathematics was no longer required in every high school curriculum. At the urging of Section Chairman B.F. Yanney (College of Wooster), a committee of seven was elected, with power to appoint subcommittees, for the purpose of investigating the mathematics situation in Ohio with respect to state requirements, elementary and high school courses, college entrance requirements, college courses, and teacher training. This committee, known as the "Yanney Committee," was chaired by C.N. Moore (University of Cincinnati). Its subcommittees presented detailed reports to the Section over the next two years, dealing with college entrance requirements, teacher training, and college and high school mathematics courses.

Section Activities

Beginning in 1923, members of the Section were invited to suggest reasons why high school students and college freshmen should continue electing mathematics. Statements on the theme "Why Elect Mathematics?" were mailed to high schools and colleges annually for several years. Participants at the 1924 annual meeting engaged in a discussion concerning "What should be done with, for, and to the [college] freshman having one unit of algebra?"

A decade later the articulation question surfaced again, as the Ohio Section sponsored tests for freshmen registered in mathematics courses. On the first day of the 1931 fall term these tests were given at eleven Ohio colleges and universities. Of the 1446 students taking the tests, 642 obtained a score of less than 50%.

In the years following World War II a committee, chaired by Harold P. Fawcett (The Ohio State University), prepared a model course of study for elementary school teachers and submitted it to the teacher training institutions in Ohio. The achievement of precollege students in mathematics was again perceived as deteriorating, and the Section looked for ways to beef up college admission standards and promote student interest in mathematics. In 1953 a resolution was passed and sent to the Governor and the Education Committees of the Ohio House and Senate, supporting a bill for the establishment of a commission to study the Ohio educational system. In particular, the Ohio Section urged that statewide standards of achievement and uniform college entrance examinations be established.

In the late 1960s, and again in the 1980s, the Ohio Section, through its Committee on Teacher Training and Certification (CONTTAC) influenced the revision of teacher certification standards by testifying at open hearings and by submitting reports, based on CUPM guidelines, to the State Board of Education. The Section also made an unsuccessful attempt to persuade Ohio colleges and universities to abolish undergraduate credit for courses in algebra and trigonometry.

Mathematics Competitions

In 1950 the Metropolitan New York Section of the MAA sponsored its first Mathematical Contest for high school students. Interest in this contest quickly spread within the state of New York and throughout the country, and by 1957 the MAA had decided to sponsor a national contest. The Ohio Section, at its annual meeting in 1957, voted that "it is interested in sponsoring the Association high school mathematics contest in this region," and authorized the establishment of a standing committee to assume local responsibility. The first competition held on a national basis, jointly sponsored by the MAA and the Society of Actuaries and known as the Annual High School Mathematics Contest, was held on March 27, 1958.

The first Ohio Contest Coordinator was Harold Tinnappel (Bowling Green State University), who served from 1958 to 1963. He was succeeded by Louis J. Green (Case-Western Reserve University) from 1963 to 1973. During that time new sponsoring organizations were added and the word "Contest" was changed to "Competition." In 1977 the Competition adopted its present name, "American High School Mathematics Examination" (AHSME). By this time Leo Schneider (John Carroll University) had succeeded Louis Green as the Ohio coordinator.

Under Professor Schneider's leadership, the period from 1974 to 1986 saw a tremendous growth in the number of Ohio high schools, as well as the number of Ohio students participating in the contest. By 1983 Ohio led the nation in both categories. A new record was established in 1985, when 31,156 Ohio students at 516 high schools took the AHSME. That same year John P. Dalbec, of Youngstown, was among the eight medalists in the 14th USA Mathematical Olympiad (USAMO). By 1990 participation had fallen off slightly, to 27,555 students and 497 high schools.

Schneider was appointed to the national MAA American Mathematics Competitions Committee in 1980, and he chaired that

committee from 1988 to 1994. Dwight Olson and David Stenson (both at John Carroll University) took over as Ohio coordinators for the AHSME, and Bill Higgins (Wittenberg University) became Ohio's AJHSME coordinator for the junior high school student competition. Today these competitions are known as AMC 10/12 and AMC 8, respectively.

The first annual Ohio Section Student Team Competition was held during the 2004 spring meeting at the University of Cincinnati. Seventeen teams, representing nine schools and including a total of 44 students, participated. Teams from Kenyon College captured both first and third places, while second place went to Ohio Wesleyan University. Cash awards of $120, $60, and $45, respectively, were awarded to those teams. More recently, in spring 2013, 65 students, representing 12 institutions, participated as members of 22 teams. First, second, and third place cash prizes of $150, $120, and $90, respectively, were awarded to the teams from Case Western Reserve University (first and second) and Denison University (third).

Case-Western Reserve Team 2 receiving their award. 2009

Beginning in 2011, the competition was renamed the Leo Schneider Student Mathematics Competition in honor of this past Ohio Section leader who had a reputation as one of the country's premier problem posers. That year a record number of 70 students, forming 24 teams from 13 schools, participated in the Competition.

In the early 1970s the Committee on Cooperation Between Colleges and Universities (COCCU), under the leadership of Donald O. Koehler (Miami University), established a visiting lecturer program within the Ohio Section. For 1973, the first year of its existence, there were 80 volunteers from 19 institutions. However, few requests for speakers were forthcoming, and the program was discontinued after two years. In the meantime, COCCU began its highly successful series of summer short courses, details of which will be found later in this chapter.

Mathematics Organizations for Students

Undergraduate mathematics clubs existed in Ohio even before the MAA was founded. The Mathematics Club of Oberlin College dates back to 1894, and another club was organized in Oxford at The Western College for Women in 1905 "to stimulate interest in certain phases of mathematics which, while closely related to class work, do not fall directly under it." The Denison Mathematics Club came into existence in 1915, under the leadership of Professor Forbes B. Wiley, and was formalized in January 1916. Membership was open to any student or member of the faculty who desired to join.

The Pi Mu Epsilon mathematical fraternity was organized at Syracuse University in 1914, and the second chapter of this organization was chartered at Ohio State University in October 1919. Kappa Mu Epsilon, another national mathematics honorary society, was organized in 1931, and the Ohio Alpha chapter was installed at Bowling Green State University on April 24, 1937. All these clubs hold regular meetings at which papers are presented by student and faculty members. In 2015 there were eighteen active chapters of Pi Mu Epsilon and five active chapters of Kappa Mu Epsilon in Ohio. Four members of the Ohio section – Milton Cox (Miami University), Doug Faires (Youngstown State University), Robert S. Smith (Miami University), and Angela Spalsbury (Youngstown State University) – have served as national Presidents of Pi Mu Epsilon,

and Leo Schneider (John Carroll University) has been its national Secretary-Treasurer. James Smith (Muskingum College) has been the national President of Kappa Mu Epsilon.

In the 1930s Mary Sinclair (Oberlin College) and Wayne Dancer (University of Toledo) had presented papers extolling the virtues of mathematics clubs. A half-century later several Ohio Section Chairmen, including Donald Koehler (Miami University), Douglas Faires (Youngstown State University), and Milton Cox (Miami University), called for MAA support and recognition of undergraduate mathematics clubs. In 1988 the MAA finally approved the establishment of student chapters at colleges and universities. A mathematics department may affiliate its existing mathematics club with the national organization or create a new one. Interest in mathematics is to be the primary qualification for membership. Professor Cox along with Will Hahn (Wittenberg University) and Aparna Higgins (University of Dayton) served on the MAA committee that developed this plan for student chapters. By 2015 MAA Student Chapters had been established on 22 Ohio campuses.

Faculty Awards

In 1991 the Mathematical Association of America instituted *Awards for Distinguished College or University Teaching of Mathematics* in order to honor faculty who have been "widely recognized as extraordinarily successful in their teaching." The following year the Ohio Section began giving its own Award for Distinguished College or University Teaching of Mathematics to recognize its members who foster curiosity and generate excitement about mathematics in their students, have had an influence in teaching that goes beyond their own institution, and whose teaching effectiveness can be documented.

The recipient of the Ohio Section Distinguished Teaching Award becomes a nominee for the national MAA award, which was renamed in 1993 to honor Deborah and Franklin Tepper Haimo.

Each year at most three college or university teachers are honored with the MAA award, and over the years two winners have come from Ohio – Frederick Rickey (Bowling Green State University) in 1992 and Aparna Higgins (University of Dayton) in 1995. A complete list of recipients of the Ohio Section Teaching Award is in Appendix G.

Teaching award winners - 2007
Back row: Thomas Dence (2003), Thomas Price (2006), David Singer, (2005) Leo Schneider (2004), Al Stickney (2001. Front row: Aparna Higgins (1995), William Higgins (2007).

2012, left to right: William Higgins (2007), Aparna Higgins, (1995), Thomas Hern (1998), David Meel (2011), David Singer (2005), Harold Putt (2012), Al Stickney (2001), Richard Little (2010).

In 1983, the MAA Board of Governors voted to establish a Meritorious Service Award. The *Certificate for Meritorious Service* is presented for service at the national level or for service to a Section of the Association. The process of awarding the Certificate for Meritorious Service occurs essentially at the Section level. Each Section is entitled and encouraged to nominate one person for the award every five years. The first such awards were presented at the August 1984 MAA meeting, and Ohio was in the first group of sections to make such a nomination. Ohio Section recipients have been:

1984	S. Will Hahn	Wittenberg U.
1989	Andrew Sterrett, Jr.	Denison U.
1994	Cliff Long	Bowling Green State U.
1999	David Kullman	Miami U.
2004	Thomas Hern	Bowling Green State U.
2009	John Michel	Marietta C.
2014	Aparna Higgins	U. of Dayton

Ohio Project NExT

In 1994 the Mathematical Association of America instituted a professional development program, called Project NExT (New Experiences in Teaching) for new or recent Ph.D.s in the mathematical sciences. It was designed to address all aspects of an academic career: improving the teaching and learning of mathematics, engaging in research and scholarship, finding exciting and interesting service opportunities, and participating in professional activities. It also provides the participants with a network of peers and mentors as they assume these responsibilities. The first Directors of Project NExT were Christine Stevens (St. Louis University) and James R.C. Leitzel (Ohio State University). Following Jim Leitzel's death in 1998, Dr. Stevens directed the program until 2009.

Aparna Higgins (University of Dayton), who had served on the leadership team since 1998, then took over as Director and continued in that role until 2014.

At the urging of several of Project NExT fellows from Ohio, including Judy Holdener (Kenyon College), Barbara D'Ambrosia (John Carroll University), and Tom LaFramboise (Marietta College), the Ohio Section decided to initiate its own local version of Project NExT for new faculty members at Ohio colleges and universities. The only eligibility requirements are that an applicant be in her or his first four years of teaching and have a strong commitment to teaching undergraduates. John Michel (Marietta College) was the first Coordinator, and he served until 2001.

The first Ohio Project NExT workshop was held on Thursday evening and Friday morning before the regular spring section meeting at Youngstown State University in April 1997. Activities got underway with a banquet on Thursday evening, followed by lively discussion about tenure and professional development issues. The Friday morning sessions included incorporating history of mathematics into mathematics courses, led by Fred Rickey (Bowling Green State University), and grant writing, led by David Flaspohler (Xavier University). This Thursday evening–Friday morning pattern has continued, and the workshop leaders are frequently prominent MAA members who are attending the section meeting as invited speakers.

In 1998 Barbara Ashton (Wittenberg University), having completed her obligations as Ohio Section President, came on board as Ohio Project NExT Co-Coordinator and served until 2001.

Others who have served as Ohio Project NExT Coordinators are:

John Holcomb (Cleveland State University)	2000-2002
Mark Smith (Miami University)	2002-2004
Dave Sobecki (Miami University-Hamilton)	2004-2006
Dale Mugler (University of Akron)	2005-2007
Wiebke Diestelkamp (University of Dayton)	2007-2011

John Prather (Ohio University-Eastern)	2007-2013
Chris Swanson (Ashland University)	2007-2015
Katie Cerrone Arnold (University of Akron)	2011-
John Tynan (Marietta College)	2013-2014
Chandra Dinavahi (University of Findlay)	2014-

First Ohio NExT Workshop:
Youngstown State University, April 10-11, 1997.

Back row: Adam Lewenberg (U. of Akron), John Michel (Marietta C.; Coordinator), Tom LaFramboise (Marietta C.), Gordon Swain, (Ashland U.), Ethel Wheland (U. of Akron), Theresa Bright (Xavier U.), Barbara Ashton (Wittenberg U., Section President)

Front row: Bernadette Mullins (Youngstown St.), Danhong Song, (Ohio Northern U.), Vickie VanDresar (Ashland U.), Fred Rickey (Bowling Green St.; Mentor), Linda Saliga (U. of Akron).

Missing: John Holcomb (Youngstown St.), Heather Hullett (Miami U.), Renee Koplon (Wright St.)

Short Courses, Micro-Courses, and Workshops

In the fall of 1971 a two-day meeting of the Ohio Section at Ashland College was a "theme meeting" devoted entirely to a series of invited lectures by three prominent differential geometers. The main thrust of the lectures was to bring to the attention of mathematics faculty the nature of modern differential geometry and the desirability of integrating it into the undergraduate curriculum. The extent to which this conference resulted in an increased em-

phasis on differential geometry in Ohio's colleges and universities is unknown, but the meeting turned out to be the spark that ignited an innovation, not only in the Ohio Section but in the Mathematical Association of America itself – the Section Summer Short Course.

Soon after that fall meeting the Ohio Section's chairman-elect accepted a position out of state. At the ensuing 1972 spring meeting Will Hahn (Wittenberg University) was elected to fill the vacancy created by the chairman-elect's move. Hahn had begun to see the importance of differential geometry in the undergraduate curriculum, but he also realized that his own meager knowledge of the subject was a deterrent to his doing anything about it. How, he wondered, could the Section help faculty members, particularly those at undergraduate institutions, extend their knowledge of differential geometry or, more generally, any other branch of mathematics? At the November 1972 meeting of the Section Executive Committee, he talked about the problem of "faculty retreading" and suggested that the Ohio Section look into ways to help with the continuing education of its membership. After some discussion, the Executive Committee voted to refer the matter to its Committee on Cooperation between Colleges and Universities (COCCU) and charged COCCU to make recommendations by the following spring.

From this time on things moved rapidly. COCCU accepted the challenge with enthusiasm and was able to announce to the Section in April 1973 that Kent State University had agreed to host a one-week summer short course in Numerical Analysis in June 1974, and that Ohio State University was considering offering a similar course in Combinatorics during the same month. In each case the plan was for faculty at the host institution to provide the instruction and make housing and other arrangements for participants. There would be no tuition or fees, other than the cost of instructional materials. Thus, initially, the Ph.D.-granting institutions were, in a real sense, offering their expertise and facilities as a service to the

Section. Although this point of view was soon abandoned, and other changes were made in the short course format, it is interesting to note how it all began.

The Executive Committee gave the go-ahead to COCCU to proceed to work out the details of the inaugural short courses with Kent State and Ohio State. The next day Hahn gave his retiring chairman's address on "The Retread Problem," in which he tried to generate awareness of the problem and make a case for the Section's becoming involved in its solution.

During the 1973-74 academic year COCCU, Ohio State, and Kent State worked out and publicized details of the initial short courses. The Combinatorics course at Ohio State took place June 10-14, 1974, with 40 participants registered. This was followed the next week by the Numerical Analysis course at Kent State University, with a total of 20 registrants.

Following the success of its first ten short courses, in 1983 the Ohio Section inaugurated a bold move to offer a sequence of three annual three-week courses designed to qualify mathematicians to teach the first few courses in a modern undergraduate computer science curriculum. The 1983 course on Data Structures was taught by Zaven Karian at Denison University. Despite some initial concerns about the length of the course and its substantially larger cost for participants, the maximum planned enrollment of 30 was quickly exceeded, and a number of applicants had to be turned away. Concurrent with the first week of this three-week course, a traditional short course on Introduction to Factoring and Primality Testing enrolled 46 participants at Kent State University.

The Data Structures short course was followed in 1984 by a course in Systems Programming, also held at Denison. In 1985 the third course of the sequence, Operating Systems, was held at Bowling Green State University, while a second round of the sequence began with Data Structures again at Denison. It was during these same years that the Institute for Retraining in Computer Science

(IFRICS) was in full swing, with 9-week courses at Clarkson University and, later, Kent State. Unfortunately, about the same time as the computer science retraining movement peaked, nationwide enrollments in computer science fell off drastically. As a result, the second round of Ohio Section computer science retraining courses was not completed.

With national attention focused on the state of elementary and secondary school mathematics during the late 1980s, the Ohio Section, in cooperation with the Ohio Council of Teachers of Mathematics, decided to sponsor short courses for secondary school mathematics teachers. The first of these was held at Muskingum College in 1988, under the leadership of James Smith (Muskingum College) and Janet Roll (University of Findlay). The following summer Richard Little directed a two-week "Math Camp for Teachers" at Baldwin-Wallace College. Topics covered in these short courses included geometry, discrete mathematics, and hand-held graphing calculators. Fifteen teachers were enrolled in 1988 and thirty in 1989. A 1990 short course, focusing on the NCTM *Curriculum and Evaluation Standards for School Mathematics* was offered at Muskingum College, with fourteen middle school teachers in attendance.

Although the short courses were originally conceived as vehicles for upgrading the competence of Ohio Section members, from the very beginning they drew participants from a much wider geographical area. As might be expected, nearby states like Pennsylvania and Michigan were frequently represented, but participants also came from such diverse places as Massachusetts, New York, South Carolina, Puerto Rico, Florida, California, Minnesota, and Canada. In some cases the out-of-state participants actually outnumbered the Ohio Section participants suggesting that the desire on the part of mathematicians really to know what is going on outside of their narrow specialties has no geographical limitations. Another bit of evidence of this “desire to know” is the fact that at least a dozen other MAA sections have followed Ohio's example

by setting up short courses of their own. In this activity Ohio has unquestioned priority, but it is pleased that the idea has been appropriated by others.

Short courses were not planned as money-making ventures, and costs to participants were always kept low. Nevertheless the short courses turned out to be profitable for the Ohio Section, because registrations usually exceeded the minimum number needed to break even. Also, a grant from GTE helped to fund the computer science retraining courses, and some short courses for pre-college teachers received partial funding from the Ohio Board of Regents.

Two of the short courses resulted in publications as *MAA Notes*. Volume 4 in that series, *Notes on Primality Testing and Factoring*, is based on the 1983 short course taught by Carl Pomerance. *Using History in Teaching Calculus*, by V. Frederick Rickey, is an outcome of the 1986 Ohio Section short course, which later became a popular MAA "mini-course" at national meetings.

The success of short courses spawned another phenomenon, the micro-course, typically held on Friday morning prior to the start of the regular section meeting or Saturday afternoon following the close of the meeting. They were initiated, while Thomas Hern (Bowling Green State University) was the Program Committee Chair, with a course on Discrete Event Computer Simulation, presented by Zaven Karian (Denison University) at the Fall 1985 meeting. Two years later Todd Feil (also from Denison) taught a micro-course on TeX. In Spring 1989 Bert Waits and Frank Demana (right–The Ohio State University) offered a course on the CASIO graphing calculator, and that fall Zaven Karian returned with a micro course on Computer Algebra Systems and the Undergraduate Curriculum. Jeff Knisely (East Tennessee State University) presented a grant-writing workshop at the Fall 2001 meeting. Attendance typically ranged from 20 to 40, reinforcing the notion of a "desire to know" on the part of Ohio mathematicians.

Between 1974 and 2009 the Ohio Section sponsored a total of 36 short courses. A complete list, with dates, locations, topics, and

attendance, can be found in Appendix D. Eventually, interest began to wane, and several of the later courses were either cancelled or had very low registrations. At the 2010 fall meeting the Committee on Section Activities (CONSACT) held several discussion sessions with attendees, to brainstorm ways of revitalizing the Section's activities. The result was a plan to hold Saturday afternoon workshops, following the close of the fall meetings. A special session of papers, focusing on the workshop topic, would become a part of the regular meeting program.

The first Annual Fall Workshop, on Geogebra, was facilitated by Barbara D'Ambrosia (John Carroll University) at the 2011 fall meeting. Other fall workshops so far have included: "Setting up a WeBWorK Course on Your Campus," by Barbara Margolius and Felipe Martins (Cleveland State University) in 2012; "Inquiry Based Learning," by Carol Schumacher (Kenyon college) in 2013: "Teaching Mathematics from Primary Historical Sources," by Danny Otero (Xavier University) and Adam Parker (Wittenberg University) in 2014; and "Ximera: Collaboratively Develop Interactive Online Content," by Jim fowler (Ohio State University) in 2015.

Section Finances

In addition to members, officers, and committees, every organization needs a source of income to enable it to carry out activities. At its first annual meeting in 1916 the Ohio Section passed a motion that "a collection of twenty-five cents each be taken to meet the expenses of this meeting for printing and postage." After the bills were paid, a balance of eighty-five cents remained in the treasury. In 1923 a similar collection amounted to $19.75, and it was reported that "the financial situation of the Section is satisfactory." Since only 63 persons attended that meeting, some must have contributed more than the quarter minimum. The following year, however, only $12.00 was collected from 60 persons in attendance. The Section opened its first savings account at the Delaware (Ohio) Savings Bank in 1930.

Section Activities

Beginning in 1955, the Ohio Section adopted a voluntary dues assessment of fifty cents per year. In practice, one dollar was collected in even-numbered years. The 1964 By-Laws of the Section provided that membership dues, "not to exceed one dollar per year, may be assessed." The amount was to be set by the Executive Committee. By 1968 the dues had risen to a dollar per year, and the amount was doubled again in 1979. This plan had limited success, however, as many members conveniently forgot to pay. An amendment to the By-Laws in 1980 provided for a registration fee at Section meetings. Effective with the fall meeting that year, the registration fee was set at $2.00, and annual dues were discontinued. By 1990 the registration fee had risen to $5.00, with students being exempt. Today the Section has an elaborate fee schedule, starting at $30 for faculty at four-year institutions, but this is waived for students and first-time attendees.

The maximum balance in the Ohio Section treasury during its first thirty years was $90.19. With the advent of short courses in the 1970's, the section realized some "windfall profits" that placed it on a sound financial footing. In 1990 the Ohio Section treasury held a balance of approximately $2000, and by 2015 that balance had grown to nearly $10,000, with an additional $10,000 in a certificate of deposit. The lion's share of income today comes from registration fees at the spring and fall meetings.

Ohio Section members in 1916 passed a motion "that the national Association be asked to appropriate five per cent of the annual dues and at least one half of the initiation fees of new members in each section for financing the sections and stimulating them to retain and to gain new members for the Association." A *subvention* policy was eventually adopted by the MAA providing payments to sections based on the total of the individual and institutional dues paid by members of the section for the current year. Sections may also apply to the national MAA office for grants to carry out special projects. One such grant provided seed money for the Ohio Section to publish its 75-year history in 1990.

Ohio Section Newsletter & Web Page

The surviving records of the Ohio Section indicate that, for more than fifty years after the birth of the Section in 1915, the primary, if not the only way members learned what was going on in the organization was through brief notices from the secretary. Generally there was a preliminary announcement of the time and place of the annual meeting, coupled with a call for papers. As a meeting date approached, the secretary sent a second announcement, consisting essentially of the detailed final program. Of course the secretary carried on an extensive correspondence with individual members about specific items, but the general communication was limited to these two meeting notices.

Apparently the pattern in the Ohio Section was typical of what went on in other MAA sections. As early as 1926, however, the Louisiana-Mississippi Section published a newsletter for the purpose of recruiting members. By 1934 this newsletter had evolved into the *National Mathematics Magazine*. This, in turn, became the *Mathematics Magazine* in 1947 and was taken over as an official MAA journal in 1959.

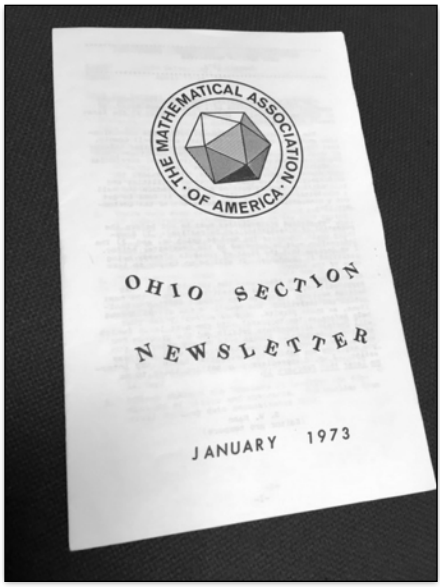
In 1960 the Southern California Section issued a newsletter, consisting of a single mimeographed sheet, not vastly different from the kind of notices which the Ohio Section had for years been sending out. It did, however, include some information other than meeting notices. In January, 1961, the Associate Secretary of the Association, acting in his ex-officio role of Chairman of the Committee on Sections, sent to all section secretaries a copy of a small newsletter published by an unnamed section. This mailing was described as “part of an effort to establish better communications between the sections.” Also during 1960-61, both the Illinois and Northern California Sections published newsletters. There is nothing in the Section files at that time to indicate that the Associate Secretary's effort was discussed in the Ohio Section.

Newsletter & Web

In August 1972, following his election that spring as Ohio Section Chairman, Professor Will Hahn (Wittenberg University) attended the annual meeting of section officers at Dartmouth College. At that meeting a representative from the Texas Section described with much enthusiasm how useful his Section's newsletter had been in stimulating interest in the MAA and in the Section's activities. He also distributed sample copies of the Texas newsletter.

The more Hahn thought about the Texas experience the more he thought it might be worth a try in Ohio. Immediately, of course, there was concern about financing, because the Ohio Section treasury had never been so full that the officers had to agonize over ways to reduce the surplus. Preliminary discussions with the manager of the Wittenberg print shop, together with the discovery that the institution's bulk mailing permit could be used, indicated that the cost of producing and mailing a newsletter of eight to sixteen pages should not be prohibitive.

Armed with this information and the Texas sample, Hahn proposed to the Executive Committee at its November 1972 meeting in Toledo the publication of an experimental edition of an *Ohio Section Newsletter* and volunteered to produce it. The committee gave its blessing to the idea, and the first issue appeared in January, 1973, followed by a second in April. The format was a 5½ by 8½ inch booklet.



Any initial qualms about funding soon disappeared, as the total cost of a 16-page newsletter at $50 per issue was less than the first class postage for mailing the previous one- or two-page meeting announcements. For the next sixteen

years a pattern of three issues per academic year (fall, winter, and spring) was followed. In 1989, however, the Section Executive Committee decided to publish only two issues per year, corresponding to the spring and fall Ohio Section meetings.

As the years passed, inflation took its toll, of course. The bulk mail rate for non-profit organizations went from 2.4 cents per piece in 1978 to 8.5 cents in 1986, an increase of more than 250%. This was accompanied by increases in the costs of paper and printing and the growth of Ohio Section membership, from 750 to approximately 1100. By 1990 the cost of publishing a single issue of the newsletter had risen to over $400, and a decade later it was $600. This was one reason for the decision to cut back publication to two issues per year.

Another cost cutting measure, instituted by Thomas Hern, involved shipping bundles of newsletters to mathematics departments via Priority Mail, rather than to individual members. This not only saved money, but it also cut down on delivery time. Eventually the advantages of on-line publication led to bypassing the USPS altogether. The last professionally printed newsletter was the Spring 2007 issue, edited by Carl Spitznagel.

Technological advances in word processing, offset printing, and electronic publishing have greatly changed the appearance of the *Ohio Section Newsletter*. David Kullman introduced an Ohio Section logo in 1982. A decade later Dwight Olson changed the name to *Ohio Focus* (retaining the *Ohio Section Newsletter* subtitle) and enlarged the page format to 8½ by 11 inches. Today's digital photography and on-line publication make it possible to include color photos of section activities. Nevertheless, the content of *Ohio Focus* in 2015 is similar in many ways to that of 1973. A typical issue includes columns by the Section President and Governor, program and registration information for the upcoming Section meeting, biographical information about invited speakers, committee reports, a calendar of events of interest to Ohio Section members, a directory of section officers and committees, and campus news.

Newsletter & Web

Since the first issue in 1973 the *Ohio Section Newsletter*/*Ohio Focus* has had eleven editors, with the corresponding volume numbers below. (Numbering actually started with Volume 3.)

1	Will Hahn	Wittenberg University	1973 – 1977
2	Richard Little	Baldwin-Wallace C.	1977 – 1982
3	David Kullman	Miami University	1982 – 1987
4	Carol O'Dell	Ohio Northern U.	1987 – 1992
5	Dwight Olson	John Carroll University	1992 – 1997
6	Thomas Hern	Bowling Green State U.	1997 – 2002
7	William Higgins and Brian Shelburne	Wittenberg University	2002 - 2005
8	Carl Spitznagel	John Carroll University	2005 – 2008
9	Barbara D'Ambrosia	John Carroll University	2008 – 2012
10	David Stuckey	Defiance College	2012 – Present

In the early 1970s the Executive Director of the MAA, A.B. Willcox, put together at irregular intervals a collection of reprints of items of potential interest to the mathematical community. These were sent to various MAA sectional and national leaders under the title "Math Clips." One mailing of "Math Clips" included photocopies of the cover and part of the text of the first *Ohio Section Newsletter*. This publicity, combined with encouragement from the Committee on Sections and the Ohio Section's representative to the MAA meetings of section officers, led to a steady increase in the number of section newsletters. By 1983 twenty-four of the twenty-nine sections reported that they were regularly publishing newsletters. In addition, the MAA established its own newsletter, *MAA FOCUS*, in 1981. That has since become a full-fledged magazine which all MAA members receive as one of the privileges of membership.

Ohio Focus

The MAA Ohio Section Newsletter

Volume 10 Spring 2015 Number 6

MAA Ohio Section Annual Meeting Scheduled in Huntington, West Virginia

The statue of John Marshall, erected in 1998, commemorates the 4th Supreme Court chief justice for whom Marshall University is named.

The 99th Annual Meeting of the Ohio Section of the MAA will take place March 27 - 28, 2015 at Marshall University in Huntington, West Virginia. The event starts with the Leo Schneider Student Team Competition at 12:00 p.m. and opening welcome at 1:30 p.m. Friday speakers include **Bonita Lawrence** (Marshall University), with assistance from **Alex Amorim** and **Chad Lott**, and **Carl Lee** (University of Kentucky). **Annalisa Crannell** (Franklin and Marshall University) will be providing an after dinner speech as well as a talk on Saturday. The event will close on Saturday with remarks from retiring president **John Prather** (Ohio University Eastern). There will also be contributed paper sessions on both Friday afternoon and Saturday morning for meeting participants. Graduate and undergraduate students in mathematics, mathematics education, or related fields are encouraged to attend.

Registration Information for Spring 2015 Meeting

Online registration is preferred. You may visit the Section web site at http://www.maa.org/Ohio for one-stop registration, banquet reservation, and abstract submission. The deadline for meeting pre-registration with banquet reservations is March 23. However, you may still register online until March 25 at 6:00 p.m. Abstracts for contributed papers must be submitted by March 13.

On-site meeting registration is always available, but last-minute banquet tickets cannot be guaranteed. Early registration helps with meeting arrangements and is always appreciated. On-site registration and packet pickup will begin 12:00 p.m. on Friday on Memorial Student Center 2nd floor and will continue 8:00 a.m. Saturday.

Meeting participants who cannot register online may register by mail by sending: name, affiliation, address, phone, e-mail address (if any), type of position, and banquet buffet reservation. Send with check, payable to Ohio Section MAA, for applicable fees [registration fee ($30 ordinary registration, $15 retired or part-time, no fee for students or first-time attendees), banquet fee ($25 per person)] to: Ohio Section MAA Meeting c/o Michael Schroeder
Marshall University, Department of Mathematics, College of Science
One John Marshall Drive, Science Building 270
Huntington WV 25755
Registration by mail will be pending receipt of registration fees.

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Front page of the newsletter.

Note: Cabell County. West Virginia, where Marshall University is located, is included in the Ohio Section.

Also in the 1970s, the Committee on Sections suggested that editors send copies of their section newsletters to each of their coun-

terparts in other sections, as well as to the Washington office. (Today, with electronic publishing, this is an easy task.) Section officers report that they have often picked up ideas for programs and projects in their own regions as a result of this inter-sectional exchange of information.

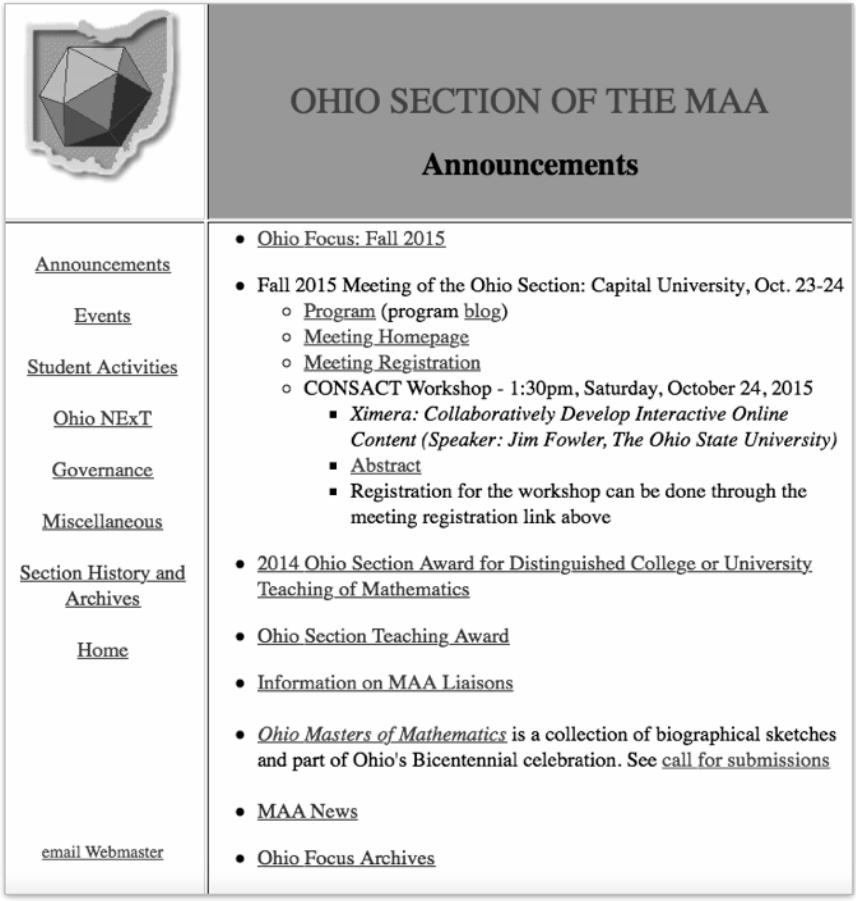
Although Ohio cannot claim absolute priority in this area, it may be argued that many other section newsletters, as well as *MAA FOCUS*, have been significantly influenced by the *Ohio Section Newsletter*. What started out as an effort to improve internal communications within the Ohio Section has evolved into a valuable mechanism throughout the Mathematical Association of America.

Section Web Page & Online Registration

In 1995 the Ohio Section became one of the first MAA sections to establish its own page on the World Wide Web. Thomas Hern (Bowling Green State University) was the first webmaster. He was simultaneously the newsletter editor from 1997 to 2002. An archived snapshot of the earliest webpage that we can find is dated May 30, 1997. The ephemeral nature of the Web is a serious issue for historians and archivists so the *Newsletter* remains our publication of record.

In 2003 Thomas Price, (University of Akron) took over the position of webmaster. He also introduced online meeting registration, which has turned out to be very successful. In 2006 Jay Kerns (Youngstown State University) became the registration coordinator, and Darren Wick (Ashland University) became webmaster.

The web page has evolved from a basic outline format to a more modern and professional design seen below. Beginning in Fall 1997, copies of the *Newsletter* were posted on the website in PDF format, but paper copies were also mailed since not all members had internet access at that time. Mailing of paper newsletters stopped in 2007.



The Section main web page in 2015.

The *Ohio Masters of Mathematics* project mentioned on the web page above was created by David Kullman and Thomas Hern in observance of Ohio's Bicentennial Celebration in 2003. It has grown to feature biographical sketches of nearly fifty prominent mathematicians who were born, were educated, or practiced in Ohio.

An Ohio Section Cast of Characters

In this chapter we highlight some of the men and women who were leaders in the Ohio Section during its first century. We have not included any living persons. Note that the title of the Ohio Section's presiding officer was changed from "Chairman" to "President" in 1988.

Reginald Bryant Allen (1872-1938) was the Section's first Chairman. He was elected at the organizational meeting on December 30, 1915, and served only until the First Annual Meeting in April 1916. He was born in Medford, New Jersey, and graduated from Medford High School. He learned his freshman math before entering Rutgers University as a member of the Class of 1893. He earned a M.S. degree at Rutgers in 1897 and a Ph.D. at Clark University in 1905 under Henry Taber. His doctoral dissertation was *On Hypercomplex Number Systems Belonging to an Arbitrary Domain of Rationality*. Allen was appointed professor of mathematics at Kenyon College in 1906, where he remained until his death in 1938. He was called "Gummy" Allen by his students, after a cartoon character who wore gumshoes or sneakers. The Reginald B. Allen Mathematics Prize at Kenyon is named in his memory. Besides serving as the Ohio Section's first Chairman, he was also its first Program Chairman in 1923-24.

Theodore Moses Focke (1871-1949) was born in Massillon, Ohio. He graduated from Case Institute of Technology in civil engineering in 1892 and was immediately appointed as an instructor in mathematics at

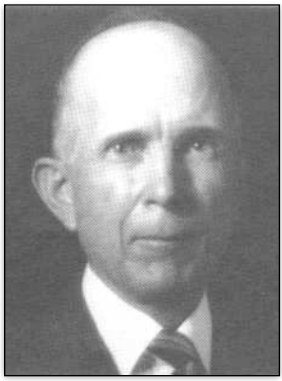
an annual salary of $600. After a year in this position he became a tutor in physics and chemistry at Oberlin for three years. He earned a doctorate at the University of Göttingen in 1898 with a dissertation on *The Thermal Conductivity of Various Kinds of Glass*. Focke then returned to Case as a member of the mathematics department where he became the Kerr Professor and head of the department from 1908 until his retirement in 1943. He was also appointed as the first dean of that institution in 1918. In addition to serving as the second Ohio Section President (1916-17), he was the Program Chairman in 1928-29.

Forbes Bagley Wiley (1880-1956) was born in Brighton, Michigan. He earned a Ph.D. from the University of Chicago in 1914, with a dissertation on *Proof of the Finiteness of the Modular Covariants of a System of Binary Forms and Cogradient Points*. Wiley taught mathematics at Denison University from 1910 until his death in 1956. He was professor and head of the mathematics department at the time the MAA was founded. In addition to being a charter member of the Ohio Section, Wiley served as the third Section Chairman (1917-18), Program Chairman (1938-39), and was the first Ohio Section Governor (1949-52).

Charles Napoleon Moore (1882-1967) was a native Cincinnatian and a graduate of Woodward High School, the alma mater of E. H. Moore. He studied at the University of Paris before receiving his Ph.D. from Harvard in 1908 for a dissertation, *On the Theory of Convergence Factors and Some of Its Applications*, written under the supervision of Maxime Bôcher. Professor Moore taught mathematics at

the University of Cincinnati for more than fifty years during which he supervised 17 doctoral candidates. He spent the year 1934-35 at the new Institute for Advanced Studies in Princeton, New Jersey where he wrote a draft of his book on convergence factors. Moore served as vice president of both the American Mathematical Society and the American Association for the Advancement of Science. He attended the First Annual Meeting of the MAA Ohio Section in 1916, served as the Section's fourth Chairman (1918-19), and its second Program Chairman (1924-25). He was also an associate editor of *Transactions of the American Mathematical Society*.

Samuel Eugene Rasor (1873-1950) was born in Clayton, Ohio. After receiving his B.S. from the Ohio State University in 1898, he taught briefly at Amity College in Iowa before returning to Ohio State to earn a M.A. degree and an appointment as assistant professor in 1902. He took a leave to earn a M.S. in at the University of Chicago in 1906. This resulted in his promotion to associate professor at OSU. In 1910-11. He embarked on further studies at the University of Berlin. Rasor continued his career of teaching and service at Ohio State for nearly fifty years, being promoted to professor in 1912 and professor emeritus in 1943. After his retirement he continued to teach part time to meet the demand from the large number of army trainees on campus. Rasor chaired the local organizing committee for the December 1915 foundational meeting of the MAA, held at Page Hall on the Ohio State Campus. He was a charter member of the Ohio Section and served as its sixth Chairman (1920-21).



Harriet E. Glazier (1870-1955) was born in Haverhill, New Hampshire. Immediately following her own elementary education, she served as acting principal of a small high school at Barton Landing, Louisiana, from 1889 to 1892. She received her A.B. de-

gree from Mt. Holyoke College in 1896, and remained there for one year as a mathematics instructor. In 1897 she joined the faculty of the Western College for Women at Oxford, Ohio, which had been founded in 1853 as a western extension of Mt. Holyoke. Glazier earned her M.A. degree from the University of Chicago in 1908 and was Professor of Mathematics at Western College from 1905 until 1920. During that time, she became a charter member of the Ohio Section. In 1920 she moved to Los Angeles and taught at the Southern Branch of the University of California (now known as UCLA) until her retirement in 1940.

Harris Hancock (1867-1944) was a native of Virginia. He was educated at the University of Virginia and Johns Hopkins University, where he received his A.B. in 1888. He then studied abroad at

Cambridge and the University of Berlin, earning a Ph.D. from the latter in 1894 for a thesis on elliptic functions directed by Lazarus Fuchs. A second dissertation, on algebraic number theory, directed by Gaston Darboux, earned him a D.Sc. degree from the Sorbonne in 1901. Hancock was a member of the faculty at the University of Chicago when it first opened for classes in 1892. After disagreeing with the department head, E. H. Moore, Hancock left Chicago and was appointed Professor of Mathematics at the University of Cincinnati in 1900. A strong proponent of classical education, he was influential in the establishment of Walnut Hills High School in 1920. Nearly 100 years later, this Cincinnati institution is still considered to be one of the

top academic high schools in Ohio. Professor Hancock attended the First Annual Meeting of the Ohio Section in 1916 and served as the Section's tenth Chairman in 1924-25.

Rosser Daniel Bohannan (1855-1926) was another native of Virginia, earning bachelor's and master's degrees at the University of Virginia. After teaching mathematics and Latin for several years, he continued his studies of mathematics at Cambridge University (1880-82) and the University of Göttingen (1882-83). In 1883 he returned to the University of Virginia as an assistant professor. In 1887 Bohannan was appointed professor of mathematics and astronomy at the Ohio State University, where he would remain until his death in 1926, a period of 39 years. In 1895 he became chair of the department, and under his leadership the department grew from a staff of two to one that included 8 professors, 7 assistant professors, and two instructors. Bohannan was one of the main organizers of the December 1915 meeting at which the MAA was founded. He served as Chairman of the Ohio Section in 1925-26.

William DeWeese Cairns (1871-1955) was born in Troy, Ohio. After graduating from Troy High School, he entered Ohio Wesleyan University where he earned an A.B. degree in 1892. Returning to Troy, he taught high school physics for two years before enrolling at Harvard University where he earned an A.M. in 1898. Cairns served on the faculty of Oberlin College from 1899 until his retirement in 1939. In 1907 he received a Ph.D. degree in mathematics from the University of Göttingen, where his advisor was David Hilbert. In 1913

Cairns was serving on the editorial board of the *American Mathematical Monthly*, and he may well have been responsible for the organizational meeting of the Mathematical Association of America being held in Columbus. He was elected as the first Secretary-Treasurer of the MAA in 1915 and held that office until 1942. Following a term as MAA President in 1943-44, he was made honorary MAA president for life. Cairns was the 17th Chairman of the Ohio Section in 1931-32.

Grace M. Bareis (1875-1962) was another charter member of the Ohio Section. A native of Canal Winchester, Ohio, she received her

A.B. degree from Heidelberg College in Tiffin, Ohio, in 1897. In 1909 she became the first person to receive a Ph.D. in mathematics from Ohio State University. Her dissertation, *Imprimitive Substitution Groups of Degree Sixteen*, was written under the supervision of Harry W. Kuhn. Bareis was an assistant professor of mathematics at Ohio State from 1908 until her retirement in 1946. She actually taught for two more years because of the shortage of mathematics instructors needed to serve the returning WWII veterans. She helped to organize the foundational meeting of the MAA that was held on the campus of Ohio State in December, 1915

Isaac Albert Barnett (1894-1974) was born in London, England, and immigrated with his family to the United States in 1904. He earned three degrees at the University of Chicago, including a Ph.D. in 1918 for a dissertation, *Differential Equations with a Continuous Infinitude of Variables*, directed by Gilbert Bliss. His special mathematical interests were in analytic geometry and number theory,

and Norbert Wiener credited him for an idea that led to the development of the Wiener Measure. Barnett was a Benjamin Pierce Fellow at Harvard in 1919-1920 and served on the faculty of the University of Saskatchewan for four years before making a forty-year commitment to the University of Cincinnati, beginning in 1924. There he served as Head of the Mathematics Department and founded a series of NSF funded institutes for the training of high school teachers. One former student recalls that "Albert wrote the book on teaching by intimidation… We learned discipline – not formal classroom discipline, but mathematical discipline." After his death the annual I.A. and Fannie R. Barnett Memorial Lecture in Number Theory was instituted. Barnett served three terms as Program Chairman of the Ohio Section (1926-27, 1941-42, 1949-50) and was the Section Chairman in 1933-34. He was elected to the MAA Board of Governors in 1952. Following his retirement from the University of Cincinnati, Barnett taught at Ohio University, Fairleigh Dickinson University, and the University of North Carolina at Chapel Hill.

Tibor Radó (1895-1965) was born in Budapest, Hungary, and studied civil engineering at the Polytechnic Institute in Budapest before enlisting as a lieutenant in the Austro-Hungarian army during World War I. He was captured by the Russians in 1916 and spent the next four years as a prisoner of war in Siberia. There he studied mathematics under the tutelage of fellow prisoner Eduard Helly. After the war he returned to his studies, this time at University of Szeged, where he worked with Alfréd Haar and Frigyes Riesz. He completed his Ph. D. thesis under their direction in 1922. In 1929 Radó came to the U. S. as a visiting lecturer at Harvard University, and the following year he published his solution of Plateau's problem. He was appointed professor at the Ohio State University in 1930 in conjunction with

the establishment of a new graduate program in mathematics. Radó remained at Ohio State until his retirement in 1965. He served as chairman of the Department of Mathematics in the post-war period (1946-48) and was named research professor in 1948. He was Chairman of the Ohio Section in 1943-44.

Foster Lindsey Brooks (1908-1998) was born on a farm near Carrollton, Ohio. He attended a one-room school for seven grades, passed over the eighth grade, and graduated from Carrollton High School in 1925. He earned an A.B. degree from Mt. Union College in 1929 and a Ph.D. from the Ohio State University in 1934. From 1933 to 1935 he taught mathematics and physics at Carrollton High School. In 1935, Dr. Brooks joined the faculty of Kent State University where he taught mathematics, physics and photography until his retirement in 1974. During WWII, Brooks was on leave from Kent State, doing anti-submarine work for the US Navy as part of an Operations Research Group. Later he was transferred to pro-submarine work, becoming director of the Submarine Operations Research Group for the Pacific fleet at Pearl Harbor. In 1947, he was presented with a Presidential Certificate of Merit, the nation's highest civilian award, "For Research Done During the War." Among other things, his team of scientists developed the guidance system for the first nuclear submarine (*Nautilus).* Foster Brooks served as Secretary-Treasurer of the Ohio Section for 25 years, from 1947 until 1972, and his careful records and reports have been of great help in tracing the history of the Section.

Wade Ellis, Sr. (1909-1989) was born in Chandler, Oklahoma. He earned all his degrees in mathematics - a B.S. from Wilberforce University (1928), an M.S. from the University of New Mexico (1938), and his doctorate at Michigan (1944). He was one of the

first African Americans to earn a Ph.D. in mathematics. While he was at Oberlin College he served the Ohio Section as Section Chairman (1960-1961) Program Committee Chair (1955-1956), first chair (1963) of Committee in on By-Laws, and Section Governor (1964-1967) Dr. Ellis taught in Oklahoma's segregated schools, at Fort Valley State College and Fisk University. In 1945 he was on the staff of the Radiation Laboratory of the Massachusetts Institute of Technology. He held the position of Mathematician, Air Force Laboratory from 1946-1948. From 1948 to 1967, Dr. Ellis was Professor of Mathematics at Oberlin College. In 1967 he became Associate Dean of the Rockingham School of Graduate Studies at the University of Michigan. His brother James R. Ellis earned degrees in mathematics and a D.Ed. from the University of Tulsa. His son, Wade Ellis Jr., a graduate of Ohio State in mathematics, is an officer of the MAA.

Charles E. Capel (1922-2004) grew up in a working class family in Troy, New York, where the nuns at Catholic Central High School recognized his academic potential and encouraged him to tackle the college preparatory curriculum. Having won a Regents Scholarship in 1940, he entered the New York State College for Teachers at Albany where he planned to become a high school math teacher. World War II delayed his graduation until 1947, but the GI Bill enabled him to pursue a master's degree in mathematics at the University of Rochester. His Ph.D. in topology was completed at Tulane University in 1953, with a disser-

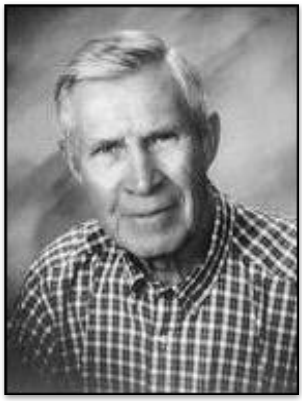
tation on *Inverse Limit Spaces*. Dr. Capel was hired by Miami University in 1960 and chaired the mathematics department there from 1961 to 1965. During his term as Ohio Section Chairman (1963-64), he led the Section in establishing its first standing committees (CONCUR and CONTTAC) and producing the first major revision of its Bylaws since 1915.

H. David Lipsich (1920-2012) served on the University of Cincinnati faculty beginning in 1942, except for 1945-46 which he spent at Princeton. He received his Ph.D. in 1949 at U.C. under Otto Szasz, a student of L. Fejer His dissertation was entitled "On Hypergeometric Summability". He became Department Head in 1961, and was Dean of the College of Arts and Sciences, 1976-1981. In 1966 he received the prestigious UC Dolly Cohen Award for excellence in teaching. He served as Section Chairman (1966-67), Program Chair (1956-1957), Section Governor (1970-1973) and was the first chair of CONCUR in 1963. His Retiring Chairman's address was entitled, "Some New Directions for the Ohio Section"

Arnold Ephraim Ross (1906-2002) was born in Chicago in 1906, but spent most of his childhood in Odessa, Russia. He returned to America in 1922 and enrolled at the University of Chicago, where he earned a Ph.D. in 1931 with a dissertation, *On Representation of Integers by Indefinite Ternary Quadratic Forms*, directed by L.E. Dickson. His teaching career included a stint at Cal Tech, and he served as a research mathematician in the US Navy during World War II. In 1946 Dr. Ross became head of the mathematics department at the University of Notre

Dame, where he started a summer program for talented high school students. He moved to Ohio State as department chair in 1963, and the Ross Summer Scholars Program followed him a year later. By the time he retired in 2000, similar mathematics programs for high school students had been established at several other universities in the US and abroad. Besides serving as Chairman of the Ohio Section (1968-69), his long list of honors includes a 1986 MAA Award for Distinguished Service.

S. Elwood (Woody) Bohn (1927–2013) grew up in North Dakota. During his senior year at Bismarck High School, he earned all-state honors in basketball, and he became the first basketball player at Concordia College in Moorhead, Minnesota, to score over 1000 points. After graduating from Concordia in 1949, with degrees in mathematics and economics, Elwood earned a Master's degree in mathematics and statistics at the University of Nebraska in 1951 and a Ph.D. from that institution in 1961. His thesis, written under the direction of Lloyd Jackson, was on *A Sub-function Study of the Dirichlet Problem for a Quasi-linear Differential Equation.* In between earning those graduate degrees he taught at the University of Minnesota, Concordia College, and Wartburg College in Waverly, Iowa.



Elwood came to Ohio in 1961 as a faculty member at Bowling Green State University, and he moved to Miami University three years later. He served as department chair at Miami for 15 years, overseeing growth in both the number and quality of its faculty. After his retirement in 1992 a lecture series and a computing lab were named in his honor. Elwood served as Chairman of the Ohio Section in 1971–72 and as Governor from 1973 to 1976. As Section Chairman he worked to update the Section's Bylaws and revi-

talize the standing committees that had been instituted nearly a decade earlier by Charles Capel.

Samuel Wilfred (Will) Hahn (1921-2008) was born in Columbia, South Carolina. The son of a Lutheran pastor, he entered Lenoir Rhyne College at the age of 16 and graduated four years later as president of the student body, with a major in history and a minor in English. In June 1941 he entered Duke University as a graduate student in mathematics and had completed his master's thesis by Christmas of that year. The following spring he joined the US Navy, where he served with distinction until 1946. He returned to Duke and defended his doctoral dissertation on *Universal Spaces under Strong Homeomorphisms* two years later. Dr. Hahn's academic career then took him to the University of Michigan, Wittenberg College, Winthrop College (SC) and Hampden-Sydney College (VA). He returned to Wittenberg as Professor of Mathematics in 1960 and remained there until his retirement in 1983. Dr. Hahn served as Chairman of the Ohio Section (1972-73) and Governor (1979-1982). In 1984 he was the Ohio Section's first recipient of an MAA Certificate for Meritorious Service. He founded the *Ohio Section Newsletter* and was a principal author of our 75-year history, *The Ohio Section: 1915-1990*.

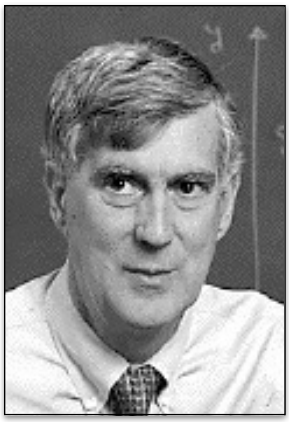
Marion Dell Wetzel (1919-2012) grew up on a farm in Illinois and always had a love of agriculture. She earned her baccalaureate degree at Cornell College in Iowa and her master's and Ph.D. degrees at Northwestern University. Her doctoral dissertation was on *The Ana-*

lytic Theory of Positive Definite J-Fractions. Dr. Wetzel joined the faculty of Denison University in 1946, where her passion for math – especially continued fractions – guided her on a long career in the Department of Mathematics. She rose to the rank of full professor and became the first woman to serve as chair of the department. When she retired in 1986, she was Denison's longest-tenured faculty member. Dr. Wetzel chaired the Ohio Section Program Committee in 1954-55 and was the first female to serve as Chairman of the Section (1978-79). After her death at the age of 92, a Marion D. Wetzel Scholarship was established at Denison in her memory.

Clifford Allen Long (1931-2002) was born on the south side of Chicago during the Great Depression. Following high school graduation he was offered a half-time scholarship at the University of Chicago, but he couldn't afford to attend. Instead, he began attending Wilson Junior College part-time while working for Armour & Co. at the Chicago Stockyards. After further studies at the University of Illinois Navy Pier campus, he moved to the Champaign-Urbana campus where he obtained his bachelor's degree, a master's degree, and finally a doctorate in mathematics from the University of Illinois. His dissertation, *Schwartz Distributions Analytic in a Parameter*, was written under Pierce Ketchum. Dr. Long began teaching mathematics at Bowling Green State University in 1959, and he taught there for the next 35 years. He was very active in the Ohio Section, serving as Program Committee Chair (1978-79), Section Chairman (1980-81), and Governor (1988-91). He handled local arrangements for several Ohio Section meetings at BGSU and received an MAA Certificate for Meritorious Service in 1994. Dr. Long had a special interest in computer graphics and computer aided design, and he was known for the models of 3-D

surfaces that he generated with the help of a small, computer-controlled milling machine in his office.

John Douglas (Doug) Faires (1941-2012) was a native of Pennsylvania and graduated from Sharpsville High School in 1959. He

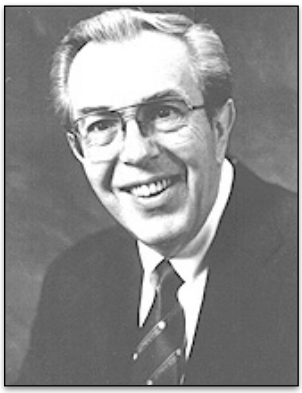


earned his undergraduate degree at Youngstown State University in 1963 and his Ph.D. in mathematics at the University of South Carolina in 1969. His dissertation, *Comparison of the States of a Pair of Closed Linear Transformations Acting between Two Banach Spaces*, was directed by Sidney Birnbaum. Dr. Faires then returned to YSU as a faculty member and remained there until his retirement in 2006. He served as the Ohio Section Chairman (1981-82) and Governor (1997-2000). Professor Faires was a dedicated teacher who received the Ohio Section's Award for Distinguished College or University Teaching in 1996 as well as five Distinguished Faculty awards and an Honorary Doctor of Science degree from YSU. He served as the national president of Pi Mu Epsilon (1999-2002) and received its C. C. MacDuffee Award for lifetime service in 2005. He also served as a co-director of examinations for the American Mathematics Competitions and a judge for the COMAP International Contest in Mathematical Modeling. Dr. Faires was an author of numerous textbooks, ranging from *PreCalculus* through *Numerical Analysis*.

Darrell John (Dick) Horwath. (1940-2011) Upon graduating from the University of Dayton, Dick began graduate study at the University of Wisconsin, where he specialized in group theory. After beginning his teaching career at the University of Wisconsin-Whitewater, Dick joined the faculty of John Carroll University in 1970, retiring in 2007. In addi-

tion to teaching, Dick was an avid problem poser and problem solver, and served on the Advisory Panel for the American Mathematics Competitions. In the Ohio Section he was Program Committee Chair (1981-1982), President of the Section (1982-1983), Secretary-Treasurer (1991-1997), and Committee on Bylaws for many years. He wrote or co-wrote the 1992 and 2004 Bylaws.

James Robert Charles Leitzel (1936-1998) was born in Shenandoah, Pennsylvania. His Bachelor's and Master's degrees were earned at Penn State, and he received his doctorate from Indiana University with a thesis, *On the Divisibility of the Group of Divisor Classes of Degree Zero of an Algebraic Curve*. He joined The Ohio State University faculty in 1965, where he served as vice-chair of the Mathematics Department and was instrumental in starting an M.A.T. degree program. Professor Leitzel was a strong advocate for higher standards and better teaching of mathematics at all levels. After chairing the CONTTAC committee, he became the Ohio Section Chairman in 1984-85 and went on to serve the national MAA in several capacities. From 1990 to 1992, he was a MAA visiting mathematician and director of special projects. During that time he chaired the MAA Committee on Mathematical Education of Teachers (COMET) and was deeply involved in writing and editing the 1991 MAA report, *A Call for Change: Recommendations for the Mathematical Preparation of Teachers of Mathematics.* He was also the founding co-director of Project NExT, from its inception in 1994 until his death in 1998. The James R. C. Leitzel Lecture was established that year by the MAA Board ofGovernors.



Cast of Characters

Leo Joseph Schneider (1938-2010) was born in Cincinnati and earned his bachelor's and master's degrees at Xavier University.

His Ph.D. dissertation at Case-Western University, on *Oscillatory Properties of the Fourth Order Linear Homogeneous Formally Self-Adjoint Differential Equation*, was completed in 1971. Schneider joined the faculty at John Carroll University as an instructor in 1963 and became a full professor in 1979. He also chaired the department from 1971 until 1979. He served the Ohio Section as Program Committee Chair (1995-1996), as President (1997-98), and as Governor (2000-2003). In 2004 he received the Section's Award for Distinguished College or University Teaching. Professor Schneider had a special interest in students' co-curricular activities. From 1974 to 1988 he served as Ohio's regional coordinator for the American High School Mathematics Exam. He was appointed to the national American Mathematics Competitions Committee in 1980, and he chaired that committee from 1988 to 1994. He also served as the national secretary-treasurer of Pi Mu Epsilon. Dr. Schneider died suddenly in June 2010 while en route to Kansas City to participate in the annual grading of AP Calculus exams. Later that summer the *C.C. MacDuffee Award for Distinguished Service* was presented to him posthumously at the annual Pi Mu Epsilon meeting.

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Attendees at the First Two Meetings.
B Section Meetings
C Section Officers
D Short Courses
E Constitution and By-Laws
F Invited Addresses
G Teaching Award Recipients

Appendix A

Charter Membership

December 30, 1915

R. B. Allen	Kenyon C.
Gordon N. Armstrong	Ohio Wesleyan U.
C. L. Arnold	Ohio State U.
Grace M. Bareis	Ohio State U.
J. B. Brandeberry	U. of Toledo
W. D. Cairns	Oberlin C.
A. G. Caris	Defiance C.
George E. Carscallen	Hiram C.
E. T. Coddington	Ohio State U.
Oscar L. Dustheimer	Baldwin-Wallace C.
Theodore M. Focke	Case School of Appl. Sci.
Harriet E. Glazier	Western College for Women
M. E. Graber	Heidelberg U.
Marvel C. Horn	Muskingum C.
Joseph H. Kindle	U. of Cincinnati
H. W. Kuhn	Ohio State U.
Charlotte Morningstar	Ohio State U.
C. C. Morris	Ohio State U.
A. D. Pitcher	Adelbert C.
S. E. Rasor	Ohio State U.
Hortense Rickard	Ohio State U.
C. J. West	Ohio State U.
Forbes B. Wiley	Denison U.
D. T. Wilson	Case School of Appl. Sci.
B. F. Yanney	C. of Wooster

Appendix A

Attendees at the First Annual Meeting

April 21-22, 1916, Ohio State U.

R. B. Allen	Kenyon C.
F. Anderegg	Oberlin C.
W. E. Anderson	Wittenberg C.
Gordon N. Armstrong	Ohio Wesleyan U.
C. L. Arnold	Ohio State U.
C. B. Austin	Ohio Wesleyan U.
Grace M. Bareis	Ohio State U.
Lily Batterham	Ohio State U.
J. B. Brandenberg	U. of Toledo
Lucille Brown	Ohio State U.
Elizabeth Burnell	Lake Erie C.
A. G. Caris	Defiance C.
George E. Carscallen	Hiram C.
Oscar L. Dustheimer	Baldwin-Wallace C.
J. B. Faught	Kent State Normal C.
Theodore M. Focke	Case School Appl. Sci.
Harriet E. Glazier	Western College for Women
M. E. Graber	Heidelberg U.
Harris Hancock	U. Cincinnati
E. J. Hirschler	Bluffton C.
William Hoover	Ohio U.
Christian Hornung	Heidelberg U.
Charles A. Hutchinson	Wittenberg C.
C. W. Keyser	Zanesville
H. W. Kuhn	Ohio State U.
Gertrude McCain	Oxford College for Women
G. W. McCoard	Ohio State U.
Charles N. Moore	U. Cincinnati
C. C. Morris	Ohio State U.
A. D. Pitcher	Western Reserve U.
S. E. Rasor	Ohio State U.
Hortense Rickard	Ohio State U.
Hazel E. Schoonmaker	Denison U.
Karl D. Swartzel	Ohio State U.
T. Elmer Trott	Mt. Union C.
L. E. Urner	Miami U.
C. J. West	Ohio State U.
Forbes B. Wiley	Denison U.
B. F. Yanney	C. of Wooster
A. E. Young	Miami U.

Appendix A

Attendees at the Second Annual Meeting

April 6, 1917, Ohio State U.

R. B. Allen	Kenyon C.
F. Anderegg	Oberlin C.
W. E. Anderson	Wittenberg C.
G. N. Armstrong	Ohio Wesleyan U.
C. L. Arnold	Ohio State U.
C. B. Austin	Ohio Wesleyan U.
Grace M. Bareis	Ohio State U.
Mrs. W. E. Beckwith	Western Reserve U.
P. Biefeld	Denison U.
R. D. Bohannan	Ohio State U.
Jacob Bowers	Columbus Trades School
Louis Brand	U. Cincinnati
A. G. Caris	Defiance C.
O. L. Dustheimer	Baldwin-Wallace C.
Theodore M. Focke	Case School of Appl. Sci.
Harriet E. Glazier	Western College for Women
M. E. Graber	Heidelberg U.
Harris Hancock	U. Cincinnati
E. J. Hirschler	Bluffton C.
H. W. Kuhn	Ohio State U.
C. C. Morris	Ohio State U.
Anna H. Palmie	Western Reserve U.
L. D. Parker	Cedarville C.
Anna B. Peckham	Denison U.
S. E. Rasor	Ohio State U.
Hortense Rickard	Ohio State U.
Mary E. Sinclair	Oberlin C.
S. A. Singer	Capital U.
K. D. Swartzel	Ohio State U.
T. Elmer Trott	Mt. Union C.
C. J. West	Ohio State U.
R. B. Wildermuth	Capital U.
Forbes B. Wiley	Denison U.
D. T. Wilson	Case School of Appl. Sci.

Appendix B

Section Meetings

Meeting	Dates	Host Institution	Attendance	*Monthly* reference
Charter	Dec. 30-31, 1915	Ohio State U.	25	23(4), 134-145
1st Ann.	Apr 21-22, 1916	Ohio State U.	40	23(6), 189-193
2nd Ann.	April 6, 1917	Ohio State U.	34	24(5), 224-228
3rd Ann.	March 29, 1918	Ohio State U.	30	25(6), 254-257
4th Ann.	April 18, 1919	Ohio State U.	38	26(6), 234-236
5th Ann.	April 2, 1920	Ohio State U.	35	27(7), 287-289
6th Ann.	March 25, 1921	Ohio State U.	45	28(7), 293-296
7th Ann.	Apr 14-15, 1922	Ohio State U.	53	29(5), 193-197
8th Ann.	March 30, 1923	Ohio State U.	63	30(7), 215-219
9th Ann.	April 4, 1924	Ohio State U.	60	31(7), 319-323
10th Ann.	April 3, 1925	Ohio State U.	47	32(7), 338-341
11th Ann.	April 2, 1926	Ohio State U.	34	33(7), 350-352
12th Ann.	April 8, 1927	Ohio State U.	55	34(6), 281-282
13th Ann.	April 5, 1928	Ohio State U.	46	35(6), 271-273

Appendix B

Meeting	Dates	Host Institution	Attendance	*Monthly reference*
14th Ann.	April 4, 1929	Ohio State U.	59	36(7), 350-353
15th Ann.	April 3, 1930	Ohio State U.	77	37(6), 270-273
16th Ann.	April 2, 1931	Ohio State U.	51	38(7), 368-371
17th Ann.	April 7, 1932	Ohio State U.	59	39(7), 374-377
18th Ann.	April 6, 1933	Ohio State U.	86	40(7), 382-386
19th Ann.	April 5, 1934	Ohio State U.	80	41(8), 475-477
20th Ann.	April 4, 1935	Ohio State U.	83	42(8), 465-467
21st Ann.	April 2, 1936	Ohio State U.	77	43(7), 392-396
22nd Ann.	April 1, 1937	Ohio State U.	74	44(6), 339-342
23rd Ann.	March 31, 1938	Ohio State U.	92	45(7), 403-406
24th Ann.	April 8, 1939	Ohio State U.	70	46(6), 318-320
25th Ann.	April 3, 1940	Ohio State U.	63	47(6), 333-335
26th Ann.	April 3, 1941	Ohio State U.	71	48(6), 370-373
27th Ann.	April 2, 1942	Ohio State U.	56	49(7), 430-431
28th Ann.	April 1, 1943	Ohio State U.	36	50(7), 471-472

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Meeting	**Dates**	**Host Institution**	**Attendance**	***Monthly reference***
29th Ann.	April 6, 1944	Ohio State U.	45	51(9), 553-554
---	April 5, 1945			cancelled
30th Ann.	April 4, 1946	Ohio State U.	68	53(8), 490-492
31st Ann.	April 3, 1947	Ohio State U.	80	54(8), 511-514
32nd Ann.	April 3, 1948	Ohio State U.	92	55(9), 612-614
33rd Ann.	April 2, 1949	Ohio State U.	92	57(1), 70-72
34th Ann.	April 22, 1950	Denison U.	139	58(1), 72-74
35th Ann.	April 21, 1951	Ohio State U.	107	58(9), 668-670
36th Ann.	April 19, 1952	Ohio State U.	97	59(7), 512-514
37th Ann.	April 18, 1953	Ohio State U.	98	60(7), 518-522
38th Ann.	April 17, 1954	Ohio State U.	89	61(7), 516-519
39th Ann.	April 23, 1955	Ohio State U.	111	62(7), 544-547
40th Ann.	April 14, 1956	Oberlin C.	120	63(8), 603-605
41st Ann.	April 20, 1957	U. of Cincinnati	61	64(7), 540-542
42nd Ann.	April 26, 1958	Denison U.	117	65(7), 558-560

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Meeting	Dates	Host Institution	Attendance	*Monthly reference*
43rd Ann.	May 9, 1959	Miami U.	68	66(7), 643-645
44th Ann.	May 7, 1960	Kent State U.	84	67(8), 829-830
45th Ann.	May 6, 1961	Ohio Wesleyan U.	82	68(7), 710-712
46th Ann.	May 5, 1962	Muskingum C.	62	69(8), 830-831
47th Ann.	May 4, 1963	Ohio State U.	160	70(8), 925-927
Fall '63	Dec. 7, 1963	Denison U.	74	71(5), 587
48th Ann.	May 9, 1964	U. of Akron	151	71(8), 957-959
49th Ann.	May 8, 1965	Ohio State U.	149	72(8), 947
50th Ann.	April 23, 1966	Ohio Wesleyan U.	130	73(8), 924-926
51st Ann.	Apr 21-22, 1967	Ohio State U.	175	74(7), 896-898
Fall '67	Oct. 20-21, 1967	Ohio State U.	208	75(3), 330-331
52nd Ann.	Apr 26-27, 1968	Miami U.	134	75(7), 823-824
53rd Ann.	Apr 25-26, 1969	Ohio State U.	271	76(8), 983
Fall '69	Oct. 25, 1969	Denison U.	138	77(4), 442
54th Ann.	May 1-2, 1970	Bowling Green State U.	203	77(8), 928
Fall '70	Nov. 7, 1970	Ohio Wesleyan U.	82	78(6), 701

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Meeting	Dates	Host Institution	Attendance	*Monthly reference*
55th Ann.	Apr. 30-May 1, 1971	Ohio Wesleyan U.	149	78(8), 936-937
Fall '71	Nov. 5-6, 1971	Ashland C.	101	79(5), 569
56th Ann.	Apr 28-29, 1972	Wittenberg U.	162	79(10), 1164-1165
Fall '72	Nov. 3-4, 1972	U. of Toledo	153	80(5), 586
57th Ann.	Apr 13-14, 1973	Ohio U.	165	80(8), 973-974
Fall '73	Nov. 2-3, 1973	Lorain Co. C.C.	239	81(5), 568-569
58th Ann.	May 3-4, 1974	Muskingum C.	204	82(1), 104-105
Fall '74	Nov. 1-2, 1974	U. of Cincinnati	210	82(5), 554-555
59th Ann.	May 2-3, 1975	Bowling Green State U.	190	82(9), 967-968
Fall '75	Nov. 7-8, 1975	Otterbein C.	184	83(5), 407
60th Ann.	May 7-8, 1976	Youngstown State U.	120	84(1), 78
Fall '76	Oct. 22-23, 1976	Marshall U.	180	84(5), 415
61st Ann.	Apr 14-15, 1977	Denison U.	170	84(8), 672-673
Fall '77	Oct. 28-29, 1977	Wright State U.	130	85(7), 142
62nd Ann.	Apr 28-29, 1978	U. of Akron	170	85(7), 624
Fall '78	Oct. 20-21, 1978	Ohio Northern U.	150	86(1), 75
63rd Ann.	Apr 20-21, 1979	Miami U-Middletown	130	86(8), 722-723

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Meeting	**Dates**	**Host Institution**	**Attendance**	***Monthly reference***
Fall '79	Oct. 19-20, 1979	C. of Wooster	130	87(2), 158
64th Ann.	Apr 25-26, 1980	Wittenberg U.	130	87(7), 602-603
Fall '80	Oct. 17-18, 1980	John Carroll U.	145	88(1), 83
65th Ann.	Apr 10-11, 1981	Miami U.	130	-----
Fall '81	Oct. 23-24, 1981	Lorain Co. C.C.	130	
66th Ann.	April 30- May 1, 1982	Capital U.	150	
Fall '82	Oct. 22-23, 1982	Youngstown State U.	130	
67th Ann.	Apr 22-23, 1983	Marietta C.	186	
Fall '83	Nov. 4-5, 1983	Baldwin-Wallace	103	
68th Ann.	Apr 13-14, 1984	Bowling Green State U.	174	
Fall '84	Nov. 2-3, 1984	Muskingum C.	125	
69th Ann.	Apr 12-13, 1985	U. of Akron	198	
Fall '85	Nov. 1-2, 1985	U. of Dayton	106	
70th Ann.	Apr 25-26, 1986	John Carroll U.	145	
Fall '86	Oct. 24-25, 1986	U. of Toledo	101	
71st Ann.	Apr 10-11, 1987	Ohio U.	216	
Fall '87	Oct. 30-31, 1987	C. of Wooster	93	
72nd Ann.	Apr 29-30, 1988	Kent State U.	175	
Fall '88	Oct. 21-22, 1988	Wittenberg U.	97	

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Meeting	Dates	Host Institution	Attendance	*Monthly reference*
73rd Ann.	April 7-8, 1989	Ohio State U.	164	
Fall '89	Oct. 20-21, 1989	Denison U.	97	
74th Ann.	Apr 27-28, 1990	U. of Cincinnati	151	
Fall '90	Oct. 19-20, 1990	Marietta C.	64	
75th Ann.	April 5-6, 1991	Bowling Green State U.	126	
Fall '91	Oct. 25-26, 1991	John Carroll U.	116	
76th Ann.	Mar 27-28, 1992	U. of Dayton	97	
Fall '92	Oct. 30-31, 1992	Xavier U.	104	
77th Ann.	Apr 16-17, 1993	Kent State U.	96	
Fall '93	Oct. 22-23, 1993	Ohio Northern U.	96	
78th Ann.	April 8-9, 1994	Miami U.	101	
Fall '94	Oct. 28-29, 1994	U. of Findlay	135	
79th Ann.	Apr 21-22, 1995	Ohio State U.	70	
Fall '95	Oct. 20-21, 1995	Central State U.	79	
80th Ann.	Apr 12-13, 1996	U. of Akron		
Fall '96	Oct. 25-26, 1996	Denison U.	133	
81st Ann.	Apr 11-12, 1997	Youngstown State U.		
Fall '97	Oct. 24-25, 1997	Shawnee State U.	86	
82nd Ann.	Apr 17-18, 1998	John Carroll U.	113	

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Meeting	Dates	Host Institution	Attendance	*Monthly reference*
Fall '98	Oct. 9-10, 1998	Columbus State CC	85	
83rd Ann.	Mar 26-27, 1999	U. of Dayton	105	
Fall '99	Oct. 22-23, 1999	C. of Wooster	116	
84th Ann.	April 7-8, 2000	Marshall U.	106	
Fall 2000	Oct. 27-28, 2000	Wittenberg U.	84	
85th Ann.	Mar 23-24, 2001	Bowling Green State U.	125	
Fall 2001	Oct. 26-27, 2001	Marietta C.	114	
86th Ann.	April 5-6, 2002	Xavier U.	102	
Fall 2002	Oct. 25-26, 2002	Kent State U., Trumbull	118	
87th Ann.	April 4-5, 2003	Ohio State U.	115	
Fall 2003	Oct. 17-18, 2003	Ohio Northern U.	71	
88th Ann.	Mar 26-27, 2004	U. of Cincinnati	94	
Fall 2004	Oct. 22-23, 2004	John Carroll U.	83	
89th Ann.	April 1-2, 2005	Miami U.	74	
Fall 2005	Oct 21-22, 2005	Ashland U.	93	
90th Ann.	March 31-April 1, 2006	U. of Akron	112	
Fall 2006	Oct. 27-28, 2006	Muskingum C.	82	
91st Ann.	Apr 13-14, 2007	Shawnee State U.	67	
Fall 2007	Oct. 26-27, 2007	Wittenberg U.		

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Meeting	Dates	Host Institution	Attendance	*Monthly reference*
92nd Ann.	Apr 11-12, 2008	Marietta C.		
Fall 2008	Oct. 24-25, 2008	Capital U.		
93rd Ann.	April 3-4, 2009	Bowling Green State U.		
Fall 2009	Oct. 30-31, 2009	Kenyon C.		
94th Ann.	Apr 16-17, 2010	Kent State U.		
Fall 2010	Oct. 22-23, 2010	Ursuline C.	97 (23)	
95th Ann.	Mar 25-26, 2011	Youngstown State U	153 (83)	
Fall 2011	Oct. 21-22, 2011	U. of Findlay	111	
96th Ann.	Apr 13-14, 2012	Xavier U.	127	
Fall 2012	Oct. 19-20, 2012	Baldwin-Wallace	98 (9)	
97th Ann.	April 5-6, 2013	Denison U.	171 (74)	
Fall 2013	Oct. 4-5, 2013	Cleveland State U.	129 (35)	
98th Ann.	April 4-5, 2014	U. of Toledo	176 (87)	
Fall 2014	Oct. 31-Nov. 1, 2014	Wittenberg U.	139	
99th Ann.	Mar 27-28, 2015	Marshall U.	158	
Fall 2015	Oct 23-24, 2015	Capital U.	99 (27)	
100th Ann.	Apr 8-9, 2016	Ohio Northern U.		

Recent Annual Meetings have had substantial student attendance, some given in ( ).

Appendix C

Section Officers

(See below for Secretary, Treasurer and Section Governor.)

Year	Chairman/ President*	Program Chair	3rd Exec Comm. Member
1915-16	R. B. Allen Kenyon C.		C. C. Morris Ohio State U.
1916-17	Theodore M. Focke Case School of Appl. Sci.		C. C. Morris Ohio State U.
1917-18	Forbes B. Wiley Denison U.		C. L. Arnold Ohio State U.
1918-19	Charles N. Moore U. of Cincinnati		H. W. Kuhn Ohio State U,
1919-20	R. L. Borger Ohio U.		S. E. Rasor Ohio State U.
1920-21	S. E. Rasor Ohio State U.		A. D. Pitcher Western Reserve U.
1921-22	B. F. Yanney C. of Wooster		K. D. Swartzel Ohio State U.
1922-23	H. L. Coar Marietta C.		J. H. Weaver Ohio State U.
1923-24	William E. Anderson Miami U.	R. B. Allen Kenyon College	V. B. Caris Ohio State U.
1924-25	Harris Hancock U. of Cincinnati	Charles N. Moore U. of Cincinnati	R. B. Allen Kenyon C.
1925-26	R. D. Bohannan Ohio State U.	H. W. Kuhn Ohio State U.	C. C. MacDuffee Ohio State U.
1926-27	H. W. Kuhn Ohio State U.	I. A. Barnett U. of Cincinnati	H.M. Beatty Ohio State U.
1927-28	C. H. Yeaton Oberlin C.	E. H. Clarke Hiram C.	C. T. Bumer Ohio State U.

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Year	Chairman/ President*	Program Chair	3rd Exec Comm. Member
1928-29	E. H. Clarke Hiram C.	Theodore M. Focke Case School of Appl. Sci.	S. A. Rowland Ohio Wesleyan U.
1929-30	S. A. Rowland Ohio Wesleyan U.	Henry Blumberg Ohio State U.	S. E. Rasor Ohio State U.
1930-31	W. G. Simon Western Reserve U.	Louis Brand U. of Cincinnati	C. C. Morris Ohio State U.
1931-32	W. D. Cairns Oberlin C.	M. O. Tripp Wittenberg C.	H. M. Beatty Ohio State U,
1932-33	O. L. Dustheimer Baldwin-Wallace C.	F. E. Carr Oberlin C.	J. H. Weaver Ohio State U.
1933-34	I. A. Barnett U. of Cincinnati	B. F. Yanney C. of Wooster	F. R. Danforth Ohio State U.
1934-35	Henry Blumberg Ohio State U.	C. O. Williamson C. of Wooster	H. W. Kuhn Ohio State U.
1935-36	Jesse Pierce Heidelberg C.	J. R. Musselman Western Reserve U.	J. H. Weaver Ohio State U.
1936-37	J. H. Weaver Ohio State U.	J. B. Brandeberry U. of Toledo	C.C. Williamson C. of Wooster
1937-38	O. E. Brown Case School of Appl. Sci.	Mary E. Sinclair Oberlin C.	S. E. Rasor Ohio State U.
1938-39	C. O. Williamson C. of Wooster	Forbes B. Wiley Denison U.	C. E. Rhodes Ohio State U.
1939-40	Wayne Dancer U. of Toledo	Lincoln LaPaz Ohio State U.	J. H. Weaver Ohio State U.
1940-41	J. R. Musselman Western Reserve U.	H. A. Bender U. of Akron	C. R. Wylie, Jr. Ohio State U.
1941-42	Louis Brand U. of Cincinnati	I. A. Barnett U. of Cincinnati	Lincoln LaPaz Ohio State U.
1942-43	C. T. Bumer Kenyon C.	Harry S. Pollard Miami U.	G. E. Albert Ohio State U.

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Year	Chairman/ President*	Program Chair	3rd Exec Comm. Member
1943-44	Tibor Rado Ohio State U.	R. C. Hildner Mt. Union C.	C. R. Wylie Ohio State U.
1944-46	J. B. Brandeberry U. of Toledo	A. C. Ladner Denison U.	H. M. MacNeille Kenyon C.
1946-47	S. A. Rowland Ohio Wesleyan U.	Forbes B. Wiley Denison U.	E. J. Mickle Ohio State U.
1947-48	Harry S. Pollard Miami U.	C. H. Yeaton Oberlin C.	E. J. Mickle Ohio State U.
1948-49	R. H. Marquis Ohio U.	Wayne Dancer U. of Toledo	Leslie H. Miller Ohio State U.
1949-50	E. P. Vance Oberlin C.	I. A. Barnett U. of Cincinnati	R. L. Swain Ohio State U.
1950-51	V. C. Stechschulte Xavier U.	L. C. Knight, Jr. Muskingum C.	D. R. Whitney Ohio State U.
1951-52	R. F. Rinehart Case Inst. Tech.	H. R. Mathias Bowling Green State U.	Leslie Miller Ohio State U.
1952-53	E. J. Mickle Ohio State U.	W. R. Transue Kenyon C.	Herbert Ryser Ohio State U.
1953-54	P. R. Rider Wright-Patterson AFB	L. L. Lowenstein Kent State U.	H. H. Alden Ohio State U.
1954-55	W. R. Transue Kenyon C.	Marion D. Wetzel Denison U.	E. J.Mickle Ohio State U.
1955-56	R. R. Stoll Oberlin C.	Wade Ellis Oberlin C.	W. E. Deskins Ohio State U.
1956-57	Paul. V. Reichelderfer Ohio State U.	H. David Lipsich U. of Cincinnati	W. E. Deskins Ohio State U.
1957-58	Samuel Selby U. of Akron	E. B. Leach Case Inst. of Tech.	Andrew Sterrett Denison U.
1958-59	L. E. Bush Kent State U.	H. E. Tinnappel Bowling Green State U.	Melvin Bloom Miami U.

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Year	Chairman/ President*	Program Chair	3rd Exec Comm. Member
1959-60	W. R. VanVoorhis Fenn C.	R. W. Shoemaker U. of Toledo	Grace Johnson (acting member)
1960-61	Wade Ellis Oberlin C.	C. W. Topp Fenn C.	Wendell Johnson Hiram C.
1961-62	R. L. Wilson Ohio Wesleyan U.	W. E. Restemeyer U. of Cincinnati	Charles Saltzer U. of Cincinnati
1962-63	Wendell G. Johnson Hiram C.	Clarence Heinke Capital U.	F. C. Ogg Bowling Green St U
1963-64	Charles E. Capel Miami U.	J. W. Warner C. of Wooster	M. P. Fobes C. of Wooster
1964-65	Andrew Sterrett Denison U.	Robert A. Roberts Denison U.	William T. Fishback Ohio U.
1965-66	William T. Fishback Ohio U.	Dean Robb Baldwin-Wallace C.	[Exec. Comm. changed in 1964 Bylaws]
1966-67	H. David Lipsich U. of Cincinnati	David H. Staley Ohio Wesleyan U.	
1967-68	Daniel T. Finkbeiner Kenyon C.	Bernard J. Yozwiak Youngstown State U.	
1968-69	Arnold E. Ross Ohio State U.	R. A. Clark Case-Western Reserve U.	
1969-70	James L. Smith Muskingum C.	J. Frederick Leetch Bowling Green State U.	
1970-71	Bernard J. Yozwiak Youngstown State U.	Richard G. Laatsch Miami U.	
1971-72	S. Elwood Bohn Miami U.	Raymond Rolwing U. of Cincinnati	
1972-73	S. Will Hahn Wittenberg U.	Stanley F. Dice Wittenberg U.	

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Year	Chairman/ President*	Program Chair	3rd Exec Comm. Member
1973-74	J. Frederick Leetch Bowling Green State U.	James A. Murtha Marietta C.	
1974-75	Louis J. Green Case-Western Reserve U.	Richard A. Little Kent State U.-Stark	
1975-76	Richard G. Laatsch Miami U.	Richard S. Varga Kent State U.	
1976-77	James A. Murtha Marietta C.	Marion D. Wetzel Denison U.	
1977-78	William H. Beyer U. of Akron	James H. Carney Lorain County C.C.	
1978-79	Marion D. Wetzel Denison U.	Clifford A. Long Bowling Green St. U.	
1979-80	Donald O. Koehler Miami U.	H. Westcott Vayo U. of Toledo	
1980-81	Clifford A. Long Bowling Green State U.	Darrell J. Horwath John Carroll U.	
1981-82	J. Douglas Faires Youngstown State U.	Alan Poorman Ashland C.	
1982-83	Darrell J. Horwath John Carroll U.	Joan Leitzel Ohio State U.	
1983-84	Richard A. Little Baldwin-Wallace C.	Edward Merkes U. of Cincinnati	
1984-85	James Leitzel Ohio State U.	Robert Dieffenbach Miami U.-Middletown	
1985-86	Alan Poorman Ashland C.	Thomas Hern Bowling Green State U.	
1986-87	Milton Cox Miami U.	Olaf Stackelberg Kent State U.	
1987-88	J. William Friel U. of Dayton	Hari Shankar Ohio U.	

Appendix C

Year	Chairman/ President*	Program Chair	3rd Exec Comm. Member
1988-89	Charles Hampton * C. of Wooster	Janet B. Roll Findlay C.	
1989-90	Olaf Stackelberg Kent State U.	V. Frederick Rickey Bowling Green State U.	
1990-91	Janet B. Roll U. of Findlay	W. James Dillon Mt. Union C.	
1991-92	David E. Kullman Miami U.	Barbara Flajnik Wittenberg U.	
1992-93	Al Stickney Wittenberg U.	Frank Carroll Ohio State U.	
1993-94	Thomas Hern Bowling Green State U.	John Michel Marietta C.	
1994-95	Floyd Barger Youngstown State U.	Roger Marty Cleveland State U.	
1995-96	John Michel Marietta C.	Leo Schneider John Carroll U.	
1996-97	Barbara (Flajnik) Ashton Wittenberg U.	Danny Otero Xavier U.	
1997-98	Leo Schneider JohnCarroll U.	Judith Palagallo U. of Akron	
1998-99	Roger Marty Cleveland State U.	Harold Putt Ohio Northern U.	
1999-2000	Aparna Higgins U. of Dayton	Thomas Gantner U. of Dayton	
2000-01	Judith Palagallo U. of Akron	Dale Mugler U. of Akron	
2001-02	Thomas Gantner U. of Dayton	Dwight Olson John Carroll U.	
2002-03	Harold Putt Ohio Northern U.	Sherri Brugh Mount Union C.	

Appendix C

Year	Chairman/ President*	Program Chair	3rd Exec Comm. Member
2003-04	Dale Mugler U. of Akron	Carl Spitznagel John Carroll U.	
2004-05	Mark Smith Miami U.	Vicki Van Dresar Ashland U.	
2005-06	Dwight Olson John Carroll U.	Vicki Van Dresar Ashland U.	
2006-07	Thomas Dence Ashland U.	Barbara D'Ambrosia John Carroll U.	
2007-08	William Higgins Wittenberg U.	Don Hunt Ohio Northern U.	
2008-09	Vicki Van Dresar Ashland U.	John Stadler Capital U.	
2009-10	Mark Miller Marietta C.	Brian Shelburne Wittenberg U.	
2010-11	Don Hunt Ohio Northern U.	Philip Blau Shawnee State U.	
2011-12	Jon Stadler Capital U.	David Singer Case Western Reserve U.	
2012-13	Wiebke Diestelkamp U. of Dayton	Adam Parker Wittenberg U.	
2013-14	Philip Blau Shawnee State U.	Lewis Ludwig Denison U.	
2014-15	John Prather Ohio U., Eastern	Matthew Menzel Marietta C.	
2015-16	Daniel Otero Xavier U.	William Fuller Ohio Northern U.	

* In 1988 the title of this office was changed from "Chairman" to "President."

Appendix C

Secretary-Treasurer

1915-26	George N. Armstrong	Ohio Wesleyan U.
1926-47	Rufus Crane	Ohio Wesleyan U.
1947-72	Foster Brooks	Kent State U.
1972-75	Raymond H. Rolwing	U. of Cincinnati
1975-82	Gus Mavrigian	Youngstown State U.
1982-85	Andrew Sterrett, Jr.	Denison U.
1985-91	John R. Michel	Marietta C.
1991-97	Darrell Horwath	John Carroll U.
1997-99	Janet Roll	U. of Findlay
1999-2006	J. William Friel	U. of Dayton

Treasurer

2006-07	J. William Friel	U. of Dayton
2007-10	Charles Hampton	C. of Wooster
2010-16	Brian Shelburne	Wittenberg U.

Secretary

2006-10	Mark De Saint-Rat	Miami-Middletown
2010-18	Pamela Warton	U. of Findlay

Appendix C

Section Governor

1949-52	Forbes B. Wiley	Denison U.
1952-55	Lloyd Lowenstein	Kent State U.
1955-58	Ernst Snapper	Miami U.
1958-61	G. M. Merriman	U. of Cincinnati
1961-64	Robert R. Stoll	Oberlin C.
1964-67	Wade Ellis	Oberlin C.
1967-70	H. M. MacNeille	Case Western Reserve U.
1970-73	H. David Lipsich	U. of Cincinnati
1973-76	S. Elwood Bohn	Miami U.
1976-79	Robert L. Wilson	Ohio Wesleyan U.
1979-82	S. Will Hahn	Wittenberg U.
1982-85	William H. Beyer	U. of Akron
1985-88	Andrew Sterrett, Jr.	Denison U.
1988-91	Clifford A. Long	Bowling Green State U.
1991-94	Olaf Stackelberg	Kent State U.
1994-97	David Kullman	Miami U.
1997-2000	Douglas Faires	Youngstown State U.
2000-03	Leo Schneider	John Carroll U.
2003-06	Thomas Hern	Bowling Green State U.
2006-09	Judith Palagallo	Youngstown State U.
2009-12	Al Stickney	Wittenberg U.
2012-15	Barbara D'Ambrosia	John Carroll U.
2015-18	William Higgins	Wittenberg U.

Also Zaven A. Karian (Denison U.) served as an
MAA Governor-at-Large from 1987 to 1990.

Appendix D

Summer Short Courses

[Numbers in square brackets denote attendance.]

1974 Combinatorics
June 10-14, Ohio State U.
Principal Lecturer: D.K. Ray-Chaudhuri (Ohio State) [40].

Numerical Analysis
June 17-21, Kent State U.
Principal Lecturer: James Dailey (Kent State) [20].

1975 Mathematical Programming and Economics,
June 16-20, Youngstown State U.
Principal Lecturer: Gerald Thompson (Carnegie-Mellon) [73].

1976 Probability & Statistics
June 14-18, Bowling Green State U.
Lecturers: R.G. Laha & V.K. Rohatgi (Bowling Green) [49].

1977 Mathematical Problems in Biology and Medicine,
June 14-18, Ohio U.
Jointly sponsored by MAA Ohio and Allegheny Mountain Sections.
Principal Lecturer: Maynard Thompson (Indiana U.) [25].

1978 Application of Control Theory,
June 13-17, Allegheny C., Meadville, PA.
Jointly sponsored by MAA Ohio and Allegheny Mountain Sections.
Principal Lecturer: Don Norris (Ohio U.) [16].

1979 Theory of Computing
June 12-15, U. of Akron.
Principal Lecturer: Eugene Santos (Youngstown State U.) [30].

1980 Recent History of Mathematics
June 10-13, Kenyon College.
Principal Lecturer: Harry Pollard (Purdue) [50].

1981 Numerical Linear Algebra
June 16-19, Ohio State U.
Principal Lecturer: Bostwick Wyman (Ohio State) [42].

1982 Teaching Computer Science in a Mathematics Department
June 8-11, Denison U.
Organizer: Zaven Karian (Denison), Assisted by 15 lecturers [69].

Appendix D

1983 Introduction to Factoring and Primality Testing
June 16-18, Kent State U.
Principal Lecturers: Carl Pomerance and
Sam Wagstaff (U. of Georgia) [49].

Data Structures
June 13-July 1, Denison U.
Principal Lecturer: Zaven A. Karian (Denison) [35].

1984 Systems Programming
June 11-29, Denison U.
Principal Lecturer: Zaven A. Karian (Denison) [31].

1985 Discrete Structures for Computers and Discrete Math.
July 17-19, U. of Akron.
(Originally planned for 1984.)
Principal Lecturers: Donald Beane (Wooster)
and David Buchthal (Akron) [30].

Operating Systems
June 10-28, Bowling Green State U.
Principal Lecturer: Ann-Marie Lancaster (Bowling Green) [24].

Data Structures (Second Round)
June 10-28, Denison U.
Principal Lecturer: Zaven A. Karian (Denison) [11].

1986 History of Calculus
July 16-18, Ashland College.
Principal Lecturer: V. Frederick Rickey (Bowling Green) [36].

1987 A New Unified Approach to Applied Linear Algebra
July 15-17, John Carroll U.
Principal Lecturer: Alan C. Tucker (SUNY-Stony Brook) [46].

1988 Using Computer Algebra Systems to Teach Calculus
July 13-15, Denison U.
Principal Lecturers: Zaven Karian and Andrew Sterrett (Denison) [31]

1988 Critical Thinking and Problem Solving: Geometry and Discrete Mathe
(for Secondary School Teachers)
June 26-July 1, Muskingum College.
Principal Lecturers: James Smith (Muskingum) and Janet Roll (Findla

Appendix D

1989 Topics in Additive Number Theory
July 26-28, Findlay College.
Principal Lecturer: George Andrews (Penn State) [18].

Discrete Mathematics and Electronic Graphing (for Secondary School Teachers),
July 23-August 4, Baldwin-Wallace College.
Principal Lecturer: Richard Little (Baldwin Wallace) [30].

1990 Standards in Mathematics: For the Present and the Future
(for Middle School Teachers)
June 24-29, Muskingum College.
Principal Lecturers: James Smith (Muskingum) and Janet Roll [14].

1991 Problem Solving: How to Teach It.
July 17-19, John Carroll U.
Principal Lecturer: Edward Barbeau (U. of Toronto)

1992 Fractals and Chaos.
June 17-19, Bowling Green State U.
Principal Lecturer: Robert L. Devaney (Boston U.)

1993 *Canceled*

1994 *No course*

1995 Symmetry and Group Theory.
June 15-17, U. Of Dayton
Principal Lecturer: Doris Schattschneider (Moravian College)

1996 Actuarial Mathematics.
June 3-5, Marshall U.
Principal Lecturer: Mathew Carlton

1997 Topics in Discrete Mathematics.
June 5-7, Wittenberg U.
Principal Lecturer: Joe Gallian (U. of Minn.-Duluth)

1998 *Cancelled due to illness*

1999 *Cancelled*

Appendix D

2000 Proofs and Confirmations: The Story of the Alternating Sign Matrix Conjecture
June 28-30, Cedarville College
David M. Bressoud (Macalester C.) [17]

2001 A Mathematical Sampler: 1669-1900.
June 27-29, Ashland U.
Principal Lecturer: William Dunham (Muhlenberg College) [37]

2002 Introduction to Game Theory.
June 27-29, U. of Dayton
Principal Lecturer: Phil Straffin (Beloit College) []

2003 Cryptography.
July 16-18, Capital U.
Principal Lecturer: Robert Lewand (Goucher College) [17]

2004 Teaching and Doing Knot Theory.
June 2-4, Ohio Northern U.
Principal Lecturer: Colin Adams (Williams College) [14]

2005 *Canceled*

2006 Baseball, Statistics, and the Role of Chance in the Game.
June 7-9, Mount Union C.
Principal Lecturer: James Albert (Bowling Green St. U.)

2007 *Canceled*

2008 Study the Masters: Using Primary, Historical Sources in Teaching and Research.
June 18-22, Xavier University.
Principal Lecturers: Daniel Otero (Xavier) and
David Pengelley (New Mexico State U.) [11

2009 Knot Theory.
July 13-14, Denison University
Principal Lecturer: Colin Adams (Williams C.)

(Short Courses were replaced by Fall Workshops.)

Appendix E

MATHEMATICAL ASSOCIATION OF AMERICA
OHIO SECTION

CONSTITUTION

1. The name of this organization shall be "The Ohio Section of the Mathematical Association of America."
2. Any member of the parent organization resident in Ohio shall be, ipso facto, a member of this Section.
3. The officers of the Section shall be a Chairman and a Secretary-Treasurer, each of whom shall be elected at the annual meeting.
4. The Executive Committee shall be made up of the Chairman, the Secretary-Treasurer, and an additional member elected by the Section at the annual meeting.
5. The Executive Committee shall transact all business of the Section between meetings and shall report its actions at the annual meeting of the Section.
6. The annual meeting of the Section shall be held at the same time and place as that of the Ohio College Association, or at such other time and place as fixed either by the Section or by the Executive Committee.
7. The Executive Committee shall call such special meetings as it shall deem expedient.

Adopted December 31, 1915

Appendix E

The CONSTITUTION and BY-LAWS below were adopted by the OHIO SECTION at its forty-eighth annual meeting held at the University of Akron on May 9, 1964.

CONSTITUTION

1. The name of this Organization shall be "The Ohio Section of the Mathematical Association of America", hereafter referred to as the Section.
2. The officers of the Section shall be a President[1], a Past-President, a President-Elect, and a Secreatary-Treasurer. The term of each officer shall be one year beginning at the date of the annual meeting and ending at the date of the next annual meeting. At the annual meeting the President shall become Past-President and shall install the President-Elect as President.
3. The Executive Committee shall consist of the President, the Past-President, a President-Elect, and the Secretary-Treasurer, with the President as chairman.
4. The Nominating Committee shall consist of the three most recent Past-Presidents (or Past-Chairmen) of the Section who are available for membership on the committee and who are not members of the Executive Committee. The most recent Past-President (or Past-Chairman) shall be chairman of the nominating committee.
5. The Annual Meeting of the Section shall be held at a time and place as fixed either by the Executive Committee or by the Section.
6. The Program Committee shall consist of three members, one elected each year by the Section at the annual meeting, to serve for a term of three years and to act as chairman for the final year of his term.

7. The Executive Committee shall call such special meetings as it deems necessary or expedient.
8. This constitution may be amended by the membership by written ballot, not more than one ballot per member, provided 55 percent of the ballots cast support the proposed amendment. The Secretary-Treasurer shall circulate a proposed amendment with appropriate ballot to all members upon receipt of an amendment proposal endorsed by at least ten members of the Section.

[1]The title "President" was changed to "Chairman" at the request of the MAA Committee on Sections.

BYLAWS

1. The President shall be the chief executive officer of the Section. He shall preside at all meetings of the Section as such, and shall be Chairman of the Executive Committee of the Section.
2. The Executive Committee shall transact the business of the section between meetings of the Section and shall report its actions at the annual meeting of the Section. In case of a special meeting of the Section, the Executive Committee shall submit an interim report of its actions since the last preceding meeting of the Section. Interim reports will be included in the report submitted at the next succeeding annual meeting.
3. With the aid of the Program Committee, which shall arrange suitable programs, The Executive Committee shall have the responsibility of organizing the annual meeting and all other meetings. At its discretion, it may delegate this responsibility to sub-committees appointed by it from the membership.

4. The Executive Committee shall formulate plans and policies for the consideration of the Section in meeting assembled. In making such formulations, it shall take into account any and all suggestions which it may receive from individual members of the Section. In particular, it shall formulate and present at the annual meeting a budget to finance the operations of the Section for the year following such annual meeting.
5. Membership dues, in an amount to be fixed by the Executive Committee but not to exceed one dollar per year, may be assessed. Once the amount of the dues is set, it shall remain fixed until changed by the Executive Committee.
6. In the first year after the adoption of these by-laws, the Nominating Committee shall nominate candidates for the offices of President, President-Elect, and Secretary-Treasurer, and for one member of the Program Committee. In subsequent years the Nominating Committee shall nominate candidates for the office of President-Elect and Secretary-Treasurer and for one member of the Program Committee. The report of the Nominating Committee shall be addressed to the Section through the President, and shall reach the President's office not later than ten days prior to the date of the next succeeding annual meeting. In the Preliminary announcement of the next succeeding annual meeting to be circulated to the membership not later than thirty days prior to that meeting. The Secretary-Treasurer shall include a request for suggestions from members to the Nominating Committee relative to names of possible candidates for the offices to be filled. The name and address of the chairman of the Nominating Committee shall be included.
7. The election of officers shall be held at the annual meeting. The report of the Nominating Committee shall constitute a list of candidates. This list may be augmented by nomina-

tions made and seconded from the floor. All elections of officers shall be by simple majority vote of those present and voting.

8. In case of the vacation of an office between annual meetings, the procedure shall be as follows:

   a. Past-President. The most recently retired Past-President who is available for appointment shall be recalled to the office.

   b. President. The President-Elect shall succeed to the office and shall serve the remainder of the term and the succeeding term. In this case the Executive Committee shall appoint a fourth member of the Executive Committee to serve until the following annual meeting.

   c. President-Elect. The Executive Committee shall appoint a fourth member of the Executive Committee to serve until the following annual meeting. The Nominating Committee shall, in this case, nominate candidates for the offices of President, President-Elect, and Secretary-Treasurer, and member of Program Committee to stand for election at that meeting.

   d. Secretary-Treasurer. The Executive Committee shall appoint a Secretary-Treasurer to serve until the next succeeding annual meeting.

   e. Program Committee. The remaining member of the Committee next in sequence to act as chairman shall do so, and those junior to the absentee shall advance one year in sequence. At the next annual meeting additional members as needed shall be elected for short terms to restore the regular sequence of this committee.

Appendix E

9. These By-Laws may be amended by the membership in annual meeting assembled, by a simple majority vote.

Appendix E

Revision as voted by the Section, May, 1992.

THE OHIO SECTION
OF THE
MATHEMATICAL ASSOCIATION OF AMERICA, INC.

BY-LAWS

ARTICLE I
Name and Purpose

1. The name of this Section shall be ``The Ohio Section of the Mathematical Association of America, Inc", hereinafter referred to as The Section.
2. The purpose of The Section shall be to further the development and understanding of, and instruction in, the mathematical sciences by carrying out the purposes of the national organization within the territory defined below in Article II, section 1.a.

ARTICLE II
Membership

1. The membership of The Section shall be as follows:
   a. Members of The Mathematical Association of America, Inc., residing in the State of Ohio and in the County of Cabell in the State of West Virginia, zip codes 43001-45899 and 25700-25799.
   b. Members of The Mathematical Association of America, Inc., not being resident in the territory of this Section, who have become members of this Section in accordance with Article VI of the By-Laws of the Mathematical Association of America, Inc.

Appendix E

ARTICLE III
Officers

1. The officers of The Section shall be a President, a Past-President, a President-Elect, a Secretary-Treasurer, a Secretary-Treasurer-Elect (when this office is filled), and a Section Governor.
2. Each Section officer must be a member of the Mathematical Association of America, Inc., and of The Section.
3. The term of office of the President-Elect shall be one year. At the end of this term, the President-Elect shall become President. A President-Elect shall be elected each year at the Annual Meeting of The Section and shall assume office upon the adjournment of that Annual Meeting.
4. The term of office of the President shall be one year, beginning with the end of the term as President-Elect.
5. The term of office of the Past-President shall be one year, beginning with the end of the term as President.
6. The term of office of the Secretary-Treasurer-Elect shall be one year. At the end of this term, the Secretary-Treasurer-Elect shall become Secretary-Treasurer. A Secretary-Treasurer-Elect shall be elected at the Annual Meeting one year prior to the completion of the term of the Secretary-Treasurer and shall assume office upon adjournment of that Annual Meeting.
7. The term of office of the Secretary-Treasurer shall be three years, beginning with the end of the term as Secretary-Treasurer-Elect.
8. Elections to offices shall be held at the Annual Meeting. The list of candidates nominated by the Nominating Committee may be augmented by nominations made and seconded from the floor. All elections shall be by simple ma-

jority vote of those members of The Section present and voting.

9. Except as provided in Article III, Section 10, no one who has served as President for a term of at least six months shall be eligible for election as President-Elect or for appointment as President-Elect or President until at least four years have elapsed since the last membership on the Executive Committee resulting from election to the post of President-Elect or President as the case may be.

10. If an office becomes vacant between Annual Meetings, the procedure shall be as follows:
    a. The most recently retired past-president who is available for appointment shall be recalled to the office.
    b. President. The President-Elect shall succeed to the office and shall serve the remainder of the term and through the succeeding term. The Executive Committee shall appoint an additional member to the Executive Committee (not as President-Elect) to serve until the next Annual Meeting.
    c. President-Elect. The Executive Committee shall appoint an additional member to the Executive Committee (not as President-Elect) to serve until the next Annual Meeting. The Nominating Committee shall in this case nominate a candidate for President to stand for election at the next Annual Meeting.
    d. Secretary-Treasurer-Elect. This office shall remain vacant until the next Annual Meeting at which time a Secretary-Treasurer-Elect would be elected as provided for in Article III, Section 7. The Nominating Committee shall nominate a candidate for Secretary-Treasurer to stand for election at the next Annual Meeting.

e. Secretary-Treasurer. If there is a Secretary-Treasurer-Elect, the Secretary-Treasurer-Elect shall succeed to the office of Secretary-Treasurer and shall serve the remainder of the term and through the succeeding term. If there is no Secretary-Treasurer-Elect, the Executive Committee shall appoint a Secretary-Treasurer to serve until the next Annual Meeting. The Nominating Committee shall, in this case, nominate a candidate for Secretary-Treasurer to stand for election at the next Annual Meeting, this election to be for a full term of three years.

f. Chair of the Program Committee. The member of the Program Committee next in line to become Chair shall assume that office and shall hold it to the end of the term to which the member was elected.

g. Other Members of the Program Committee. The Nominating Committee shall appoint candidates for membership on the Program Committee to fill the vacancies for the remainder of the respective terms. Members elected to fill vacancies shall succeed to the Chair in the third year of the regular term, the unexpired portion of which they are completing, except in the case in which the office of Chair of the Program Committee is filled under the provisions of Article III, Section 10, f.

11. The President shall be the chief executive officer of The Section, presiding at all business meetings of The Section and of the Executive Committee, shall appoint all committees except those whose memberships are provided for in these By-Laws (unless otherwise directed by The Section), and shall be an ex-officio member of all committees.

12. The Secretary-Treasurer shall perform the following duties: 1) keep all the books, accounts, records and minutes of

meetings of The Section, 2) circulate preliminary announcements of Annual Meetings and announcements of all other meetings of The Section, 3) receive all monies paid to The Section for membership dues and fees and for all other purposes and shall deposit such monies in a federally insured account of The Section, and 4) pay all bills of The Section out of The Section funds.

13. The Past-President shall be a member of the Executive Committee and shall perform such other duties as may be delegated or assigned by the President.
14. The President-Elect shall be a member of the Executive Committee and shall prepare to assume the duties and responsibilities of the Office of the President.
15. The Secretary-Treasurer-Elect shall be a member of the Executive Committee and shall prepare to assume the duties and responsibilities of the office of Secretary-Treasurer.
16. The President of The Section shall appoint, for terms of appropriate length, members of The Section to such offices as are necessary for the execution of the Section's business, e.g., newsletter editor, public information officer, and the representative to the Ohio Mathematics Association for Two-Year Colleges.

Appendix E

Article IV
Committees

1. The Executive Committee shall consist of the officers of The Section, the Chairs of the Program Committee, the Committee on Section Activities, the Committee on Curriculum, the Committee on Teacher Education and Certification, and the Committee on Student Members. The President of The Section shall be the Chair of the Executive Committee.
2. Duties of the Executive Committee:
    a. The Executive Committee shall transact the business of The Section between the Annual Meetings of The Section and shall report its actions to The Section at the next Annual Meeting. In case of a special meeting of The Section, the Executive Committee shall submit an interim report of its actions since the last meeting of The Section. Interim reports will be included in the report submitted at the next Annual Meeting.
    b. The Executive Committee shall formulate plans and policies for the consideration of The Section in meeting assembled. In making such formulations, it shall take into account any and all suggestions which it may receive from members of The Section. In addition, the Executive Committee shall fix the dues and fees as described in Article V. In particular, it shall formulate and present at the Annual Meeting a budget to finance the operations of The Section for the year following the Annual Meeting.
    c. With the aid of the Program Committee, the Executive Committee shall have the responsibility of organizing the Annual Meeting and all other meetings. At its discretion, the Executive Committee may del-

egate this responsibility or any part of it to subcommittees which the President may appoint from the membership of The Section.

3. The Program Committee shall consist of three members of The Mathematical Association of America, Inc., who are also members of The Section, one elected each year by the Section at its Annual Meeting to serve for a term of three years and to act as Chair of the Program Committee during the third year of the term. The newly elected member of the Program Committee shall take office upon the adjournment of the Annual Meeting at which the member is elected.
4. The Program Committee shall arrange, in cooperation with the Executive Committee, suitable programs for presentation at the Annual Meetings and other meetings of The Section.
5. The Nominating Committee shall consist of the three most recent past presidents of The Section who are members of The Section and are available for membership on the Nominating Committee, and who are not the Past-President. The most recent past president on the Nominating Committee shall be Chair of the Nominating Committee.
6. The Nominating Committee shall nominate at least one candidate for the office of President-Elect each year, at least one candidate for membership on the Program Committee each year, and at least one candidate for the office of Secretary-Treasurer-Elect one year prior to the expiration of the term of office of the Secretary-Treasurer. (The Secretary-Treasurer may be nominated as Secretary-Treasurer-Elect.) It shall also nominate candidates to fill vacancies in accordance with the provisions of Article III, Section 10. The report of the Nominating Committee shall be included in the written notification sent to members of the Annual Meeting at which the elections will be held. (Cf. Article V, section 5.)

7. The officers of The Section shall nominate at least two candidates for the office of Section Governor during the final year of the term of the incumbent Section Governor.
8. The Committee on Section Activities (CONSACT) shall consist of a chair and various members of The Section appointed by the President of The Section for staggered three-year terms. Its duties shall consist of such activities of The Section as are charged to it by the President of The Section.
9. The Committee on Curriculum (CONCUR) shall consist of a chair and various members of The Section appointed by the President of The Section for staggered three-year terms. Its duties shall consist of ongoing studies of mathematics curriculum and such other related matters as may be charged to it by the President of The Section.
10. The Committee on Teacher Education and Certification (CONTEAC) shall consist of a chair and various members of The Section appointed by the President of The Section for staggered three-year terms. Its duties shall consist of continual study of teacher training and accreditation in the state, reporting same to The Section, preparing recommendations for appropriate state authorities, and such other related matters as are charged to it by the President of The Section.
11. The Committee on Student Members (CONSTUM) shall consist of a chair and various members of The Section appointed by the President of The Section for staggered three-year terms. Its duties shall consist of directing and coordinating all activities of The Section which are specifically for student members of The Section, e.g., enrolling students as members of The Association, organizing and supporting student chapters, and organizing student paper sessions as meetings of The Section. The chair of the committee will serve as the Section Coordinator for Student Chapters.

Appendix E

ARTICLE V
Meetings

1. The Section shall hold one regular meeting (called the Annual Meeting) each year.
2. The time and place of the Annual Meeting shall be determined by the Executive Committee.
3. The programs for all meetings shall be arranged by the Program Committee.
4. The Executive Committee shall call such special meetings as it deems necessary or expedient. It shall fix the time and place of such special meetings.
5. The members of The Section shall be notified in writing of any regular or special meeting at least ten days in advance of the meeting. If there is to be an election held, the report of the Nominating Committee will be included in the written announcement of the meeting.
6. A quorum shall consist of those members of The Section present at a properly called meeting.

ARTICLE VI
Finances and Use of Assets

1. A registration fee in an amount fixed by the Executive Committee will be paid by each person in attendance at section meetings. Students shall be exempt from paying this fee.
2. The Executive Committee is authorized to establish annual dues for members to be paid to the Secretary-Treasurer.
3. The Secretary-Treasurer is authorized to accept financial contributions from individuals and organizations. Such contributions must be used in accordance with Article I, Section 2, of these By-Laws. Any individual or organiza-

tion providing such support shall be designated as a Contributor to the Ohio Section.

4. A Life Payment of Fees option shall be available to any member of The Section who satisfies a minimum age requirement set by the Executive Committee and completes payment of a single sum in an amount fixed by the Executive Committee. Such an individual shall be designated as a Life Member of the Ohio Section and shall be exempt from paying dues and registration fees.
5. The assets of The Section shall be used exclusively to further the purposes of The Section, and in the event of the dissolution of The Section, the remaining assets shall be returned to the national organization to be used for a purpose consistent with the purpose of the national organization.

ARTICLE VII
Amendments

1. These By-Laws may be amended, subject to the approval of the Board of Governors of The Mathematical Association of America, Inc., in the following manner:
    a. Amendments may be proposed by the Executive Committee or by the written endorsement of at least ten members of The Section.
    b. Proposed amendments will be distributed to the membership of The Section not less than ten days prior to the next meeting of The Section, and opportunity for discussion of the proposed amendment will be provided for in the program of the meeting.
    c. The proposed amendment with any modifications adopted by a majority of those present and voting at the meeting referred to in b above shall be circulated together with a ballot for a mail vote in the next

regular mailing or in an earlier mailing if so directed at the meeting by the Executive Committee. Instructions will be included to inform the membership of the deadline for reception of ballots, such deadline to be not less than one month from the date of mailing.

d. The proposed amendment will become an amendment approved by members of The Section provided at least 55 percent of the ballots returned by the deadline specified so affirm.

e. When an amendment has been approved by the members of The Section, it must be submitted in the required number of copies to the Committee on Sections for its recommendation to The Board of Governors.

2. A complete revision of this set of By-Laws will be subject to the same procedure as that for amending this set.

[Darrell Horwath, John Carroll U.]

Appendix E

This version of the By-Laws of the Ohio Section of the Mathematical Association of America was approved on 11 August 2004 by the National Board of Governors at its summer meeting in Providence, RI. This revision was written by the By-Laws Subcommittee: D. J. Horwath & J. William Friel.

THE OHIO SECTION

OF THE

MATHEMATICAL ASSOCIATION OF AMERICA

BY-LAWS

ARTICLE I

Name and Purpose

1. The name of this Section shall be "The Ohio Section of the Mathematical Association of America", hereinafter referred to as The Section.
2. The purpose of The Section shall be to further the development and understanding of, and instruction in, the mathematical sciences by carrying out the purposes of the national organization within the territory defined below in Article II, section 1.a.

ARTICLE II

Membership

1. The membership of The Section shall be as follows:
   a. Members of The Mathematical Association of America, residing in the State of Ohio or in the County of Cabell in the State of West Virginia, zip codes 43001-45899 or 25700-25799.

b. Members of The Mathematical Association of America, not being resident in the territory of this Section, who have become members of this Section in accordance with Article VI of the By-Laws of the Mathematical Association of America.

ARTICLE III

Officers

1. The officers of The Section shall be a President, a Past-President, a President-Elect, a Secretary, a Secretary-Elect (when this office is filled), a Treasurer, a Treasurer-Elect (when this office is filled), and a Section Governor.

2. Each Section officer must be a member of the Mathematical Association of America, and of The Section.

3. The term of office of the President-Elect shall be one year. At the end of this term, the President-Elect shall become President. A President-Elect shall be elected each year at the Annual Meeting of The Section and shall assume office upon the adjournment of that Annual Meeting.

4. The term of office of the President shall be one year, beginning with the end of the term as President-Elect.

5. The term of office of the Past-President shall be one year, beginning with the end of the term as President.

6. The term of office of the Secretary-Elect shall be one year. At the end of this term, the Secretary-Elect shall become Secretary. A Secretary-Elect shall be elected at the Annual Meeting

one year prior to the completion of the term of the Secretary and shall assume office upon adjournment of that Annual Meeting.

7. The term of office of the Treasurer-Elect shall be one year. At the end of this term, the Treasurer-Elect shall become Treasurer. A Treasurer-Elect shall be elected at the Annual Meeting one year prior to the completion of the term of the Treasurer and shall assume office upon adjournment of that Annual Meeting. To effect a staggering of offices, the first Treasurer-Elect shall be elected one year after the first Secretary-Elect. Also if necessary, the Executive Committee may appoint an Interim Secretary or an Interim Treasurer to facilitate this staggering of offices.

8. The term of office of the Secretary shall be three years, beginning with the end of the term as Secretary-Elect.

9. The term of office of the Treasurer shall be three years, beginning with the end of the term as Treasurer-Elect.

10. Elections to offices shall be held at the Annual Meeting. The list of candidates nominated by the Nominating Committee may be augmented by nominations made and seconded from the floor. All elections shall be by simple majority vote of those members of The Section present and voting.

11. Except as provided in Article III, Section 12, no one who has served as President for a term of at least six months shall be eligible for election as President-Elect or for appointment as President-Elect or President until at least four years have elapsed since the last membership on the Executive Committee resulting from election to the post of President-Elect or President as the case may be.

12. If an office becomes vacant between Annual Meetings, the procedure shall be as follows:

    a. Past-President. The most recent past-president who is available for appointment shall be recalled to the office.

    b. President. The President-Elect shall succeed to the office and shall serve the remainder of the term and through the succeeding term. The Executive Committee shall appoint an additional member to the Executive Committee (not as President-Elect) to serve until the next Annual Meeting.

    c. President-Elect. The Executive Committee shall appoint an additional member to the Executive Committee (not as President-Elect) to serve until the next Annual Meeting. The Nominating Committee shall in this case nominate a candidate for President to stand for election at the next Annual Meeting.

    d. Secretary-Elect. This office shall remain vacant until the next Annual Meeting at which time a Secretary-Elect would be elected as provided for in Article III, Section 6.. The Nominating Committee shall nominate a candidate for Secretary to stand for election at the next Annual Meeting.

    e. Treasurer-Elect. This office shall remain vacant until the next Annual Meeting at which time a Treasurer-Elect would be elected as provided for in Article III, Section 7. The Nominating Committee shall nominate a candidate for Treasurer to stand for election at the next Annual Meeting.

    f. Secretary. If there is a Secretary-Elect, the Secretary-Elect shall succeed to the office of Secretary and shall serve the remainder of the term and through the succeeding term. If there is no Secretary-Elect, the Executive Committee shall appoint a Secretary to serve until the next Annual Meeting. The Nominating Committee shall, in this case, nominate a candidate for Secretary to stand for election at the next An-

nual Meeting, this election to be for a full term of three years.

g. Treasurer. If there is a Treasurer-Elect, the Treasurer-Elect shall succeed to the office of Treasurer and shall serve the remainder of the term and through the succeeding term. If there is no Treasurer-Elect, the Executive Committee shall appoint a Treasurer to serve until the next Annual Meeting. The Nominating Committee shall, in this case, nominate a candidate for Treasurer to stand for election at the next Annual Meeting, this election to be for a full term of three years.

h. Chair of the Program Committee. The member of the Program Committee next in line to become Chair shall assume that office and shall hold it to the end of the term to which the member was elected.

i. Other Members of the Program Committee. The Nominating Committee shall nominate candidates for membership on the Program Committee to fill the vacancies for the remainder of the respective terms. Members elected to fill vacancies shall succeed to the Chair in the third year of the regular term, the unexpired portion of which they are completing, except in the case in which the office of Chair of the Program Committee is filled under the provisions of Article III, Section 10, h.

13. The President shall be the chief executive officer of The Section, presiding at all business meetings of The Section and of the Executive Committee, shall appoint all committees except those whose memberships are provided for in these By-Laws (unless otherwise directed by The Section), and shall be an ex-officio member of all committees.

14. The Secretary shall perform the following duties: 1) keep all the minutes of meetings of The Section, 2) circulate preliminary announcements of Annual Meetings and announcements

of all other meetings of The Section, 3) prepare and submit the annual report of the section activity to the National MAA, and 4) perform any other duties which may be assigned by the Executive Committee.

15. The Treasurer shall perform the following duties: 1) keep all the financial records of The Section, 2) receive all monies paid to The Section for membership dues and fees and for all other purposes and shall deposit such monies in a federally insured account of The Section, 3) pay all bills of The Section out of The Section funds. 4) prepare and submit the annual report of the section's financial activity to the National MAA, and 5) perform any other duties which may be assigned by the Executive Committee.
16. The Past-President shall be a member of the Executive Committee and shall perform such other duties as may be delegated or assigned by the President.
17. The President-Elect shall be a member of the Executive Committee and shall prepare to assume the duties and responsibilities of the Office of the President.
18. The Secretary-Elect shall be a member of the Executive Committee and shall prepare to assume the duties and responsibilities of the office of Secretary.
19. The Treasurer-Elect shall be a member of the Executive Committee and shall prepare to assume the duties and responsibilities of the office of Treasurer.
20. The President of The Section shall appoint, for terms of appropriate length, members of The Section to such offices as are necessary for the execution of the Section's business, e.g., newsletter editor, public information officer, and the representative to the Ohio Mathematics Association for Two-Year Colleges.

Appendix E

ARTICLE IV

Committees

1. The Executive Committee shall consist of the officers of The Section, the Chairs of the Program Committee, the Committee on Section Activities, the Committee on Curriculum, the Committee on Teacher Education and Licensure and the Committee on Student Members. The President of The Section shall be the Chair of the Executive Committee.

2. Duties of the Executive Committee:

   a. The Executive Committee shall transact the business of The Section between the Annual Meetings of The Section and shall report its actions to The Section at the next Annual Meeting. In case of a special meeting of The Section, the Executive Committee shall submit an interim report of its actions since the last meeting of The Section. Interim reports will be included in the report submitted at the next Annual Meeting.

   b. The Executive Committee shall formulate plans and policies for the consideration of The Section in meeting assembled. In making such formulations, it shall take into account any and all suggestions which it may receive from members of The Section. In addition, the Executive Committee shall fix the dues and fees as described in Article VI. In particular, it shall formulate and present at the Annual Meeting a budget to finance the operations of The Section for the year following the Annual Meeting.

   c. With the aid of the Program Committee, the Executive Committee shall have the responsibility of organizing the Annual Meeting and all other meetings. At its discretion, the Executive Committee may delegate this responsibility or any part of it to sub-committees which the President may appoint from the membership of The Section.

3. The Program Committee shall consist of three members of The Mathematical Association of America, who are also members of The Section, one elected each year by the Section at its Annual Meeting to serve for a term of three years and to act as Chair of the Program Committee during the third year of the term. The newly elected member of the Program Committee shall take office upon the adjournment of the Annual Meeting at which the member is elected.

4. The Program Committee shall arrange, in cooperation with the Executive Committee, suitable programs for presentation at the Annual Meetings and other meetings of The Section.

5. The Nominating Committee shall consist of the three most recent past presidents of The Section who are members of The Section and are available for membership on the Nominating Committee, and who are not the Past-President. The most recent past president on the Nominating Committee shall be Chair of the Nominating Committee.

6. The Nominating Committee shall nominate at least one candidate for the office of President-Elect each year, at least one candidate for membership on the Program Committee each year, and at least one candidate for the office of Secretary-Elect one year prior to the expiration of the term of office of the Secretary (The Secretary may be nominated as Secretary-Elect.), and at least one candidate for the office of Treasurer-Elect one year prior to the expiration of the term of office of the Treasurer. (The Treasurer may be nominated as Treasurer-Elect.) It shall also nominate candidates to fill vacancies in accordance with the provisions of Article III, Section 12. The report of the Nominating Committee shall be included in the written notification sent to members of the Annual Meeting at which the elections will be held. (Cf. Article V, section 5.)

7. The officers of The Section shall nominate at least two candidates for the office of Section Governor during the final year of the term of the incumbent Section Governor.

8. The Committee on Section Activities (CONSACT) shall consist of a chair and various members of The Section appointed by the President of The Section for staggered three-year terms. Its duties shall consist of such activities of The Section as are charged to it by the President of The Section.

9. The Committee on Curriculum (CONCUR) shall consist of a chair and various members of The Section appointed by the President of The Section for staggered three-year terms. Its duties shall consist of ongoing studies of undergraduate mathematics curriculum and such other related matters as may be charged to it by the President of The Section.

10. The Committee on Teacher Education and Licensure (CONTEAL) shall consist of a chair and various members of The Section appointed by the President of The Section for staggered three-year terms. Its duties shall consist of continual study of teacher training and licensure in the state, reporting same to The Section, preparing recommendations for appropriate state authorities, and such other related matters as are charged to it by the President of The Section.

11. The Committee on Student Members (CONSTUM) shall consist of a chair and various members of The Section appointed by the President of The Section for staggered three-year terms. Its duties shall consist of directing and coordinating all activities of The Section which are specifically for student members of The Section, e.g., enrolling students as members of The Association, organizing and supporting student chapters, and organizing student paper sessions as meetings of The Section. The chair of the committee will serve as the Section Coordinator for Student Chapters.

Appendix E

ARTICLE V

Meetings

1. The Section shall hold one regular meeting (called the Annual Meeting) each year.

2. The time and place of the Annual Meeting shall be determined by the Executive Committee.

3. The programs for all meetings shall be arranged by the Program Committee.

4. The Executive Committee shall call such special meetings as it deems necessary or expedient. It shall fix the time and place of such special meetings.

5. The members of The Section shall be notified in writing of any regular or special meeting at least ten days in advance of the meeting. If there is to be an election held, the report of the Nominating Committee will be included in the written announcement of the meeting.

6. A quorum shall consist of those members of The Section present at a properly called meeting.

ARTICLE VI

Finances and Use of Assets

1. A registration fee in an amount fixed by the Executive Committee will be paid by each person in attendance at section meetings. Students shall be exempt from paying this fee.

2. The Executive Committee is authorized to establish voluntary annual dues for members to be paid to the Treasurer.

3. The Treasurer is authorized to accept financial contributions from individuals and organizations. Such contributions must be used in accordance with Article I, Section 2, of these By-Laws. Any individual or organization providing such support shall be designated as a Contributor to the Ohio Section.

4. A Life Payment of Fees option shall be available to any member of The Section who satisfies a minimum age requirement set by the Executive Committee and completes payment of a single sum in an amount fixed by the Executive Committee. Such an individual shall be designated as a Life Member of the Ohio Section and shall be exempt from paying dues and registration fees.

5. The assets of The Section shall be used exclusively to further the purposes of The Section, and in the event of the dissolution of The Section, the remaining assets shall be returned to the national organization to be used for a purpose consistent with the purpose of the national organization.

ARTICLE VII

Amendments

1. These By-Laws may be amended, subject to the approval of the Board of Governors of The Mathematical Association of America, in the following manner:

    a. Amendments may be proposed by the Executive Committee or by the written endorsement of at least ten members of The Section.

b. Proposed amendments will be distributed to the membership of The Section not less than ten days prior to the next meeting of The Section, and opportunity for discussion of the proposed amendment will be provided for in the program of the meeting.

c. The proposed amendment with any modifications adopted by a majority of those present and voting at the meeting referred to in b above shall be circulated together with a ballot for a mail vote in the next regular mailing or in an earlier mailing if so directed at the meeting by the Executive Committee. Instructions will be included to inform the membership of the deadline for reception of ballots, such deadline to be not less than one month from the date of mailing.

d. The proposed amendment will become an amendment approved by members of The Section provided at least 55 percent of the ballots returned by the deadline specified so affirm.

e. When an amendment has been approved by the members of The Section, it must be submitted to the Committee on Sections for its recommendation to The Board of Governors.

2. A complete revision of this set of By-Laws will be subject to the same procedure as that for amending this set.

Appendix E

This version of the By-Laws of the Ohio Section of the Mathematical Association of America was approved on 4 August 2015 by the National Board of Governors at its summer meeting in Washington DC. This revision was written by the By-Laws Subcommittee: Barbara D'Ambrosio (chair), Wiebke Diestelkamp, Daniel Otero, William Higgins, and David Kullman.

Bylaws of the Ohio Section of the Mathematical Association of America

ARTICLE I

Name and Purpose

1. The name of this section, henceforth referred to as "the Section," shall be the Ohio Section of the Mathematical Association of America (MAA).

2. The purposes of the Section shall be to advance the mission of the MAA on a regional level (namely within the territory defined in Article II below); to offer guidance to the MAA as it forms and fulfills its mission; to provide professional development and networking activities for Section members and mathematics students in geographically accessible locations; and to promote discussion and action on issues affecting mathematics teaching, learning, and research in the region.

ARTICLE II

Membership

The membership of the Ohio Section shall be members of the Mathematical Association of America whose MAA mailing addresses are in the State of Ohio or the County of Cabell in the State of West Virginia, ZIP codes 43001-45999 or 25504-25799. Exceptions may be made by the MAA membership department upon request of the affected member.

Appendix E

ARTICLE III

Officers

1. The officers of the Ohio Section shall be a President, a Secretary, a Treasurer, a chair of the Program Committee, and, when these positions are filled, a President-Elect, a Past-President, a Secretary-Elect, and a Treasurer-Elect.

2. The Executive Committee of the Ohio Section shall consist of the officers of the Section, the section Governor, the Coordinator of Ohio NExT, and the chairs of the Committees on Curriculum, Section Activities, Student Members, and Teacher Education and Licensure. The President shall be the chair of the Executive Committee.

3. Each section officer must be a member of the Mathematical Association of America and of the Section.

4. Elections shall occur at the business meeting held in conjunction with the Annual Meeting of the Section. The list of candidates nominated by the Nominating Committee may be augmented by nominations made and seconded from the floor. All elections shall be by simple majority vote of those members of the Section present and voting. In the case of a tie, the winner of an election shall be determined by lot. Terms of newly elected officers shall begin at the conclusion of the Annual Meeting.

    a. The term of the section Governor and the election procedure for section Governor shall be determined by the MAA. The officers of the Section and the incumbent Governor shall nominate at least two candidates for the office of section Governor during the final year of the term of the incumbent Governor.

    b. A President-Elect shall be elected at the Annual Meeting one year prior to the completion of the term of

the current President. The term of the office of President-Elect shall be one year. At the end of this term, the President-Elect shall become President. Except as provided in Article III, Section 8, no one who has served as President for a term of at least one year shall be eligible for election or appointment as President-Elect until at least three years have elapsed since the end of his/her most recent term as President.

c. The term of the office of President shall be two years, beginning with the end of the term as President-Elect.

d. The term of Past President shall be one year, beginning with the end of the term as President.

e. A Secretary-Elect shall be elected at the Annual Meeting one year prior to the completion of the term of Secretary. The term of the office of Secretary-Elect shall be one year. At the end of this term, the Secretary-Elect shall become Secretary. Except as provided in Article III, Section 8, no one who has served as Secretary for a term of at least four years shall be eligible for election or appointment as Secretary-Elect until at least two years have elapsed since the end of his/her most recent term as Secretary.

f. The term of office of the Secretary shall be three years, beginning with the end of the term as Secretary-Elect.

g. A Treasurer-Elect shall be elected at the Annual Meeting one year prior to the completion of the term of Treasurer. The term of the office of Treasurer-Elect shall be one year. At the end of this term, the Treasurer-Elect shall become Treasurer. Except as provided in Article III, Section 8, no one who has served as Treasurer for a term of at least four years shall be eligible for election or appointment as Treasurer-Elect until at least

two years have elapsed since the end of his/her most recent term as Treasurer.

h. The term of office of the Treasurer shall be three years, beginning with the end of the term as Treasurer-Elect.

i. A member of the Program Committee shall be elected at each Annual Meeting. The term of service on the Program Committee is three years, beginning at the conclusion of the Annual Meeting. Except as provided in Article III, Section 8, no one who has served as chair of the Program Committee shall be eligible for election or appointment to the Program Committee until at least three years have elapsed since the end of his/her most recent term as chair of the Program Committee.

j. No person may serve simultaneously in two section officer positions, or as section Governor and a section officer, with the exceptions that the Secretary may also be the Secretary-Elect, and the Treasurer may also be Treasurer-Elect.

k. To effect a staggering of the offices of Secretary and Treasurer, the Executive Committee may appoint an Interim Secretary or an Interim Treasurer as necessary, for a term of not more than one year.

5. Nominations for section officers shall be made by the Nominating Committee, as described in Article VI, as well as by Section members during business meetings of the Section.

6. The duties of the section officers are as follows.

a. The President shall be the chief executive officer of the Section, presiding at all business meetings of the Section and at all meetings of the Executive Committee. The President shall appoint members to all committees except those whose memberships are provided for in

these bylaws, and shall be an ex-officio member of all committees. The President shall appoint, for terms of appropriate length, members of the Section to such offices as are necessary for the execution of the Section's business, e.g., newsletter editor and liaison coordinator.

b. The President-Elect shall prepare to assume the duties and responsibilities of the office of President, shall chair the Teaching Award Committee when the position of Past President is vacant, and shall be a member of the Executive Committee. The President-Elect shall appoint a member of the Nominating Committee.

c. The Past President shall chair the Teaching Award Committee, appoint a member of the Nominating Committee, be a member of the Executive Committee, and perform other duties as may be delegated or assigned by the President.

d. The Secretary shall keep minutes of all business meetings of the Section and the Executive Committee; prepare and submit reports of section activities as required by the MAA; maintain records of the Section; disseminate lists of duties and responsibilities to new officers and committee members; serve on the Executive Committee; and serve as a nonvoting member of the Nominating and Teaching Award Committees.

e. The Secretary-Elect shall prepare to assume the duties of the office of Secretary, shall serve on the Executive Committee, and shall serve as a nonvoting member of the Nominating and Teaching Award Committees.

f. The Treasurer shall keep all of the financial records of the Section; receive all monies paid to the Section; deposit such monies in a federally insured account of the Section; pay all bills of the Section out of the Section's

funds; prepare and submit reports of the Section's financial activity as required by the MAA; and serve on the Executive Committee.

g. The Treasurer-Elect shall prepare to assume the duties of the office of Treasurer and shall serve on the Executive Committee.

h. The chair of the Program Committee shall, along with other members of that committee, be responsible for planning each program meeting of the Section. The chair of the Program Committee shall also serve on the Executive Committee.

i. The section Governor shall serve on the Board of Governors of the MAA and on the Executive Committee of the Section.

7. The Executive Committee shall conduct the affairs of the Section between meetings of the section membership, and shall report its actions to the Section via the section newsletter or at the next Annual Meeting. The Executive Committee shall formulate plans and policies for the consideration of the Section. In making such formulations, it shall take into account any and all suggestions that it may receive from members of the Section. In addition, the Executive Committee shall fix dues and fees as described in Article V. Although other members of the Section may attend Executive Committee meetings, only members of the Executive Committee may make and vote on motions at those meetings. A quorum for meetings of the Executive Committee shall consist of six members of the Executive Committee.

8. If a vacancy in an elected position should occur before the end of the elected term, the procedure for filling the vacant position shall be as follows.

   a. Section Governor: The MAA Board of Governors shall elect a replacement to complete the remainder of the term.

   b. President-Elect: The Executive Committee shall appoint an additional member to the Executive Committee, not as an officer, to serve the remainder of the term and fulfill all responsibilities of the office of President-Elect. The Nominating Committee shall nominate a candidate for President to stand for election at the next Annual Meeting.

   c. President:

      1. The President-Elect shall succeed to the office of President and shall serve the remainder of the term and through the succeeding term of President.

      2. If the position of President-Elect is vacant, the Past President shall serve until the next Annual Meeting.

         The Nominating Committee shall nominate a candidate for President to stand for election at the next Annual Meeting, this election to be for a full term of two years.

   d. Past President: The Executive Committee shall appoint an additional member to the Executive Committee, not as an officer, to serve the remainder of the term and fulfill all responsibilities of the office of Past President.

   e. Secretary-Elect: This office shall remain vacant for the remainder of the term. The Nominating Committee shall nominate a candidate for Secretary to stand for election at the next Annual Meeting.

f. Secretary: The Secretary-Elect shall succeed to the office of Secretary and shall serve the remainder of the term and through the succeeding term of Secretary. If the position of Secretary-Elect is vacant, the Executive Committee shall appoint a Secretary to serve until the next Annual Meeting. In this case, the Nominating Committee shall nominate a candidate for Secretary to stand for election at the next Annual Meeting, this election to be for a full term of three years.

g. Treasurer-Elect: This office shall remain vacant for the remainder of the term. The Nominating Committee shall nominate a candidate for Treasurer to stand for election at the next Annual Meeting.

h. Treasurer: The Treasurer-Elect shall succeed to the office of Treasurer and shall serve the remainder of the term and through the succeeding term of Treasurer. If the position of Treasurer-Elect is vacant, the Executive Committee shall appoint a Treasurer to serve until the next Annual Meeting. In this case, the Nominating Committee shall nominate a candidate for Treasurer to stand for election at the next Annual Meeting, this election to be for a full term of three years.

i. Chair of the Program Committee: The member of the Program Committee next in line to become chair shall assume that position and shall hold it to the end of the term to which the member was elected.

j. Other members of the Program Committee: The Executive Committee shall determine how to fill the vacancy, either by shortening or extending the term of another member of the committee, or by charging the Nominating Committee to nominate a candidate to complete the vacant term to stand for election at the next Annual Meeting.

k. In the case that the procedures listed above cannot be followed, the Executive Committee shall make such appointments as necessary to continue the business of the Section until the elections at the next Annual Meeting.

ARTICLE IV

Meetings

1. The Section shall hold at least one program meeting and one business meeting each year. One program meeting each year shall be designated as the Annual Meeting, and a business meeting shall be held in conjunction with this Annual Meeting.

2. The time and place of each program meeting shall be determined by the Executive Committee.

3. The Executive Committee shall call such special business meetings as it deems necessary or when requested by a petition of at least 30 members of the Section. It shall fix the time and place of such special meetings.

4. The Program Committee shall arrange, in cooperation with the Executive Committee, the program for each program meeting of the Section.

5. A Local Arrangements Coordinator shall be appointed by the President to oversee the logistical arrangements for each program meeting.

6. The annual business meeting shall be planned by the Executive Committee.

7. A quorum for a business meeting of the Section shall be 20 members of the Section.

8. Each member of the Section shall be notified at least 20 days in advance of any regular or special meeting of the Section. If

there is to be an election held, the report of the Nominating Committee shall be included in the announcement of the meeting.

ARTICLE V

Fees and Use of Assets

1. A registration fee in amounts fixed by the Executive Committee shall be paid by each person in attendance at Section meetings.

2. The Executive Committee is authorized to establish voluntary annual dues for members.

3. The Treasurer is authorized to accept financial contributions from individuals and organizations. Such contributions must be used in accordance with Article I, Section 2, of these bylaws. Any individual or organization providing such support shall be designated as a Contributor to the Ohio Section.

4. The assets of the Section shall be used exclusively to further the purposes of the Section and, in the event of the dissolution of the Section; the remaining assets shall be turned over to the MAA to be used for purposes consistent with the bylaws of that organization.

ARTICLE VI

Committees

1. The Executive Committee shall function as described in Article III.

2. The Nominating Committee shall consist of the President and two appointed members who are not on the Executive Committee. Additionally, the Secretary and Secretary-Elect (when this position is filled) shall be nonvoting members of the Nominating Committee.

a. The term of the appointed members shall be two years, with terms to be staggered. Appointments to the Nominating Committee shall be made by the President-Elect or the Past President, depending on which position is filled in a given year.

b. The appointed member in his/her second term of service shall be the chair of the Nominating Committee.

c. In consultation with the Executive Committee, the Nominating Committee shall nominate at least one candidate for each position for which an election is to be held at the next Annual Meeting.

d. The Nominating Committee shall provide a written report on the slate of nominees to be included in the section newsletter announcing the Annual Meeting.

3. The Program Committee shall consist of three members of the Section, one elected each year as described in Article III, Section 4.

   a. The chair of the Program Committee shall be the member in his/her third year on the committee.

   b. The chair of the Program Committee shall be an officer of the Section and a member of the Executive Committee.

   c. The Program Committee shall arrange, in cooperation with the Executive Committee, suitable programs for presentation at the Annual Meeting and other meetings of the Section.

4. The Teaching Award Committee shall consist of the Past President or, if this office is vacant, the President-Elect, and two appointed members who are not on the Executive Committee. Additionally, the Secretary and Secretary-Elect (when

this position is filled) shall be nonvoting members of the Teaching Award Committee.

a. The chair of the Committee shall be the Past President or, if this office is vacant, the President-Elect.

b. The term of the appointed members shall be two years, with terms to be staggered. Appointments to this committee shall be made by the President.

c. The duties of the Teaching Award Committee shall be to solicit and receive nominations for the Ohio Section

Award for Distinguished College or University Teaching of Mathematics; to select a recipient of this award each year, or to determine that no award should be given; and to select the Section's nominee for the Deborah and Franklin Tepper Haimo Award each year. Recipients of the Ohio Section Award for Distinguished College or University Teaching of Mathematics shall be presented with the award at the Annual Meeting in the year that they receive it.

d. In addition, the Teaching Award Committee may also solicit nominations for other MAA teaching awards, such as the Henry L. Alder Award.

5. The Ohio NExT (New Experiences in Teaching) Organizing Committee shall consist of members of the Section appointed by the President for staggered three-year terms. The President shall designate one member as Coordinator of Ohio NExT, with the term as Coordinator being one year. The Coordinator shall serve on the Executive Committee and shall not be an officer of the Section. The duties of the Ohio NExT Organizing Committee shall consist of organizing and overseeing activities of the Section that are specifically to serve faculty members who are new to the Section, and other such related matters as are charged to it by the President.

6. The Committee on Section Activities (CONSACT) shall consist of members of the Section appointed by the President for staggered three-year terms. The President shall designate one member as chair of the committee, with the term as chair being one year. The chair shall serve on the Executive Committee and shall not be an officer of the Section. The duties of CONSACT shall consist of such activities of the Section, aside from program meetings, as are charged to it by the President.

7. The Committee on Curriculum (CONCUR) shall consist of members of the Section appointed by the President for staggered three-year terms. The President shall designate one member as chair of the committee, with the term as chair being one year. The chair shall serve on the Executive Committee and shall not be an officer of the Section. The duties of CONCUR shall consist of ongoing studies of undergraduate mathematics curriculum and such other related matters as may be charged to it by the President.

8. The Committee on Teacher Education and Licensure (CONTEAL) shall consist of members of the Section appointed by the President for staggered three-year terms. The President shall designate one member as chair of the committee, with the term as chair being one year. The chair shall serve on the Executive Committee and shall not be an officer of the Section. The duties of CONTEAL shall consist of continual study of teacher education and licensure in the state of Ohio, reporting same to the Section, preparing recommendations for appropriate state authorities, and such other related matters as are charged to it by the President.

9. The Committee on Student Members (CONSTUM) shall consist of members of the Section appointed by the President for staggered three-year terms. The President shall designate one member as chair of the committee, with the term as chair

being one year. The chair shall serve on the Executive Committee and shall not be an officer of the Section. The duties of CONSTUM shall consist of directing and coordinating all activities of the Section that specifically serve student members of the Section and students attending Section meetings, and other such related matters as are charged to it by the President.

10. The Executive Committee may create and subsequently disband ad hoc committees for specific purposes. The Executive Committee shall provide a charge to such committees and shall determine how committee members and chairs shall be selected.

ARTICLE VII

Amendments to Bylaws

1. Amendments to the bylaws may be proposed by the Executive Committee or by the written endorsement of at least ten members of the Section.

    a. Any proposed amendment shall be distributed to the membership of the Section at least 20 days prior to the meeting of the Section at which voting on the proposed amendment is to occur, and opportunity for discussion of the proposed amendment shall be included in the program for that meeting.

    b. Upon approval of the majority of those present and voting at the Section meeting in (a) above, the text of the proposed amendment together with instructions for voting on the amendment shall be sent to all Section members.

    c. The proposed amendment shall become an amendment to the bylaws provided at least 55 percent of the ballots

returned by the deadline so affirm and it is subsequently approved by the Board of Governors of the MAA.

2. A complete revision of these bylaws shall be subject to all of the same procedures required for other amendments to these bylaws.

Appendix F

Invited Addresses
at
Annual and Fall Meetings

F Fall Meeting
* Retiring Chairman/President
# Teaching Award Recipient

1916	R. B. Allen* Kenyon C.	"Hypercomplex Number Systems"
1917	T. M. Focke* Case School Appl. Sci.	"A Geometrical Presentation of Taylor's Series"
1918	Forbes B. Wiley* Denison U.	"An Experiment with Co-ordinates"
1919	C. N. Moore* U. of Cincinnati	"The Role of Mathematics in World Progress"
1920	R. L. Borger* Ohio U.	"Some Geometric Methods for Curve Tracing"
1921	Samuel E. Rasor* Ohio State U.	"Functions and Functionals"
1922	M. Gugle Columbus Pub Sch.	"The High School-College Problem"
	D. L. Holl Ohio State U.	"The Mathematical Justification of a Fundamental Postulate of the Theory of Relativity"
	B. F. Yanney* C. of Wooster	"Some Aspects of the Mathematical Situation in Ohio"
1923	H. L. Coar* Marietta C.	"Freshman Mathematics in the Liberal Arts College"
1924	W. E. Anderson* Miami U.	"Some Methods of Creating and Maintaining Interest in Mathematics"
	E. E. Lincoln Western Electric Co.	"Business Statistics"

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1925	Harris Hancock* U. of Cincinnati	"A Notion Which Includes That of Divisibility"
1926	R. D. Bohannan* Ohio State U.	"Alphabetic Symbolism Applied to Some Operations on Power Series"
1927	H. W. Kuhn* Ohio State U.	"Galois Fields and Permutation Groups"
	H. W. Sibert U. of Cincinnati	"A New Type of Singular Solution"
1928	C. H. Yeaton* Oberlin C.	"The Construction of the Tangent to Certain Curves"
1929	E. H. Clarke* Hiram C.	"Problem Solving and Mathematical Progress"
	A. F. Petersilge Shaker Heights Pub. Sch.	"Elementary and Secondary Mathematics Essential for Success in College Mathematics"
1930	G. Y. Rainich U. of Michigan	"Linear Vector Functions, their Applications and Generalizations"
	S. A. Rowland* Ohio Wesleyan U.	"The Solutions of a System of Linear Homogeneous Differential Equations with Laurent Coefficients"
1931	W. G. Simon* Western Reserve U.	"Some Doubts About the Content of Elementary Courses in Calculus"
1932	W. D. Cairns* Oberlin C.	"An Undergraduate Course Leading to the Study of Wave Mechanics"
	E. S. Loomis Baldwin-Wallace C.	"A Trihedron and its Genesis"
	C. L. Weaver Kent State U.	"A Proof of the Rule for Evaluating an Indeterminate Form"
1933	H. T. Davis Indiana U.	"The Predictable Element in Economic Series"
	O. L. Distheimer* Baldwin-Wallace C.	"Applied Mathematics in a Liberal Arts College"

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1934	I. A. Barnett* U. of Cincinnati	"Some Suggestions for the Improvement of the Teaching of Mathematics"
	K. P. Williams Indiana U.	"The Problem of Professional Training"
1935	H. Blumberg* Ohio State U.	"On the Change of Form"
	E. J. Moulton Northwestern U.	"The Training and Utilization of Advanced Students of Mathematics"
	B. O. Skinner Ohio Dept. of Ed.	"On the Teaching of Mathematics in the Secondary Schools"
	G. Szegö Washington U.	"Some Recent Applications of Sturm's Oscillation Method"
1936	J. Pierce* Heidelberg C.	"Solutions of Systems of Linear Differential Equations in the Vicinity of Singular Points"
1937	J. H. Weaver* Ohio State U.	"A Generalization of the Circles of Apollonius and Some Resulting Properties"
1938	O. E. Brown* Case School Appl. Sci.	"The Application of Determinants and Projective Transformations to Nomography"
	K. Menger Notre Dame U.	"The Foundations of Projective and Affine Geometry"
1939	G. A. Bliss U. of Chicago	"The Hamilton-Jacobi Theory in the Calculus of Variations and its Sources"
	C. O. Williamson* C. of Wooster	"Why I Teach Mathematics"
1940	E. Artin Indiana U.	"Introduction of Coordinates in Affine Geometry"
	W. Dancer* U. of Toledo	"Fundamental Concepts in Undergraduate Mathematics"

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1941	G. A. Miller U. of Illinois	"Mathematical Statements in the History of Mathematics"
	J. R. Musselman* Western Reserve U.	"Aerial Photogrammetry"
1942	Louis Brand* U. of Cincinnati	"Non-Metric Differential Invariants"
	Lester R. Ford Illinois Inst. of Tech.	"A Million Ways to Solve Equations"
1943	C. T. Bumer* Kenyon C.	"The Pre-Meterological Training Program: an Experiment and a Challenge"
1944	Tibor Radó* Ohio State U.	"On Triangulation"
1945	*No meeting*	
1946	J. B. Brandeberry* U. of Toledo	"Imaginary Branches of Real Curves"
	F. D. Murnaghan Johns Hopkins U.	"The Teaching of College Mathematics"
1947	Tibor Radó* Ohio State U.	"Intuition in Mathematics"
	S. A. Rowland* Ohio Wesleyan U.	"The Association's Interest in Pre-College Training"
1948	M. Hall, Jr. Ohio State U.	"Prospects in Projective Geometry"
	H. S. Pollard* Miami U.	"The Mathematics Major"
1949	R. H. Marquis* Ohio U.	"Some Current Questions in the Administration of College Mathematics"
	E. J. Mickle Ohio State U.	"Some Questions in Metric Geometry"

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1950	E. Baiade U. of Pisa	"Some Modern Italian Mathematicians"
	E. P. Vance * Oberlin C.	"A Different Approach to the Study of Circular Functions"
1951	A. Schild Carnegie Inst. Tech.	"Interactions of Modern Mathematics and Modern Physics"
	V. C. Stechschulte * Xavier U.	"Some Mathematics in Seismology"
1952	L. I. Davis U.S.A.F.	"Some Mathematical Problems Encountered in Research and Development Work"
	R. F. Rinehart* Case Inst. Tech.	"Functions of Matrices"
1953	Hanry B. Mann Ohio State U.	"Combinatorial Problems"
	Earl F. Mickle * Ohio State U.	"Mappings and Measure"
1954	P. R. Rider * Wright-Patterson A.F.B.	"Statistical Distributions"
	G. deB. Robinson U. of Toronto	"The Place of Algebra and Geometry in the Undergraduate Curriculum"
1955	R. R. Stoll Oberlin C.	"Characteristics of Determinant Functions"
	W. R. Transue * Kenyon C.	"Approaches to Measure and Integration"
1956	H. E. Grime Cleveland Pub. Sch.	"Some Current Problems of Teachers of Mathematics in Elementary and Secondary Schools"
	Ernst Snapper Miami U.	"The Geometric Method in Modern Algebra"
	R. R. Stoll * Oberlin C.	"Sperner's Lemma"

Appendix F

1957	A. Church Princeton U.	"Synthesis of Electric Circuits as a Problem in Mathematical Logic"
	Paul V. Reichelderfer * Ohio State U.	"On the Geometrical Meaning of a Derivative"
1958	N. Lazar Ohio State U.	"Critique on the Preparation of Elementary and Secondary School Teachers of Mathematics"
	E. R. Ranucci Newark State C.	"Report from the Commission on Mathematics of the College Entrance Board"
	J. Laurie Snell Dartmouth C.	"The New Dartmouth Mathematics Curriculum"
1959	G. Blanch Wright-Patterson A.F.B.	"Review of Basic Concepts in Approximation Theory"
	L. E. Bush* Kent State U.	"Some Problems in Teacher Training and Retraining"
	R. J. Nelson Case Inst. Tech.	"The Impact of the Electronic Computer on the Mathematics Curriculum"
	D. Ransom Whitney Ohio State U.	"The Role of a Statistics Laboratory on a College Campus"
1960	S. N. Gupta Wayne State U.	"A Procedure for Optimizing a Function Involving Uncertain Parameters"
	W. R. VanVoorhis * Fenn C.	"The Impact of Modern Mathematics Upon College Teachers"
1961	Wade Ellis * Oberlin C.	"On Boolean Algebras"
	Charles Saltzer U. of Cincinnati	"Computers and Automata"
1962	*No invited addresses*	

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1963	W. G. Johnson * Hiram C.	"Topological Representations of Certain Boolean Algebras"
	Arnold E. Ross U. of Notre Dame	"An Intractable Minimum Problem in Diophantine Approximation"
1964	R. H. Bing U. of Wisconsin	"Homogeneity"
	C. E. Capel * Miami U.	"Concrescence, Concinnity, and Concatenation"
1965	Andrew Sterrett* Denison U.	"The Negative Binomial Distribution for Testing Certain Hypotheses"
	R. L. Wilder U. of Michigan	"The Axiomatic Method"
1966	W. T. Fishback * Ohio U.	"The High Costs of Trying"
	M. Henriksen Case Inst. Tech.	"Matrices Over Rings in Which Finitely Generate Ideals are Principal"
1967	H. David Lipsich * U. of Cincinnati	"Some New Directions for the Ohio Section"
	J. Mycielski Case Inst. Tech.	"Topics in Mathematical Logic"
F67	Richard D. Anderson Louisiana State U.	"A Brief Survey of CUPM Activities"
	Donald W. Bushaw Washington State U.	"Preparation for Graduate Study in Mathematics"
	W. Prenowitz Brooklyn C.	"Preparation for Graduate Study in Geometry"
	G. Bailey Price U. of Kansas	"A General Curriculum in Mathematics for Colleges"
	A. Rosenberg Cornell U.	"The CUPM Qualification Report"
	G. L. Weiss Washington U.	"Preparation for Graduate Study in Analysis"

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	Hans J. Zassenhaus Ohio State U.	"Preparation for Graduate Study in Algebra"
1968	E. Engeler U. of Minnesota	"Language as a Part of Mathematics: Part 1, Model Theory; Part 2, Symbol Manipulation"
	Daniel T. Finkbeiner * Kenyon C.	"The Mergences of Mathematics"
1969	Ralph P. Boas Northwestern U.	"COSRIMS: Findings and Recommendations of the Graduate Panel"
	Peter J. Hilton Cornell U.	"COSRIMS: Problems of Implementation of Recommendations"
	Henry O. Pollack Bell Telephone Labs	"COSRIMS: Findings and Recommendations of the Undergraduate Panel"
	Arnold E. Ross * Ohio State U.	"Graduate Training in Mathematics: Some Dilemmas of a Practicing Educator"
1970	A. F. Bartholomay Med. C. of Ohio-Toledo	"The Role of Mathematics in Biology and Medicine"
	James L. Smith * Muskingum C.	"Swingin' 60's - 70's"
	W. Sternberg U. of Minnesota	I: "Calculus and the Computer: A Very Short Course in Computing; II: The Role of the Computer in the CRICISAM Calculus Course"
1971	Victor Klee U. of Washington	"Convex Sets in Geometry and Analysis"
	Ben Noble Oberlin C.	"Applications of Undergraduate Mathematics"
	B. J. Yozwiak* Youngstown State U.	"What You Always Wanted to Know about Summability, but Were Not Interested Enough to Ask"

Appendix F

F71	J. Simons SUNY, Stonybrook	"Current and Future State of the Art (of Differential Geometry)"
	J. A. Thorpe SUNY, Stonybrook	"History of Differential Geometry"
	A. T. Vasquez CUNY	"Integration of Differential Geometry into the Undergraduate Curriculum"
1972	Elwood Bohn * Miami U.	"Convex Functions, Some Generalizations and Applications"
	Samuel Goldberg Oberlin C.	"Probability Models in the Social Sciences"
	B. E. Rhoades Indiana U.	"Mathematics Programs at Two-Year Colleges - something for Everyone"
F72	Harold D. Brown Ohio State U.	"Applications of Graph Theory to Classification of Organic Molecules"
	M. Gerstenhaber U. of Pennsylvania	"The Delaware River: a Case History in the Use and Abuse of Models"
	Robert J. Herbold Proctor & Gamble Co.	"Mathematics in Managerial Science"
	Murray S. Klamkin Ford Motor Co.	"Mathematics in Industry"
1973	Kenneth Cummins Kent State U.	"A Transformational Approach to Geometry"
	Harley Flanders Editor, A.M.M.	"Some Mathematical Aspects of Electrical Circuit Theory"
	Will Hahn * Wittenberg U.	"The Retread Problem"
	Andrew Sterrett, Jr. Denison U.	"Recent Activities of CUPM"

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F73	Ralph P. Boas Pres., MAA	"Consequences of Continuity"
	E. L. Glazer Case Western Reserve U.	"Some Possible Effects of the Computing Art on the Teaching of Mathematics"
	W. T. Morris Ohio State U.	"Probability and Real Decision Making"
1974	M. D. Plummer Vanderbilt U.	"Non-trivial Applications of Graph Theory"
	Henry O. Pollak Bell Telephone Labs	"A Loop Switching Problem"
	S. E. Payne Miami U.	"On Finite Moore Graphs"
	K. D. Ray-Chaudhuri Ohio State U.	"Graphs and Geometries"
F74	G. Noether U. of Cincinnati	"How to Make Statistics Interesting"
	J. Rosenblatt Case-Western Reserve U.	"Introducing Operations Research in the Undergraduate Curriculum"
	Gerald L. Thompson Carnegie Mellon U.	"Operations Research - The State of the Art"
1975	William J. Cody Argonne Nat'l Lab.	"Computer Evaluation of Functions"
	George Fix U. of Michigan	"Numerical Approximation for Data Driven Ocean Circulation Models"
	A. B. Willcox Exec. Dir., MAA	"Some Bridges to and from Mathematics"
F75	Edwin E. Moise CUNY	"The Problem of Learning to Teach"
1976	Richard G. Laatsch * Miami U.	"Scrambled Infinite Dimensional Convex Eggs"
	E. B. Saff U. of South Florida	"Geometric Convergence of Rational Functions to Analytic Functions in Unbounded Domains"

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	Hans J. Zassenhaus Ohio State U.	"A tribute to Arnold E. Ross on his Retirement"
F76	Fred S. Roberts Rutgers U.	"Graphs, Garbage, and a Pollution Solution: Graph Theory Applied to Environmental Problems"
	Maynard Thompson Indiana U.	"Discrete Mathematical Models for Some Problems Arising in Biology and Medicine"
1977	C. W. Curtiss U. of Oregon	"A Survey of Recent Developments in the Representation Theory of finite Groups"
	D. R. Hughes U. of London	"Designs and Some of Their Connections to Other Branches of Mathematics"
F77	Richerd C. DiPrima Rensselaer Poly. Inst.	"Differential Equations in the Undergraduate Curriculum"
	Alan C. Tucker SUNY, Stonybrook	"Graph Models in a Combinational Problem-Solving Course"
1978	P. Minton Va. Commonwealth U.	"Bidding Models-An Example of Applied Mathematics"
	Neil J. A. Sloane Bell Telephone Labs	"At the Intersection of Computer Science, Communications Theory, and Modern Algebra"
F78	William S. Dorn U. of Denver	"Numerical Instabilities and Their Cure"
	Richard S. Varga Kent State U.	"Numerical Analysis - The State of the Art"
1979	Peter J. Hilton Case-Western Reserve U.	"The Development of Algebraic Topology - A Study in Evolution"
	V. Frederick Rickey Bowling Green State U.	"History of Mathematics as a Pedagogical Tool"
F79	D. L. Bernstein Brown U.	"Mathematical Modeling an Existence Theorems"
	Yung Chen Lu Ohio State U.	"Catastrophe Theory"

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1980	Donald O. Koehler * Miami U.	"Evolution and Mathematical Models of Evolution"
	J. Sutherland Frame Michigan State U.	"Groups - A Key to Patterns in Science"
F80	George E. Andrews Penn. State U.	"Recent Implications of the Work of L.J. Rogers"
	D. K. Ray-Chaudhuri Ohio State U.	"An Introduction to Coding Theory"
1981	Ralph P. Boas Northwestern U.	"The Harmonic Series and the Elephants"
	Cliff Long* Bowling Green State U.	"Singular Value Decomposition of Matrices with Applications"
F81	H. T. Banks Brown U.	"Parameter Estimation and Optimal Control in Delay and Partial Differential Equations"
	Philip M. Tuchinsky Ford Motor Co.	"How I Do My Job - Systems Development"
1982	Douglas Faires * Youngstown State U.	"Models of Population"
	R. G. Laatsch Miami U.	"Polyominoes-Pleasurable Places for Perception and Perplexing Packing Puzzles"
	Marcia Sward Trinity C.	"New Initiatives in Pre-College Mathematics Education"
F82	Hans Zassenhaus Ohio State U.	"Mathematicians of Pre-World War II Germany"
	J. M. Greenberg Ohio State U.	"What is Applied Mathematics? What is Applied Mathematics Education"
	S. Nemer Off Budget & Mgmt.	"The Process of Revenue Estimating for State Budget Purposes"
	W. C. Rheinboldt U. of Pittsburgh	"On the Discretization Error for Parameterized Non-Linear Equations"

Appendix F

	D. P. Roselle Virginia Tech. Inst.	"A Sampling of Applied Combinatorial Problems"
1983	N. Azarnia Miami U.-Hamilton	"The Contributions of Anna Johnson Pell Wheeler"
	Darrell Horwath * John Caroll U.	"How to Keep Students Awake: Some Tricks of the Trade"
	D. Lutzer Miami U.	"Topology, Proofs and CUPM's Mathematical Sciences Program Recommendations"
	Maynard Thompson Indiana U.	"Mathematical Modeling: When, Why, and for Whom"
F83	A. Lazer U. of Miami	"Intermediate Value Theorems and Differential Equations"
	James R. C. and Joan R. Leitzel Ohio State U.	"Mathematical Education in Mainland China"
	Kenneth Meyer U. of Cincinnati	"Stability of Trojan Satellites"
	C. Robinson Northwestern U.	"In Search of Stability in a Complex World"
1984	Peter Henrici U. of North Carolina and E.T.H., Zürich	"Recent Progress in Numerical Conformal Mapping"
	Richard Little * Baldwin-Wallace C.	"Some Things My Mathematics Professors Never Taught Me"
	V. Frederick Rickey Bowling Green State U.	"Curves of Calculus"
	Richard Varga Kent State U.	"Some Conjectures and Open Problems in Function Theory and Approximation"

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F84	D. Burke Miami U.	"Undecidable Mathematics"
	Mary Gray American U.	"Mathematics and the Law"
	L. Sanders Miami U.-Hamilton	"Characterizing Trees by a Finite Sequence of Integers"
	Phil Schmidt U. of Akron	"Teaching Experimental Applied Mathematics: the TEAM Project"
	Lynn Steen St. Olaf C.	"Renewing Undergraduate Mathematics"
1985	I. Greber Case-Western Reserve U.	"Engineering Needs and the College Mathematics Core"
	Phil Huneke Ohio State U.	"The Embeddability of Graphs"
	James R. C. Leitzel * Ohio State U.	"Three P's for Teaching Mathematics"
	P. Wang Kent State U.	"Symbolic Computation on Modern Computers"
F85	Turner Whitted U. of North Carolina	"Causes and Cures of Aliasing in Computer Graphics"
	D. E. Cameron U. of Akron	"Memoirs on Compact Topological Spaces by P. S. Alexandroff and P. W. Urysohn - the Birth of Soviet Topology"
	Alan H. Schoenfeld U. of Calif-Berkeley	"The Reality of Student Problem Solving Behavior - It's Worse Than You Think"
1986	Alan Poorman * Ashland C.	"Quality Control in the U.S."
	Peter Hilton SUNY-Binghamton	"From Elementary Geometry to Not So Elementary Number Theory: The Final Story." (Talk actually given.)
	Arthur T. White Western Michigan U.	"Ringing the Cosets"
F86	Persi Diaconis Stanford U.	"Combinatorics and Card Tricks"

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	Joe Diestel Kent State U.	"Rosenthal's Dichotomy"
	Leonard Gillman U. of Texas	"Approval Voting"
1987	Milton D. Cox* Miami U.	"The Remarkable Tilings of Roger Penrose"
	Herbert S. Wilf U. of Pennsylvania	"Strings, Substrings, and the Nearest Integer Function"
	Warren Page N.Y.C. Technical C.	"The Mathematical Competition in Modeling"
F87	Frank R. Giordano U.S. Military Acad.	"The Teaching and Practicing of Mathematical Modeling for Undergraduates"
	Kenneth Cummins Kent State U.	"Using the Students in Teaching Calculus"
	Deborah Tepper Haimo U. of Missouri-St. Louis	"Solutions of the Heat Equation"
1988	J. William Friel * U. of Dayton	"Farey Fractions"
	George F. Andrews Penn State U.	"Dyson's Crank of a Partition"
	P. Campbell Beloit C.	"Mathematical Discoveries of the 1980's in Applied Mathematics"
F88	H. Edwards N.Y.U.-Courant Inst.	"Kronecker's Views of the Foundations of Mathematics"
	William Dunham Hanover C.	"Vito Volterra and the Limits of Pathology"
	Joe Gallian U. of Minnesota-Duluth	"The Mathematics of Identification Numbers"
1989	Charles Hampton * College of Wooster	"Calculus: Past, Present and Future"
	Gerald Alexanderson Santa Clara U.	"Gaussian Binomial Coefficients"

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F89	David E. Kullman Miami U.	"What Colleges Should Do About the New NCTM Standards"
	Ivan Niven U. of Oregon	"Applied Topics in College Algebra"
1990	Olaf P. Stackelberg * Kent State U.	"Number Theory and Probability: A Rich Interplay"
	J. W. Dawson, Jr. Penn State U.-York	"The Life and Work of Kurt Gödel"
	B. A. Case Florida State U.	"Are We Teaching Majors the Right Mathematics? Are We Teaching it the Right Way?"
F90	Peter E Castro Eastman Kodak Co.	"Industrial Mathematics: More Than Applied Mathematics"
	Eugene C Gartland Kent State U.	"Numerical Solution of Problems in Liquid Crystals"
	Philip M Tuchinsky Ford Motor Co.	*unknown*
1991	Janet Roll* U. of Findlay	"On Circles and Doughnuts (or Locally Partially Ordered Groups)"
	Harvey Keynes U. of Minnesota	"Can Mathematicians be Involved in Education and Still Survive in the Profession?"
F91	Richard Varga Kent State U.	"Solving Large Nonsymmetric Nonsingular Matrix Equations by Iterative Methods"
1992	John Ewing Indiana U.	"Can We See the Mandelbrot Set?"
	James R. C. Leitzel Ohio State U.	"Challenges to Change"
	David E. Kullman * Miami U.	"Variations on a Spiral"
F92	David S. Moore Purdue U.	"Teaching Statistics as a Respectable Subject"

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	James Albert Bowling Green State U.	"Teaching Statistical Inference Using Bayes"
1993	Alan Stickney * Wittenberg U.	"A Graphing Calculator Tour"
	Gerald Porter U. of Pennsylvania	"Linear Algebra as a Laboratory Science"
F93	Stan Wagon Macalester C.	"The Impact of Modern Software on Teaching and Research"
	Charles Groetsch U. of Cincinnati	"Inverse Problems: What are They and Why Should We Care?"
	V. Frederick Rickey Bowling Green State U,	"Benjamin Franklin Finkel and the Founding of *The Monthly*"
	David Smith Duke U.	"Calculus, Computers, Cooperation, and Composition"
1994	S. Brent Morris National Security Agency	"Magic Tricks, Card Shuffling, and Dynamic Computer Memories"
	Joe Kennedy Miami U.	"Lights and Strings and Things"
	Alice Silverberg Ohio State U.	"Fermat's Last Theorem and Elliptic Curves"
	Thomas Hern * Bowling Green State U.	"The Image of a Circle: When Eigenvalues Do Not Quite Cut It"
F94	Keith Devlin St. Mary's C of Cal.	"Whither Mathematics, and What It Means for The Math Professor"
	Daniel Solow Case Western Reserve U.	"What Should Students Learn from Advanced Mathematics and How Should We Teach Them?"
	Richard Lesh Ed. Testing Service and NSF	"Equity , Content Quality, and Systemic Initiatives"
	Ed Dubinsky Purdue U.	"Connections Among Learning, Pedagogy and Assessment"

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1995	Grahame Bennett Indiana U.	"From Coin Tossing to the Jacobi Polynomials, and Beyond"
	Floyd Barger * Youngstown State U,	"TBA Part I, Part II" (on teaching.)
	Philip Cheifetz Nassau CC	"A Brief History of Calculus Reform and The Harvard Calculus Project
F95	Underwood Dudley DePauw U.	I. "Formulas for Primes" II. "Angle Trisectors"
	Dale Mugler # U. of Akron	"The Gibbs Phenomenon"
	Walter Mientka U. of Nebraska	I. "The 1994/1995 IMOs--A Serendipitous Victory??" II. "Approximations to Arithmetic Sums and Their Applications"
1996	David Bressoud Macalester C.	"The Search for Proof: I. Cauchy, Dirichlet, and Abel in Paris II. The Counting of Alternative Sign Matrices"
	Robert Smith Miami U.	"Spreadsheets in Calculus"
	John Michel * Marietta C.	"Navigating to the Center of Ohio and to the Moons of Jupiter"
F96	Ed Barbeau U. of Toronto	"A Nonlinear Recursion Spawned by a Frieze Pattern"
	Aparna Higgins # U. of Dayton	"Unexpected Results from Undergraduate Researchers"
1997	Laszlo Babai U. of Chicago	"Surprise Methods in Combinatorics and in the Theory of Computing"
	Barbara (Flajnik) Ashton Wittenberg U. *	"The Mathematics of Frank Lloyd Wright's Architecture"
	Gabor Szekeley Bowling Green State U.	"Reminiscences of Paul Erdös"
	Allan Rossman Dickinson C.	"Workshop Statistics: Learning by Discovery"

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F97	Marjorie Senechal Smith C.	I. "The Aperiodic Zoo" II. "The Search for an Aperiodic Tile"
	Jerry Holt, Dean Shawnee State U.	"[Branch] Rickey and Robinson by the Numbers"
	V. Frederick Rickey # Bowling Green State U.	"A Mathematician, Historian, and Teacher Shares His Thoughts, Experiences, and Advice about Mathematics"
1998	Frank Morgan Williams C.	I. "The Soap Bubble Geometry Contest" II. "Bubbles and Crystals in Surfaces and in a Sphere"
	Curtis Bennett Bowling Green State U.	"An Escher Version of the Banach-Tarski Paradox"
	Leo J. Schneider * John Carroll U.	"A Funny Thing Happened on the Way to the Formula"
F98	David Stone Georgia Southern U.	"Mathematics is a Lazy Man's Sport"
	Douglas Faires# Youngstown State U.	"Designing a Modern Applied Mathematics Program"
	Susan Gantner America Assoc. for Higher Ed.	"A Study of the Effects of Calculus Reform"
1999	Ronald L. Graham AT&T Labs Research	"Mathematics and Computers: Recent Success and Insurmountable Challenges
	Roger Marty * Cleveland State U.	"Teaching Mathematical Reasoning"
F99	Thomas Banchoff Brown U.	"Interactive Geometry on the Internet"
	William Dunham Muhlenberg C.	"Euler's Sums and Euler's Crumbs
	Gilbert Strang Mass. Inst of Tech.	"Small World Networks and Partly Random Graphs"

Appendix F

2000	Mel Slugbate (Colin Adams) Slugbate and Mossbutter Real Estate	"Real Estate in Hyperbolic Space: Investment Opportunities for the Next Millennium"
	Aparna Higgins * U. of Dayton	"Questions about Networks: Stories about Networking"
	Colin Adams Williams C.	"Making Calculus Fun: How to Entertain at Parties"
F00	Robert L. Devaney Boston U.	"The Mandelbrot Set, the Farey Tree, and the Fibonacci Sequence"
	James Tattersall Providence C.	I. "Two Books that Spanned a Millennium" II." Mathematical Vignettes from Cambridge."
	Zaven Karian# Denison U.	"Using Maple for Teaching Probability and Statistics"
2001	Arthur Benjamin Harvey Mudd C.	I. "Proofs That Really Count!" II. "Mathemagics!"
	Judith Palagallo * U. of Akron	"Random Fractal Images"
	V, Frederick Rickey U.S. Military Acad.	I. "The Palimpset of Archimedes" II. "History of Mathematics as a Pedagogical Tool"
F01	Ann Watkins Cal. State, Northridge	I. "Fallacies in Elementary Statistics" II. "The MAA and Scholarship in the Teaching of Mathematics
	Jerry Moreno # John Carroll U.	"Citizens Stats 101 - Toward a Quantitively Literate Citizenry"
	Edward B. Burger Williams C.	I. "How to Always Win at Limbo" II. "Personal Thoughts on What to Teach and How Not to Teach it.
2002	Jeffrey Weeks	"Measuring the Universe "Part I: Curvature "Part II: Topology"

Appendix F

	Suzanne Lenhart U. of Tenn., Oak Ridge Nat. Lab.	I. "Applications of Optimal Control to Various Population Models" II. "What Do Parallel Parking and Lie Brackets Have in Common?"
	Thomas Gantner* U. of Dayton	"Mathematics Journals as a Teaching Resource"
F02	Underwood Dudley DePauw U.	I. "Why Teach Mathematics?" II. "Calculus Books"
	Daniel E. Otero Xavier U.	I. "Henry Briggs (1561-1630) and the Story of Logarithms" II. "On Teaching Mathematics with Original Sources"
	Alan Stickney# Wittenberg U.	"Mathematics Viewed as a Experimental Science"
2003	Dan McWhorter Nat. Security Agency	I. "Introductory Coding Theory" II. "Mathematics at the National Security Agency"
	Ravi Vakil Stanford U.	I. "The Mathematics of Doodling" II. "Why the Golden Mean?"
	Harold Putt * Ohio Northern U.	"Some Applications of Abstract Algebra"
	Ann Ritchey Mount Union C.	"Math Connections"
F03	Carl Cowen Purdue U.	I. "Rearranging the Alternating Harmonic Series" II. "Connections Between Mathematics and Biology"
	David Minda# U. of Cincinnati	"Some Geometric Gems via Möbius Transformations"
	Leo Schneider John Carroll U.	"A Prime AIME Problem"
	Jon Stadler Capital U.	"Lights (Over and) Out"

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2004	Joe Gallian U. of Minn, Duluth	I. "Touring a Torus" II. "Breaking Drivers' License Codes"
	Judy Holdener Kenyon C.	"Sagebrush, Turtles, and Snowflakes"
	Dale Mugler * U. of Akron	"Music and the Time-Frequency Analysis of Wavelets"
	J. Kevin Colligan Nat. Security Ag.	"Breaking the Enigma"
F04	James A. Sellers Penn State U.	I. "Research in Integer Partitions - Alive and Well" II. "More Than Just Convergence"
	Thomas P. Dence# Ashland U.	"Pattern Busters"
	Elizabeth Wilmer Oberlin C.	"Big Graphs, Fast Walks, Loose Bounds"
	Edward Spitznagel Washington U.	"Six Easy Pieces-or How I Came to be an Applier of Mathematics, with Half a Dozen Short Short Stories"
2005	Christopher N. Swanson Ashland U.	I. "The Probability an Amazing Card Trick is Dull" II. "The Discrete Mathematics of a Card Trick"
	John P. Holcomb Cleveland State U.	"Understanding Lies, Damned Lies, and Statistics: A Look at Why So Many People Find Statistics Frustrating"
	Mark A. Smith * Miami U.	"Arc Length and Surface Area - What's Up with Calculus Textbooks?"
	Daniel Maki Indiana U.	"What are Hidden Markov Models and Who Cares?
F05	Ronald L. Graham U. of Cal. San Diego	"Packing Discs in the Plane"
	Thomas Hern# Bowling Green St U.	"I Thought I was Lecturing"

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	Carol Schumacher Kenyon C.	"Zeroing in on the Implicit Function Theorem"
	Leo Schneider John Carroll U.	I. "A Funny Thing Happened on the Way to the Meeting" II. "Undergraduate Research: Planting the Seed and Watching It Grow"
2006	Georgia Benkart U. of Wisconsin, Madison	I. "Going Up and Down" II. "Ladies of the Rings"
	Dwight Olson * John Carroll U.	"Some Thoughts on Rings and Things"
	Thomas Price U. of Akron	"Developing an Undergraduate Research Program"
	David Finn Rose-Hulman Inst. of Tech.	"Bicycle Tracks on the Plane and the Sphere"
F06	David Singer# Case-Western Reserve U.	"Focusing on the Critical Points of Polynomials"
	Curtis Bennett Loyola Marymount U.	I. "Understanding the Thurston Model of Hyperbolic Space" II. "Averaging, Discrete Means, Coalition Building, and a Paradox of Social Choice"
	Bernd Sturmfels U. of Calif, Berkeley	"The Joy of Solving Equations"
2007	Francis Edward Su Harvey Mudd C.	I. "Preference Sets, Graphs, and Voting in Agreeable Societies" II. "My Favorite Math Fun Facts"
	Daniel E. Otero Xavier U.	"Euler, Number Theorist"
	Judith Palagallo U. of Akron	"Curious Curves"
	Thomas P. Dence * Ashland U.	"A Tantalizing Trek through Elementary Number Theory"

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F07	Thomas Price# U. of Akron	"Approximating Sums of Infinite Series"
	Mihai Caragiu Ohio Northern U.	"Geometry with Complex Numbers"
	Frank Ryan (formerly of the Cleveland Browns)	I. "Resolved, that a Football is a Mathematical Object" II. "Mathematics and Truth"
	Richard Little Baldwin-Wallace C.	Surviving the White Water Rapids at the Confluence of the Mathematics Curricula for High School and College"
2008	William Higgins *# Wittenberg U.	"Insights from Archimedes"
	Lew Lefton Georgia Tech	I. "Infinity Bottles of Beer on the Wall" II. "Distribute Computing and the Internet"
	Carl Pomerance Dartmouth C.	I. "The Covering Congruences of Paul Erdös" II. "Euler's Function"
F08	John Tynan Marietta C.	"Answering One of Calculus' Most Boring Questions. (Math with Cosmo)"
	Susanna Epp DePaul U.	"Linguistic Issues in College Mathematics Courses"
	David Bressoud Macalester C.	I. "Proofs and Confirmations: The Story of the Alternating Sign Matrix Conjecture" II. "Calculus as a High School Course"
	Wiebke Diestelkamp U. of Dayton	"On the Difficulty of Faking Data"
2009	V. Frederick Rickey U.S. Military Academy	"Jared Mansfield: Ohio's First Mathematician"
	Vickie Van Dresar * Ashland U.	"Canoe Do Math?"

Appendix F

	Keith Devlin Stanford U.	I. "Street Mathematics,and What We Can Learn from It" II. "When Mathematics Changed Us"
	Sarah Greenwald Appalachian State U.	"Good News Everyone! Mathematical Morsels from the Simpsons and Futurama"
F09	Tom LaFramboise Case Western Reserve U. School of Medicine	"Mathematics in Biomedical Research"
	Ed Packel Lake Forest C.	"Recent Results in Projectile Motion and a Plug for Experimental Mathematics"
	Judith Grabiner Pitzer C.	I. "It's All for the Best: Optimization in the History of Science" II. "Lagrange, Symmetry, and Space"
	Judy Holdener # Kenyon C.	"Mental Imagery in Mathematics"
2010	Karen Parshall U. of Virginia	"The Internationalization of Mathematics in a World of Nations: 1800-1960"
	John Oprea Cleveland State U.	"Geometry and the Real World"
	Ivars Peterson Dir. Pub. & Comm. MAA	I. "Moebius Madness" II. "Newton's Clock: Chaos in the Solar System"
	Mark Miller * Marietta C.	"Generalizing Euclid V: In Search of the Unique Other"
F10	Michael Henle Oberlin C.	"Can You Hear the Mathematics?"
	Barbara Ashton Bor. of Manhattan CC, CUNY	"A Sampler of Topics from Mathematics and the Arts"
	John Stillwell U. of San Francisco	I. "Hits and Memories: 1940-1970" II. "From Perspective Drawing to the Eighth Dimension"

Appendix F

	Dave Sobecki Miami U., Hamilton	"Of Elephants, Fuzzy Dogs, and Teaching Backwards: A Story About Making Your Course Engagin' “
2011	Jennifer Quinn U. of Washington, Tacoma	"Combinatorialization of Linear Recurrences through Weighted Tilings”
	Gordon Swain Ashland U.	"On Lines and Parabolas, Again and Again"
	Douglas Ensley Shippensburg U.	I. "Invariants under Group Actions to Amaze Your Friends!" II. "Permutations in Graph Puzzles”
	Don Hunt* Ohio Northern U.	"Will it Go 'Round in Circles: Will it Ride Smoothly on Bumpy Ground? (YEAH)”
F11	Richard Little # Baldwin-Wallace C.	"How I escaped the Peter Principle!"
	George K. Francis U.of Illinois Urbana-Champaign	"A Geometrical Puppetshow: Some things you really can't see without computer graphics"
	Sergei Tabachnikov Penn. State U.	I. "In praise of serendipity: a tale of a geometric inequality" II. "Flavors of Bicycle Mathematics”
	Mark Meckes Case Western Reserve U.	"5-dimensional geometry is not like 2-dimensional geometry (and 3 and 4 are somewhere in between)”
2012	Aparna Higgins U. of Dayton	"Simple Surprises"
	Jeffrey Lagarias U. of Michigan	"Packing Space with Regular Tetrahedra"
	Rachel Hall St. Joseph's U.	"Submajorization and the Geometry of Unordered Collections, with Applications to Music and Welfare Economics”

Appendix F

	Jon Stadler * Capital U.	"Using Mathematics to Gain the Upper Hand at Family Game Night"
F12	Matt Neal Denison U.	"Ruining Sports with Math"
	Tommy Ratliff Wheaton C.	"Who has the Power in the Electoral College? You might be Surprised"
	Erica Flapan Pomona C.	I. "Mirror image symmetry from different viewpoints" II. "Topological symmetry groups"
	David Meel # Bowling Green State U.	"Mathematics in the Media: Leveraging Explorations of Higher Level Mathematics"
2013	Sir Randolph Bacon III (Colin Adams, Williams U.)	"Blown Away: What Knot to Do When Sailing"
	Robert Bosch Oberlin C.	"Opt Art"
	Barbara Faires Westminster C.	"Stefan Banach and the Scottish Café"
	Wiebke Diestelkamp * U. of Dayton	"The Lady Tasting Tea: R. A. Fisher and the Statistical Revolution"
F13	Tim Chartier Davidson C.	L "Sports Ranking: March Madness to Twitter" II. "Mime-matics
	Richard Cleary Babson C.	"Some Non-Standard Sports Applications of Mathematics and Statistics"
	Brad Hartlaub Kenyon C.	"Statistics: A Time for Celebration and Change"
	Harold Putt # Ohio Northern U.	"Using Game Theory to Teach Critical Thinking Skills and Quantitative Literacy"

Appendix F

2014 (SIAM)	Michael Dorff Brigham Young U.	"How Math is Changing the World"
	Steve Goldner U.S. Army Tank-Automotive Research, Development, and Engineering Center	"Vehicle Impact Test Form Based on a Modified Super-Ellipse"
	David A. Lamb First Technology Safety Systems	"Protected Mobility Optimization for the Army Ground Fleet"
	Philip Blau * Shawnee State U.	"Ideal Prime Factors to Ideals: A Glimpse of a Structural View of Algebra"
	Charles Groetsch The Citadel	"A Couple of Integrals, a French Friar, and a Wacky Experiment"
F14	Lew Ludwig # Denison U.	"Reconsidering Hilbert's List With a Pedagogical Twist"
	Adam Parker Wittenberg U.	"Rediscovering Lost Techniques in Ordinary Differential Equations"
	Robert Devaney Boston U.	I. "Chaos Games and Fractal Images" II. "The Fractal Geometry of the Mandelbrot Set"
	William Dunham Muhlenburg C.	"Two (More) Morsels from Euler"
2015	Bonita Lawrence Marshall U.	"The Marshall Differential Analyzer Project: Solutions of Dynamic Equations Using Mechanical Integration"
	Carl Lee U. of Kentucky	"The Many Facets of Polyhedra"
	Annalisa Crannell Franklin & Marshall U.	I. "Math and Art: The Good, The Bad, and the Pretty" II. "In the Shadow of Desargues"
	John Prather * Ohio U. Eastern	"Taking Other People's Ideas to Extremes"

Appendix F

F15	Dana Mackenzie	I. "Gasketry, Poetry and Punditry: Communicating Math to the Masses" II. "How to Win at (One-Round) War"
	Carol Schumacher Kenyon C.	"The New CUPM Guidelines "
	Chris Swanson # Ashland U.	"Active Learning in the Non-Calculus Classroom: My Favorite Activities"
	Khristo Boyadzhiev Ohio Northern U.	"The Binomial Transform"
2016 100th Annual Meeting	Jenna Carpenter Louisiana Tech U. First Vice President of the MAA	I. "Top Secret: Women's Contributions to the History of Computing" II "Mentoring Women and Underrepresented Minorities in Mathematics"
	V. Frederick Rickey USMA, West Point	"The Man on the Ball: Benjamin Franklin Finkel"
	Daniel Baczkowski U. of Findlay	"Problems in Number Theory Involving Age-old Sequences"
	Daniel Otero * Xavier U.	"Gottfried Wilhem Leibniz (1646-1716): 'An Academy in Himself' "

Appendix G

Section Teaching Award

* *National Awardee*

1992	V. Frederick Rickey*	Bowling Green State U.
1993	Dale H. Mugler	U. of Akron
1994	Robert S. Smith	Miami U.
1995	Aparna W. Higgins*	U. of Dayton
1996	J. Douglas Faires	Youngstown State U.
1997	John S. Lancaster	Marshall U.
1998	Thomas Hern	Bowling Green State U.
1999	Zaven A. Karian	Denison U.
2000	Jerry L. Moreno	John Carroll U.
2001	Al Stickney	Wittenberg U.
2002	David Minda	U. of Cincinnati
2003	Thomas Dence	Ashland U.
2004	Leo Schneider	John Carroll U.
2005	David Singer	Case Western Reserve U.
2006	Thomas Price	U. of Akron
2007	William J. Higgins	Wittenberg U.
2008	Judy Holdener	Kenyon C.
2009	*(Not Awarded)*	
2010	Richard Little	Baldwin-Wallace C.
2011	David Meel	Bowling Green State U.
2012	Harold Putt	Ohio Northern U.
2013	Lewis Ludwig	Denison U.
2014	Christopher Swanson	Ashland U.
2015	*(Not Awarded)*	


Second Annual Meeting
April 6, 1917
Chemistry Hall, The Ohio State University
B
Front Row:
Grace M. Bareis, Harriet E. Glazier, Anna B. Peckham, R.D. Bohannan, Harris Hancock, F. Anderegg, C.C. Morris,
T. Elmer Trott, G.N. Armstrong
Second Row:
C.B. Austin, R.B. Allen, T.M. Focke, W.E. Beckwith, Anna H. Pamiei, E.J. Hirschler, W.E. Anderson, C.L. Arnold
Third Row:
Not Identified, F.B. Wiley, K.D. Swartzel, H.W. Kuhn, D.T. Wilson, Louis Brand