

**Missouri Section of the Mathematical Association of America:
Centennial History 1915-2015**

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The Missouri Section Flag
(photo courtesy of Yungchen Cheng)

Preface

Compiling and writing the history of the Missouri MAA Section has been time-consuming, but it has mainly been rewarding and a wonderful learning experience. Both the *Monthly* and the MAA began with strong Midwestern and Missouri influences, something which our section can look back on with well-deserved pride. Missouri MAA members have consistently advanced collegiate mathematics, mathematics education, mathematics research and scholarship, and public appreciation for and understanding of mathematics in both Missouri and the nation. Looking to the future, the MAA and the Missouri Section can continue to be a great source of opportunities for leadership and service for Missourians in the mathematical sciences, and we can continue to build on the solid foundation of the first hundred years.

Many people have been a big help in the creation of this history. Susan Callahan has been interested in the history of our section for a long time, and we had plans to do the section history together, but circumstances beyond her control intervened. Vic Gummersheimer and Yungchen Cheng have been most helpful in finding documents. Chris Stevens, Mary Shepherd, Curtis Cooper, Richard Delaware, and Zdenka Gaudarrama have provided valuable feedback and information about activities and events they were part of. To all those who attended any of my history talks at Missouri Section meetings the past several years and made comments, suggestions, and corrections, you helped make this history much better by your interest and willingness to contribute. Last, but first with me as always, many thanks to my wife Pennye for all the love and support she has provided throughout my career in mathematics. When she read a late draft of the Missouri Section History and told me she enjoyed it and thought it was good, that was the best recognition I could ever hope for.

Despite the efforts of everyone in the last paragraph, there have most likely been a number of people active in the Missouri MAA Section who did not receive the recognition they deserve in this history. In addition, errors, while guarded against, almost certainly slipped in. However, because of our current ability to post information online easily, the section history can (and should!) be an ongoing process. Anyone who sees omissions or errors is cordially encouraged to assume an active role in making our section history more complete and more accurate.

So, if you see something that needs to be corrected, or if you know about someone or something that ought be added, send a message to the Section Web Page Administrator, who will be in the best position to see that changes are made. If we make wise and regular use of the tools, electronic and print, old and new, at our disposal, the section history can be continuously monitored and amended. In this way, our section history can be kept up-to-date, and the person responsible for writing the 150th or 200th anniversary version will have an easier job.

Whoever that person turns out to be, if you are trying to decide whether to take on the job and need that last little push, here is something to consider:

Road Rule 25: Keep a journal of your travels. It is an invaluable tool to remind you of your trip, and the details within it are important for recounting history and the mark you leave on it.

Clark's Corollary: If traveling with other people, always volunteer to be the journal writer. That way, yours will be the version of history that is recorded.

– *Out West*, by Dayton Duncan

(In *Out West*, Dayton Duncan writes about his trip retracing Lewis and Clark's route in the VW bus he borrowed from his sister. I got my copy at the gift shop under the arch in St. Louis.)

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1. The role of the *American Mathematical Monthly*

When Benjamin Franklin Finkel came from Ohio to Kidder, Missouri, in 1892 to teach mathematics at the Kidder Academy, he brought with him an idea, maybe at first only a dream. Finkel saw a need for a journal to meet or, more likely, help develop, the interests of mathematics teachers in high schools and academies, especially those in rural areas. With the help of the editor and publisher of the local newspaper and his friend John M. Colaw, whom Finkel knew through his contributions to the *School Visitor*, in January 1894 the dream was realized and the first issue of *The American Mathematical Monthly* was published. The first person to subscribe to the *Monthly* was J.M. Greenwood, Superintendent of Schools in Kansas City [1], who was a mathematician as well as an administrator and who promised to bring the journal to the attention of his mathematics teachers. One of those teachers was George R. Dean, later Professor of Mathematics at the Missouri School of Mines in Rolla for nearly 40 years. Dean quickly became a regular contributor to the *Monthly*, mostly through proposing and solving problems, but also with occasional short articles. Greenwood taught in rural schools in northeast Missouri in the 1850s and 1860s, and was instrumental in the creation of the Kirksville Normal School, now Truman State University, where he taught mathematics, logic, and natural philosophy from 1867 until 1874, when he accepted the position of superintendent in Kansas City. Greenwood died ([2], [3]) in August of 1914, a little over a year before the establishment of the MAA.

In June, 1895, Finkel accepted the position of Professor of Mathematics and Physics at Drury College in Springfield, MO, and when he moved to Springfield, the *Monthly* moved with him. That same summer, Finkel attended summer school at the University of Chicago, where he met Leonard Eugene Dickson. In 1900 Dickson became co-editor of the *Monthly*, replacing Colaw, who had turned to other interests. Along with Dickson's editorial help the *Monthly* received a subsidy of \$50 per year from the University of Chicago. In 1906, H.E. Slaught, also from Chicago, succeeded Dickson as co-editor. By this time, the *Monthly* was becoming more than two editors could comfortably handle, Finkel was worried about the publisher/printer quitting, and there were financial worries. In addition, the audience of the *Monthly* had not become the high school teachers that Finkel first aimed for, but college teachers of mathematics. In 1912 Finkel and Slaught discussed how to keep the *Monthly* viable, with the result that, beginning with Volume XX in 1913, the *Monthly* was published with the cooperation of twelve universities (Chicago, Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Northwestern, and Washington University in St. Louis) and two colleges (Colorado and Oberlin in Ohio), a move that both widened the journal's support and solidified its financial position. The participation of the University of Missouri came about through the influence of Professor E.R. Hedrick, about whom more will be said later.

Finkel and Slaught believed, however, that the best way to assure the future of the *Monthly* was for it to be associated with a mathematics professional organization, and the natural group to approach was the American Mathematical Society. At the April, 1914, meeting of the Chicago Section of the AMS, following an informal discussion at dinner, a committee of the Section was appointed to consider "the relation of the Society to the field now covered by the *American Mathematical Monthly*." In December 1914, at the business meeting of the Chicago Section, this committee made its recommendation and it was "voted that the Chicago Section request the Council of the Society to appoint a committee to consider and report concerning possible relations of the Society to the field now covered by the *American Mathematical Monthly* [4]." A committee of five was appointed, and at the April, 1915, AMS meeting in New York, the following resolution was passed with only two or three dissenting votes:

"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. [5]"

So the writing was on the wall - if the *Monthly* was to be affiliated with a professional society, a new one would probably have to be created. More details can be found in [6] and [7].



B.F. Finkel

2. The birth of the MAA

Slaught went right to work. In June 1915, he sent out hundreds of letters inquiring about the interest in forming such a new society, enclosing a reply post card. By November the number of positive responses was approaching 450, with only a handful expressing any form of disapproval, and the organizational meeting for the new society was set for December 30-31, 1915, in Columbus, Ohio. The time and place was chosen to coincide with the already-planned joint meetings of the Chicago Section of the AMS and the American Association for the Advancement of Science. In [6], Slaught emphasized that “this whole movement is ... [not] an effort on the part of those interested in the MONTHLY to rescue it from impending bankruptcy. The MONTHLY is in sound financial condition and is seeking no rescue measures.” We can thus see that providing a professional organization home for the *Monthly* was an important component in the founding of the Mathematical Association of America, but this was certainly not the entire rationale. More importantly, the *Monthly* had become both a symbol and an identifier for the field of collegiate mathematics and those whose main job was to teach collegiate mathematics, and the consensus was that this group was not adequately represented by either the high school organizations on one side or the AMS on the other.

In 1915, the American mathematical community was not large, and even if a new organization was to be formed to represent the great collegiate middle ground between the high school teachers and the researchers, leadership was going to come from people already professionally active in mathematics, and this meant primarily the AMS. Thus began the practice of frequently scheduling MAA and AMS meetings simultaneously to allow people to attend both in one trip, something that is still done for the January Joint Meetings, and which demonstrates the “heartly good will and encouragement” that the AMS expressed towards the new organization.

Missouri was one of the states where a preliminary meeting was held in 1915 prior to the Columbus meeting. On November 27, 1915, the Southwestern Section of the AMS held its ninth regular meeting at Washington University in St. Louis. In the report on this meeting [8], twenty-eight members of the society were listed as attending, and of those, the following became active in the Missouri Section of the MAA (i.e., later attended one or more section meetings):

L. D. Ames – University of Missouri
 Charles Ammerman – McKinley High School, St. Louis
 E. R. Hedrick – University of Missouri
 W. H. Roever – Washington University
 C. A. Waldo – Washington University
 Eula Weeks – Cleveland High School, St. Louis

Also attending this AMS meeting, and the December one in Columbus, was Dr. H. M. Sheffer of St. Louis, but there is no record of him ever attending a Missouri MAA Section meeting. Eula Weeks received her Ph.D. from the University of Missouri in 1915; her advisor was Hedrick, and she was his first and only Ph.D. student. The report in [8] does not mention any kind of caucus of attendees from Missouri to discuss the formation of a new organization, but there must have been at least some informal discussions. In the report of the first official Missouri Section meeting [9], held November 18, 1916, is the statement: “Professor Hedrick gave a short report about the beginnings of this section in the unorganized meeting one year ago at Washington University.” There were fourteen papers presented at the 1915 Washington University AMS meeting, two by Roever, who also presided at the meeting, and a joint paper by Hedrick and Louis Ingold (University of Missouri). Ingold also became active in the Missouri MAA Section, but he was not listed as one of the AMS members attending the meeting, so

either he was not an AMS member or he did not attend. These papers were in good company. Others listed among the fourteen papers were one by G. H. Hardy and another by S. Lefschetz. However, neither Hardy nor Lefschetz were present at the meeting, and their papers were “read by title.” So, although we cannot claim that Hardy and Lefschetz were present at the inception of the Missouri Section, they were there in spirit through their work.

Hedrick made a special effort to attend that Washington University meeting. On the previous day, Friday, November 26, 1915, he was in Chicago, where that morning he gave the opening address at the fifteenth annual meeting of the Central Association of Science and Mathematics Teachers [10]. His paper at the Washington University meeting is listed as the third one, so presumably it was presented in the morning of Saturday, November 27. Even if Ingold presented their joint paper, Hedrick must have arrived in St. Louis in time to participate in the “informal discussions,” since he reported on them in 1916. Thus, it seems likely that he left Chicago shortly after his Friday talk to catch a late morning or early afternoon train to St. Louis. In 1915 there was regular train service between Chicago and St. Louis, but it was about an eight-hour trip; see, for example [11]. (For comparison, the current Amtrak timetable for the Texas Eagle route claims a Chicago to St. Louis time of just over five and a half hours, but Amtrak is notorious for lateness.) This would have put him in St. Louis the evening of Nov. 26.

These were only the first two of four professional meetings Hedrick participated in at the end of 1915. He also attended the 22nd Annual Meeting of the AMS December 27-28 in New York, NY, where he was elected a Vice-President of the AMS (one of two), and the Columbus meeting, December 30-31.

On December 30, 1915, in Room 101 of Page Hall, Ohio State University, Columbus, Ohio the first organizational meeting for a new mathematical association began. The meeting was extended to a second session the next day, when the constitution and by-laws were adopted and the name, The Mathematical Association of America, was agreed on. Attendees from Missouri were: B. F. Finkel, Drury College; E. R. Hedrick, University of Missouri; H. M. Sheffer, St. Louis; C. A. Waldo, Washington University; and W. H. Zeigel, Kirksville Normal School. At the beginning of the meeting, Hedrick was elected temporary Chairman, and presided. Drafts of a constitution and by-laws had been prepared in advance, and the first session was devoted to getting agreement on them. Also, during the first session, when it was realized that the provisions of the by-laws regarding the nomination and election of officers could not be followed for the initial election, a special resolution was adopted to form a nominating committee, consisting of L. E. Dickson, University of Chicago; D. R. Curtiss, Northwestern University; H. L. Rietz, University of Illinois; S. E. Rasor, Ohio State University; and R. E. Root, United States Naval Academy. This committee reported at the second session Friday morning immediately after the final adoption of the Constitution and by-laws. Following the report of the nominating committee and the opportunity for further nominations from the floor, the following officers were elected:

President	E. R. Hedrick, University of Missouri
Vice Presidents	E. V. Huntington, Harvard University, and G. A. Miller, University of Illinois
Secretary-Treasurer	W. D. Cairns, Oberlin College (who served continuously until 1943)

Twelve members of the Executive Council were elected, of whom one was Finkel. The Council met on Friday afternoon and appointed a Committee on Publications: Slaughter, who continued as managing editor, R. D. Carmichael, University of Illinois, and W. H. Bussey, University of Minnesota, both of whom were already serving as *Monthly* editors. Negotiations were also immediately made with the owners of the *Monthly* to make it the official journal of the Association. This was quickly done, and the

January 1916 issue came out (a bit later than usual) under the new organization. The Committee on Publications was empowered to make appointments to fill out the Editorial Board to fifteen, the same number of editors as the *Monthly* had at the beginning of 1915. Of the fifteen, eight were already editors, including Finkel and Roever.

In the beginning, fifty-one Charter Members and three Institutional Members of the MAA were from Missouri. The Institutional Members were the University of Missouri, Central College in Fayette, and Washington University in St. Louis. The Charter Members were concentrated in St. Louis (20) and Columbia (10). The rest were scattered around the state, mainly where there were colleges, such as First District Normal School (Kirksville), St. Joseph Junior College, Drury College (Springfield), William Jewell College (Liberty), Christian University (now Culver-Stockton, Canton), Synodical College and Conservatory of Music (Fulton), Tarkio College, Cape Girardeau Normal School, State Normal School (Warrensburg), Park College (Parkville), and Hardin College (Mexico). MAA Charter Members from Missouri were:

L.D. Ames (UMC), Charles Ammerman (McKinley HS, StL), A.C. Andrews (Manual Training HS, KC), C.J. Borgmeyer (SLU), M.S. Brennan (StL), Dorothy G. Calman (StL), A.D. Campbell (WU), E.F. Canaday (Col), Byron Cosby (State Normal Sch, Kirksville), Otto Dunkel (UMC), C.A. Epperson (First District Normal School), Zoe Ferguson (St. Joseph Jr. Col), B.F. Finkel (Drury), R.R. Fleet (Wm Jewell), G.C. Forsman (Central HS, StL), Emma M. Gibson (Drury), E.R. Hedrick (UMC), C.G. Hinrichs (StL), Louise H. Huff (McKinley HS, StL), Jewell C. Hughes (Col), A.H. Huntington (Central HS, StL), Byron Ingold (Christian Col), Louis Ingold (UMC), T.W. Jackson (Fulton HS), John James (Synodical Col), G.H. Jamison (First Dist Normal Sch), J.R. Jenison (Tarkio Col), B.F. Johnson (State Normal Sch, Cape), Stella Johnson (Edina HS), O.D. Kellogg (UMC), J.M. Kent (Manual Training HS, KC), Lyda Long (Cleveland HS, StL), W.A. Luby (Northeast HS, KC), A.R. Nauer (StL), Randolph Patton (Col), J.C. Rayworth (WU), W.H. Roever (WU), W.G. Rowe (Smith Acad Manual Training Sch), J.H. Scarborough (State Normal School, Warrensburg), A.J. Schwartz (Grover Cleveland HS, StL), J.I. Shannon (SLU), I.C. Smith (Col), H.P. Stellwagen (Yeatman HS, StL), F.C. Touton (St. Jos. Jr. Col), F.W. Urban (State Normal Sch, Warrensburg), C.A. Waldo (WU), Eula A. Weeks (Cleveland HS, StL), R.A. Wells (Park Col), W.D.A. Westfall (UMC), Rose B. Wood (Hardin Col), W.H. Zeigel (First Dist. Normal Sch).

3. The official creation of the Missouri Section

Missouri was one of the first sections of the MAA to be organized. There are inconsistencies in the various statements in the *Monthly* as to which section was actually the first, with the contenders being (in alphabetical order) Kansas, Missouri, and Ohio. Part of the problem is what is meant by “first.” It is known that the first meeting of an officially recognized section of the MAA was in Kansas on March 18, 1916 [12]. However, the exact date of the charter of the Kansas Section is not known. The Ohio Section held their first meeting as a section on April 21-22, 1916, but, according to the Ohio Section History [13], they also have a copy of the official notification letter from President Hedrick granting their request to form a section, dated March 1, 1916. The letter from Ohio requesting section-hood was sent on January 3, 1916, according to [13]. Kansas claims that they, via U.G. Mitchell, the only Kansan and their representative at the Columbus meeting, submitted their letter requesting admission as a section immediately after the meeting on December 31, 1915. Also, Kansas held their “preliminary meeting” prior to the Columbus meeting in “the autumn of 1915” before the 1915 meeting at Washington University in Missouri. In [14] Slaughter says, “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.” So, we in Missouri appear not to have been the first section, either in terms of requesting or getting a charter or in terms of holding the first section meeting. The question of priority between Ohio and Kansas is less clear, and, happily, not our concern. There is plenty of glory to go around – when the *Monthly*, and later, the MAA were formed, Missourians Finkel and Hedrick, were among the leaders; Slaughter, from Illinois, was probably the main mover in the formation of the MAA; the 1915 organization meeting was held in Ohio; and so on. The remark of Dizzy Dean, the Hall-of-Fame pitcher for the St. Louis Cardinals, seems appropriate here. When once asked if he had been the greatest pitcher in baseball, Diz is said to have replied, “I may not have been the greatest pitcher ever, but I was amongst ‘em.” When the MAA began, Missourians were not only “amongst ‘em” at every stage, but also often out front in a leadership role.

4. Missouri Section meetings through 1930

The first meeting of the Missouri Section of the MAA was at Central High School in St. Louis on November 18, 1916 [9]. Except for 1918, when there was no meeting because of World War I, the section met in November or December each year through 1930. Then, from 1931 through 1936, there is no record of any meetings, probably because of the Depression and lack of money for travel. Meetings were again held from 1937 through 1942, with the meetings now occurring in April, except for 1942, when the meeting, originally scheduled in April, was moved to December. There was another hiatus from 1943 through 1947 due to World War II. Then, in 1948, Missouri Section meetings resumed, were held in the spring, and have continued without interruption.

Each Missouri Section meeting from 1916 through 1930 was held in one of three cities – St. Louis (5), Columbia (2), or Kansas City (7). Most of these meetings were either concurrent or consecutive with meetings of other organizations. In 1925, the national MAA annual meeting was held in Kansas City, so this is being counted as the Missouri Section meeting for that year (note that the report of the 1926 Missouri Section meeting in the Monthly [15] is labeled “Tenth Annual Meeting of the Missouri Section” which accounts for the fact that the 1918 meeting was canceled but does count 1925). Here is the list of dates, places, and other organizations involved for Missouri Section meetings through 1930.

Date	Place	Other organizations
11/18/16	Central H.S., St. Louis	None
11/17/17	Public Library, Kansas City	Missouri State Teachers Association
12/29-30/19	St. Louis (a dinner was held at the American Hotel Annex the evening of the 30 th)	Chicago and Southwestern Sections of the AMS and Section A of the American Association for the Advancement of Science
11/13/20	The Junior College of Kansas City	None
11/25-26/21	Soldan H.S. and Washington University, St. Louis	Southwestern Section of AMS
11/18/22	The Junior College of Kansas City	Missouri State Teachers Association
11/30-12/1/23	University of Missouri, Columbia	Southwestern Section of AMS
11/15/24	The Junior College of Kansas City	Missouri State Teachers Association
12/30-31/25	The Junior College of Kansas City	With 10 th annual meeting of MAA
11/13/26	The Junior College of Kansas City	None
11/25-26/27	Washington University, St. Louis	Southwestern Section of AMS
11/17/28	The Junior College of Kansas City	Missouri State Teachers Association

11/16/29	Washington University, St. Louis	None
11/28/30	University of Missouri, Columbia	AMS

Washington University and the University of Missouri are, of course, still with us, but the Junior College of Kansas City, an active institution in the Missouri Section in the early years, does not exist under that name today. In 1915, Kansas City Polytechnic Institute was established, and in 1919 became The Junior College of Kansas City. The Junior College continued to expand until 1964, when the Kansas City School District combined with seven suburban districts to create the Metropolitan Community Colleges District. Today, the MCC has five campuses spread across four counties in the Kansas City area: Longview, Maple Woods, Penn Valley, Blue River, and the Business & Technology College. These institutions can properly be considered direct descendants of the Junior College of Kansas City and the Kansas City Polytechnic Institute.

5. Lean years and war years

In the report [16] on the 1930 meeting is the statement: “It was decided to hold the 1931 meeting at Washington University, St. Louis, at the time of the meeting of the Missouri State Teachers Association in November.” No record of this meeting exists in the *Monthly*, however. In fact, there is no record of any Missouri Section meeting for the years 1931-36. During the time of the Great Depression money and time for such extravagances as mathematics meetings was apparently not a priority, and maybe not even a possibility, for colleges in Missouri. A small indication of the hard financial times can be inferred from the list of institutional members of the MAA. In 1929-30, six Missouri colleges were MAA institutional members, but by 1935-36 this list was down to two, the Missouri School of Mines and Metallurgy in Rolla and Washington University, and those two remained the only Missouri institutional members through 1944.

MAA activity in Missouri was not completely absent during the early to mid 1930s, however. The twentieth annual meeting of the MAA was held in St. Louis on December 30-31, 1935. This meeting was held jointly with the American Association for the Advancement of Science, the American Mathematical Society and the National Council of Teachers of Mathematics. The meeting sessions took place at St. Louis University, and the chair of the MAA Program Committee for the meeting was W. H. Roever of Washington University. Because of the gap in Missouri Section meetings from 1931-34, it seemed reasonable that this should not count as a Missouri Section meeting as the 1925 meeting in Kansas City did.

On April 23-24, 1937, the Missouri Section again met at Washington University, jointly with the Mathematics and Astronomy Sections of the Missouri Academy of Sciences and the Astronomy Section of the Academy of Sciences of St. Louis [17]. Ten papers “of a mathematical nature” were presented at that meeting, half by people from WU. This was the first section meeting held in the spring, a practice which has been maintained with only one exception ever since. In [17], no mention was made of officers of the Missouri MAA Section, but it was stated that Professor G.E. Wahlin (UMC) was elected chairman of the Mathematics Section of the Missouri Academy of Sciences for the next year.

On April 23, 1938, there might have been a meeting in Rolla, but no details except the *Monthly*'s announcement of the place and date [18] have been found. If this meeting did take place, it was the first meeting of the section to be held anywhere except St. Louis, Kansas City, or Columbia, and thus marked the beginning of broader participation from institutions throughout Missouri. Broader participation continued – in April 1939, the meeting was at Drury College in Springfield, and in April 1940, it was at Central Missouri State Teachers College in Warrensburg, in conjunction with the annual meeting of the Missouri Academy of Sciences, before returning to Columbia and Kansas City in 1941 and 1942. The 1942 meeting in Kansas City, in conjunction with the meeting of the Missouri State Teachers Association, was originally scheduled for April 17, but was moved to December 4, possibly to accommodate the MSTA.

Even though the locations of the section meeting began to include new cities and towns, the participation in the section was still led by people from St. Louis, Kansas City, and Columbia, with a few notable exceptions such as Finkel (Drury), R.J. Michel (Cape Girardeau State Teachers College), and J.H. Butchart (William Woods in Fulton). Also, participation in the “big three” cities had spread to include Rockhurst in Kansas City, Saint Louis University, and the University of Kansas City (now University of Missouri-Kansas City).

There is no record of any meetings during the period 1943-47. Indeed, the 1945 national summer meeting of the MAA had to be canceled [19] because, “The Office of Defense Transportation has refused permission for our previously announced meeting at Montreal, June 23-25, 1945.” The Office of Defense Transportation was established by executive order of President Franklin Roosevelt in December of 1941. The MAA was not singled out - this agency also banned auto racing during World War II and in 1945 refused to grant the Detroit Tigers permission to detour 62 miles to play a special inter-league game in Pittsburgh during the All-Star Break (the All-Star Game had already been canceled that year).

The delay of the 1942 Missouri Section meeting by eight months probably made April of 1943 too soon for the next meeting. In addition, the section secretary, W.E. Ferguson (MU), was very likely in the Navy – the List of Officers and Members in the December 1945 *Monthly* lists him at that time as an Ensign in the U.S. Naval Reserve. The section chair was R.R. Middlemiss, who was not a member of the Washington University Pure Mathematics Department, to which all of “the usual suspects” active in MAA from WU belonged, but was in the other mathematics department in the School of Engineering. This might have also had an effect on getting another meeting organized after 1942. During the peak years of World War II, college enrollments dropped nationwide, often drastically, but immediately after the war, returning servicemen taking advantage of the GI Bill caused college enrollments to skyrocket. Coping with these two extremes in a very short period of time gave colleges and college mathematics faculty precious little time to think about getting the Missouri MAA section meetings started again.

In the 1940s, the MAA lost two of its founding members who had strong ties to Missouri. E.R. Hedrick died at the age of 66 on February 3, 1943. He had left the University of Missouri in 1924 to accept the position of Professor and Head of the Department of Mathematics at UCLA, where he later became Provost before retirement in 1942. His obituary appears in the *Monthly* [20]. Then, on February 5, 1947, B.F. Finkel died at the age of 81. His early career in Missouri is described earlier in this history, and he retired from Drury College in 1937, having been a member of the faculty there since 1895. After retirement, he worked on a history of American mathematical journals, which was published in nineteen installments [21] in 1940-1942. In 1944, he taught classes for the army at the University of Missouri. Finkel’s obituary is also in the *Monthly*, of course [22].

6. Revival and growth after World War II

Meetings of the Missouri Section began again in 1948, when the meeting was held at the University of Kansas City on April 23; Prof. J.S. Rosen of UKC arranged the program of twelve talks. Since then, meetings have been held every year in the spring. From 1948 through 2015, 68 Missouri Section meetings have been held at 22 institutions in 16 cities.

Institution	City	Year(s)
University of Kansas City/ University of Missouri Kansas City	Kansas City	1948, 1955, 1979
University of Missouri Columbia	Columbia	1949, 54, 58, 61, 64, 65, 89, 2006
Washington University	St. Louis	1950, 1988, 2003
Central College	Fayette	1951
Lindenwood College	St. Charles	1952, 1959, 1968
William Jewell College	Liberty	1953
Fontbonne College	St. Louis	1956
Southeast Mo. State College/Univ.	Cape Girardeau	1957, 1973, 1984, 1996, 2004
Central Missouri State College/ University/University of Central Missouri	Warrensburg	1960, 70, 78, 85, 95, 2000, 2010
Missouri School of Mines and Metallurgy/ University of Missouri Rolla/ Mo. University of Science and Technology	Rolla	1962, 66, 74, 82, 91, 2001, 2015
Southwest Missouri State College/ University/Missouri State University	Springfield	1963, 1976, 1986, 1998, 2008
Northeast Missouri State College/ University/Truman State University	Kirksville	1967, 1987, 2002, 2009
St. Louis University	St. Louis	1969, 2014
Missouri Southern State College	Joplin	1971, 1994
Stephens College	Columbia	1972
Missouri Western State College	St. Joseph	1975, 1983, 1997, 2005
University of Missouri St. Louis	St. Louis	1977, 2012

Westminster College	Fulton	1980, 1993
Northwest Missouri State College/ University	Maryville	1981, 1992, 2013
College/University of the Ozarks	Point Lookout	1990, 2007
Rockhurst College/University	Kansas City	1999
Columbia College	Columbia	2011

The wide participation necessary for a healthy section is evident in this list, representing a variety of institutions – large, small, public, private, doctoral, master’s, and four-year – from all geographic regions of the state. Note that some institution names have changed over time. In this history, when an institution is mentioned in connection with a specific event or time period, the name of the institution at the given time is used.

Today, the sites of the section meetings are known several years in advance, but this has not always been the case. Correspondence and other records from the 1950s and 1960s indicate that the site and date for the next meeting was usually set only a year in advance, often at the current meeting. Sometimes the site was determined a year ahead but exact date was set even later. In the late 1960s and early 1970s, sites for the section meetings began to be set two or three years in advance. Many of the section meetings during this time were held jointly with meetings of the Missouri Council of Teachers of Mathematics.

Beginning in 1952-1953 there were two secretaries for the section, a Local Secretary who presumably handled correspondence and other details pertaining to the section meetings, and an Associate (or Association) Secretary, who was the person who dealt with the national MAA. Margaret F. Willerding of Harris Teachers College in St. Louis was elected Associate/Association Secretary in 1952. She had previously been Secretary-Treasurer of the Section in 1950 and 1951. In 1956, she was re-elected Association Secretary for a period of another five years [23]. However, when Willerding left Harris Teachers College for a position at San Diego State in fall 1956, the position of Association Secretary was not re-filled.

At the 1954 meeting at UMC the section voted that the Section Governor should be a member of the Executive Committee, a policy that continues to the present time. In 1955, there was an amusing story associated with the election of officers. Sister M. Pachomia, from The College of St. Teresa (now Avila University) in Kansas City, was the section Secretary-Treasurer, and needed to form a nominating committee for the elections of the section governor and the section officers. In March, she asked R.J. Michel, the outgoing governor, for advice on who should be on this nominating committee, and between them they settled on C.V. Fronabarger (SMS), L.O. Jones (Wm. Jewell), and W.R. Utz (UMC), all active members of the section. Each of these accepted the job, and each also asked which one of them was to be chair of the committee. Apparently, the letter asking them to serve was personalized to each one, and the phrase “We are asking Professor X and Professor Y to act on this committee with you,” caused each recipient to think maybe they were being asked to be the chair. Sister Pachomia neatly solved this problem by asking the nominating committee to choose its own chair, but the committee responded by deciding to operate without a chair. Professor Utz commented that he was eager to see how this would work. The work did get done, but not before a letter was sent in May to the nominating

committee from the national MAA Secretary asking where the nominations were and when they would be ready.

In the fall of 1966, a request was received from Kenneth May, University of Toronto, who was Chairman of the Committee on the MAA History, soliciting a history of the section for the MAA's fiftieth anniversary volume. The plan was to base a chapter on the material supplied by the sections. When that publication, [24], came out the write-ups on the sections were condensed, with few sections getting more than a page or two. See pages 84 and 85 of [24] for Missouri. Note, for what it is worth, that the sections are presented in (supposed) chronological order, with Missouri listed second, after Ohio and before Kansas. The committee appointed to prepare the contribution of the Missouri Section was Paul Burcham (chair), Mary Cummings, and Nola Haynes. At the 1967 section meeting, Burcham reported that his committee was having difficulty gathering material for the section history; enough was eventually collected to send in a report, but the report itself has not been found.

The invited speaker at the 1968 section meeting at Lindenwood was Fred Wright from Tulane in New Orleans. He traveled to and from Missouri by train. This was the last known time a speaker from out-of-state (or in-state for that matter) traveled by train to a Missouri Section meeting. Note that 1968 was shortly before 1970, when the Rail Passenger Service Act created Amtrak.

At the Meeting of Section Officers during the 1969 Summer Meetings, Association Secretary Henry Alder led a discussion on "How One Can Organize a Good Section Meeting." Alder presented 16 suggestions, and several more were brought up by the participants during the discussion. This became the basis for a chapter in the MAA's *Guidelines for Sections* pamphlet, which came out two or three years later. Keith Stumpff (CMS) was chair of the Missouri Section that year and attended the 1969 Meeting of Section Officers. One of the points made during the discussion of section meetings was the idea that meetings extending over two days attract much larger audiences and increase informal contacts between members of the section than meetings concentrated entirely on one day. Stumpff must have believed this was something the Missouri Section should consider and he probably discussed the idea with the officers and others active in the section, especially the secretary-treasurer, Charles Kelly, who was also at CMS, and with Troy Hicks (UMR). At the 1970 Missouri Section Business Meeting, Hicks suggested that we think about dividing the meeting into two parts, an evening session plus an all-day session, according to the minutes of that meeting. In Hicks' biographical sketch accompanying the ballot for the Meritorious Service Award in the March 1987 Section Newsletter, he is credited with being the "principal advocate" for changing to a two-day meeting – Stumpff and Kelley were probably equally involved, but they didn't get their names in the Minutes! The new section chair and the new secretary-treasurer for 1970-71 were Rochelle Boehning and Jack Jolly, from Missouri Southern in Joplin; they were naturally involved in planning the 1971 meeting to be held in Joplin. This meeting became the first Friday-Saturday Missouri Section Meeting and began the tradition, which continues, of including a banquet on Friday evening. The decision to change to a two-day meeting was not done without seeking input from the section as a whole. In late May of 1970 Boehning sent a preliminary announcement of the 1971 meeting to Missouri Section departments saying the dates were tentatively April 30 and May 1, 1971, and requesting input about "the feelings of your colleagues on a two-day meeting." We have a record of the response from CMS, which was 5-3 in favor. The Section has held Friday-Saturday meetings ever since, and in the 1990s the time frame has been extended to include Thursday evening and Friday morning with the addition of the Missouri Collegiate Mathematics Competition and, later, the Missouri NExT Program.

At the Meeting of Section Officers during the 1970 Summer Meetings, MAA Secretary Alder again led a discussion, this time on "How to Organize a Section for Maximum Effectiveness." This was the basis

for another chapter of the *Guidelines for Sections* pamphlet. Among the guidelines were: the Section Chair should not serve for just one year, and the Secretary-Treasurer should have a three year term. Regarding the Chair, the suggestion was that the person serve one year as Chair-Elect followed by two years as Chair and then a fourth year as Immediate Past Chair. In Missouri, we didn't follow this suggestion exactly, but in 1971 did begin our current practice of treating the position of Vice-Chair as the Chair-Elect. By 1974, the position of Past Chair was in place, giving the section Chair a three-year term on the Executive Committee. These changes were formalized when amendments to the Missouri Section by-laws adding the immediate past Chair to the Executive Committee, naming the Vice-Chair to be Chair-Elect, and setting the Secretary-Treasurer term at three years were approved at the 1972 meeting.

In 1978 there began to be meetings of MAA departmental liaisons and department chairs during the Section Meeting. The department chairs' meeting was at breakfast on Saturday and the liaisons met during the coffee break Saturday morning. Later, the liaisons' meeting also became a Saturday morning breakfast, and now the two groups meet together at breakfast.

Up to 1985, an important resource for information about the meetings, officers, and basic activities of the Missouri Section has been the *Monthly*, which printed reports of nearly all the meetings of the MAA sections from the first ones in 1916 through 1985. After 1985, section meeting reports were no longer published in the *Monthly*. This decision was made when Paul Halmos was editor of the *Monthly* (1982-1986). Halmos has been a wonderful benefactor to the MAA in many ways, but that particular decision made things harder for section historians. Note that Halmos spoke at the 1984 Missouri Section Meeting – surely, he didn't get the idea from any of us! Fortunately, by 1985, another good source for section news and activities had been established. At the 1979 section meeting a motion was passed that the Missouri Section initiate a newsletter. The first Editor was Elizabeth Berman from University of Missouri-Kansas City and Vol. 1 No. 1 of the *Newsletter of the Missouri Section Mathematical Association of America* came out in November 1979. In 1982, the section voted to amend the by-laws to add the Newsletter Editor to the Executive Committee. An archive of Missouri Section newsletters, beginning in 1995, but soon to be completed as a by-product of this history, is maintained on the Missouri Section webpage, <http://sections.maa.org/missouri/newsletters.html>.

The Missouri MAA Section's web page was established around 1995 by Curtis Cooper. Other web page administrators have been Leon Hall, Keith Brandt, and Scott Thatcher, the current administrator. The web page has become an important source of information for section members, and electronic distribution of the newsletter, electronic registration for section meetings, and the like have become the norm. We do not yet have a Facebook page, however. Or a Twitter account.

The Missouri MAA Section has by-laws dating back to 1959, and the most recent revision of the by-laws was in 2011, an effort led by Susan Callahan (Cotter). Copies of some of the Missouri Section by-laws are in Appendix L. Note that by 1993, the Coordinator of Student Chapters had been added to the Executive Committee, and by 2011, the Web Page Administrator and the Liaison Coordinator were also added to the officers list.

7. Notable events and programs

The Gauss Meeting. The 1952 Missouri Section meeting at Lindenwood College in St. Charles was a memorable one. At this meeting, a special tribute was made in honor of Karl Friedrich Gauss, and members of Gauss' family who were then living in St. Charles were introduced at the meeting. The Gauss family members who attended the meeting were Matthew Johns Gauss and his sister Miss Virginia Gauss, plus M.J. Gauss' wife Mary and their son David. Matthew and Virginia Gauss were great-grandchildren of K.F. Gauss. David Gauss was 15 at the time, and he later attended Westminster College in Fulton, graduating in 1958. Two of K.F. Gauss' sons, Eugene and Wilhelm, immigrated to America in 1830 and 1837, respectively, and both eventually settled in the St. Charles/St. Louis area. Wilhelm was married in Germany before coming to America, and with his bride moved more or less directly to St. Charles, but Eugene came to America as a single man and had experiences in many parts of the US, including a stretch in the US Army, before settling down in St. Charles and marrying an American woman, Henrietta Fawcett. Between them, these two sons provided K.F. Gauss with 17 grandchildren, none of whom he ever saw in person. Matthew and Virginia Gauss were descendants through Eugene Gauss. Their father, Charles Henry Gauss, was Eugene and Henrietta's oldest child. Charles Henry Gauss graduated from Washington University in 1864 and then studied engineering at Yale. At the section meeting, the first paper presented was "Gauss and Gottingen," by Professor Herman Betz, University of Missouri, and the last thing on the program was "A Tribute to Karl Friedrich Gauss and a presentation of the members of the Gauss family residing in St. Charles, Missouri," by Professor S.A.E. Betz, Department of English, Lindenwood College. In addition, there was a display of some of Gauss' medals and other possessions. The two professors Betz involved in this meeting, as far as can be determined, were not closely, if at all, related, having at most some degree of cousin-ship. It is not clear whether they even knew each other before the meeting. Both were first-generation Americans whose parents had emigrated from Germany in the late 1800s and early 1900s. Because he was a resident of St. Charles, it is probable that S.A.E. Betz personally knew some of the members of the Gauss family who also lived there. Section records include a copy of a letter dated May 13, 1952, from Louise Beasley (Lindenwood), who was the outgoing secretary-treasurer at the 1952 meeting, to Nola Haynes (UMC), who was the incoming secretary-treasurer. In this letter, Beasley reports that she has received a letter from M.J. Gauss expressing his appreciation, and she copies this letter in its entirety, along with another letter from Prof. F.F. Helton (Central College), who also wrote to her to praise the section meeting. Efforts to unearth the original letter from M.J. Gauss have been unsuccessful so far, but we do have his words. More information about K.F. Gauss' descendants in the United States is in [25] and [26].

The High School Mathematics Contest. The beginning of the section's involvement with the High School Mathematics Contest in Missouri was in 1958, when the Committee on High School Contests recommended that the Missouri Section initiate and conduct the MAA High School Mathematics Contests in Missouri high schools in 1959. It was moved and passed to do this. In the minutes of the 1960 section meeting the High School Contest received more extensive coverage. Richard Spreckelmeyer was finishing a second two-year term as chairman of the Committee on the High School Mathematics Contest, and provided a detailed two-page report to the section. From that report, we learn that the contest existed but was not locally conducted prior to 1959, and that in 1957 20 schools and 718 students participated, increasing to 54 schools and about 1300 students in 1958. By 1960, the participation was up to about 100 schools and 3000 students. The report noted "a growing pressure to conduct the contest on a Saturday to reduce the encroachment of school time," and went on to recommend that securing an established weekend time for the contest would be wise, because high school principals were getting a lot of requests from many groups requiring school time and might simply decide to reject all such requests. The idea was that if MAA was first in establishing a traditional

weekend for the contest other groups would have to work around our date rather than vice-versa. This project has stood the test of time - the section still sponsors and directs the MAA American Mathematics Competitions (as they are now called) in Missouri. A list of the Missouri state coordinators of the High School Mathematics Contest/MAA American Mathematics Competitions (AMC) is in Appendix I.

Originally, the chair/coordinator was a two-year appointment and was supposed to alternate between someone from the St. Louis area and someone from the Kansas City area. At the 1964 Missouri Section Meeting, a motion was made (and passed) to extend the term to three years. Section records do not mention the High School Contest during 1965-68, when Mrs. Orahoad was chair, but the contest resurfaces in the Missouri Section during the tenure of Helen Barrett, from Mehlville High School. Starting with Barrett's term, things began to change. First, she served four years instead of three; second, the St. Louis – Kansas City alternating pattern was broken when her successor was Kenneth Hirschel, also from the St. Louis area; and third, Hirschel's successor, Alvin Tinsley, from Warrensburg, coordinated/directed the Missouri AMC for over twenty years. His successor, Shing So, also from Warrensburg, is well on his way to equaling or even surpassing that record. Barrett also convinced the section to begin the practice of awarding cash prizes to the top four to five students on the state, something still being done.

From 1987-2005, Missouri also had a state coordinator for the American Junior High School Mathematics Examination. This position disappeared in 2005 when the national AMC office combined and centralized the coordination of the junior high exam and the high school exam.

Placement Testing. Another section activity in the early 1960s was the development of a statewide Advanced Placement Examination in Mathematics. At the 1960 meeting, Professor Paul Burcham (UMC) initiated discussion of this topic, and the following motion was passed: "The Missouri Section of the Mathematical Association of America [shall] appoint a committee to investigate the formulation and administration of a test for placement and/or credit." Some of the institutions in Missouri, including St. Louis University, Washington University, and the University of Missouri, were already doing this on their own, and the involvement of the Missouri MAA was aimed at standardizing these tests and making them available statewide. The chair of the committee was John J. Andrews (SLU) and the committee got right to work. In November, a letter was sent to Mathematics Departments in Missouri requesting a list of topics in College Algebra and Trigonometry believed to be prerequisites for Analytic Geometry and Calculus. At the same time, another letter was sent to the colleges and universities describing the project and asking if the institution was willing to serve as an exam site for the test, to be given May 6, 1961 and restricted to high school seniors. Then, in February 1961 another letter was sent giving the results of the topics survey along with the committee's decision on which topics would be included on the exam, plus a questionnaire asking whether the institution would serve as a testing site and what use they planned to make of the results for students attending their school. In this letter the description of the exam was: "The examination is not to be a comprehensive examination of all recommended high school mathematics but rather criteria for determining the advisability for students to enter Analytic Geometry and Calculus without further training in Algebra and Trigonometry." At the 1961 Missouri Section meeting in Columbia on April 22, the minutes report that a motion was made and carried to continue to administer the advanced placement examinations in algebra and trigonometry for another year, and that "Professor Andrews made some interesting remarks on the interest shown in the advanced placement test this year. He asked for comments and suggestions on the topics, which should be included in [the comments]. A discussion followed on what should be the core of a high school mathematics course. The consensus of opinion was that the high schools should be notified well in advance of giving any questions on the so-called more modern topics." It is interesting that suggestions on topics were being solicited only two weeks before the exam was to be administered!

At the 1962 section meeting, a report from the MAA Advanced Placement Examination Committee was received in which the committee recommended that the examination program be discontinued as an MAA project, mainly because about 80% of the students taking the exam were from the greater St. Louis area, and so the desired goal of statewide coverage was not being met. However, in a vote at the 1962 Business Meeting it was decided to continue the program for another year. In the Minutes of the 1964 Business Meeting, Andrews is again quoted as expressing “doubt as to the wisdom continuing the Test as it is now given,” and there was discussion about replacing the exam with one in analytic geometry. It was voted that “what to do about the test be left in the hands of the new officers, but that they be asked to consider a test in analytic geometry.” At the 1966 section meeting, Andrews reported that he had sent a letter to 49 colleges in the state saying that he recommended that an algebra and trigonometry and an analytic geometry examination be given in about 800 high schools throughout the state, and that in response to this request plans had been made to give the tests – 3021 in algebra and trigonometry and 1431 in analytic geometry. A motion to continue the examinations was made and carried. Then Burcham (who, interestingly, made the previous motion) reported on a University of Missouri testing program for entering freshmen to be used for sectioning students in algebra and trigonometry and advanced placement credit. This test was going to be given for the first time in the fall of 1966. Apparently, the MAA exams either were not deemed suitable for placement at the University of Missouri, or (more likely) were not taken by all incoming UM students. At the 1968 section meeting, Andrews reported that over 3000 Algebra-Trigonometry and over 1000 Analytical Geometry Advanced Placement Examinations were sent to 127 Missouri high schools this year. He further noted that the algebra-trigonometry exam competes with the corresponding exam of the Missouri Cooperative Testing Program (presumably, this is the exam mentioned above for entering freshmen set up by the University of Missouri). It was also pointed out that the University of Missouri-Columbia is the only institution with a calculus course separate from analytical geometry and that UMC was the only institution using the analytical geometry exam. Burcham then moved that the Missouri MAA Section discontinue its testing program; the motion was seconded and passed unanimously, bringing this section project to an end.

The section’s focus on placement testing in the 1960s should not be considered a failed effort, though. The Missouri Mathematics Placement Test (MMPT) in algebra is still used as a placement tool at Missouri University of Science and Technology and for engineering students at the University of Missouri Columbia. At Missouri S&T a placement exam in trigonometry (developed locally in the 1970s) is also given. The MMPT and the Missouri S&T Trigonometry Exam are both descendants of the Missouri Cooperative Testing Program Exam and, to the extent that the Missouri MAA Advanced Placement Examination project influenced the Missouri Cooperative Testing Program, can thus be considered continuing results of the section’s placement test work 50 years ago.

Symposium on the Role of Mathematics in Industry. For the 1972 section meeting, the Chair, Charles J. Stuth from Stephens College in Columbia, submitted a proposal to the MAA Fund for Aid to Sections to make the theme of the section meeting the role of mathematics in industry. The proposal was submitted jointly by the Missouri Section and the University of Missouri Columbia. The funding for \$300 was approved, and the official theme for the meeting was “The Role of Mathematics in Industry and Educational Implications.” On Thursday afternoon, May 4, 1972, “initial lectures” were given at UMC by W.L. Jameson, Spectra Associates, Inc., and by George P. Steck, Sandia Corporation. Then at the Missouri Section Meeting on Friday Steck and Jameson spoke again, giving different lectures than on Thursday, and Yudell L. Luke, UMKC, formerly of Midwest Research Institute, spoke on Saturday. In his report on the meeting to MAA Executive Director A.B. Willcox, Troy Hicks,

Missouri Section Secretary-Treasurer, said, “The talks were excellent but the attendance was not as good as we had expected.”

The High School Visiting Lecturer Program. In 1972, the Executive Committee of the section decided to begin a Visiting Lecturer Program to High Schools in response to the national MAA’s encouragement that sections do this. Unfortunately, the national MAA could not provide any funding for such projects. In Missouri, it was hoped that the institutions from which the speakers came would provide travel funds for the high school visits, and expenses of printing and mailing materials to high schools came from the High School Contest revenue. National MAA did provide some good advice, though. In one document that discussed how to choose the lecturers, there was the statement: “... avoid a prospective lecturer who has some overdeveloped and mathematically unrepresentative hobby or fixation.” The proposal was presented to the membership at the 1973 Section Meeting and was approved. The first Visiting Mathematics Lecturer Program for Missouri High Schools committee chair was Charles J. Stuth from Stephens College in Columbia. Other members of the committee were Kenneth Hirschel (then the Missouri coordinator for the MAA High School Mathematics Contest), and William C. Smith from the UMKC School of Education. Some reservations about the value of establishing the Visiting Lecturer program came from Hirschel, and also from Helen Barrett, the previous Missouri coordinator for the High School Contest, possibly because of the proposed use of contest funds, but the section chair, Ed Andalaft (UMSL), and the Executive Committee felt that the action of the membership at the 1973 Section Meeting approving the establishment of this program committed the section to its implementation. Under Stuth’s leadership, the program got started, and for calendar year 1974 there were 29 requests from high schools, of which 21 were filled using 18 different people out of a total of 37 (from 16 institutions) who were willing to participate. Andalaft became chairman for this program in 1975 and participation grew. In the 1977-78 academic year 35 high school visits were made by 22 speakers out of 41 available from 17 institutions. Leonard Palmer (SEMO) became chairman in 1978, and he reported 40 visits to high schools at the 1980 section meeting. However, by 1982 this number was down to 24 visits. Robert Kennedy (CMS) became chairman in 1983, continuing in the position for sixteen years, followed by Rhonda McKee (CMS) in 1999. In the mid-90s, lecturer requests were in the low 20s, but by the turn of the century had dropped to single digits. The high schools were showing much less interest in the program, probably due in part to increased emphasis on standardized testing in mathematics as well as other core subjects in the high schools. The program was discontinued in 2005 at the request of McKee. It had a good run of over 30 years.

Missouri MAA vs. DESE. (The letters and documents mentioned in this section are in Missouri MAA records and are reproduced in Appendix K.) In late April to early May of 1982, the Missouri Department of Elementary and Secondary Education (DESE), in an effort to alleviate the mathematics teacher shortage in the state, announced a plan under which teachers who attended a 1982 Summer Math Institute for 9-12 hours of credit would become certified to teach math at the junior high level. The program appeared to be hastily planned. The Missouri State Board of Education approved the plan April 19, 1982, universities were told of the plan on April 28, potential host institutions for the institutes were to submit their proposals by May 7, and teachers who wanted to participate also had a May 7 deadline for getting their credentials in. Several Missouri MAA members, including Section Governor Troy Hicks (UMR), Secretary-Treasurer Jerry Wilkerson (MWS), Chair Ken Lee (MWS), and Ed and Shirley Huffman (SMS), to name a few, upon learning about the program and the proposed institute courses (as described in a letter from DESE to school administrators, not as described by the host campuses – institute sites had not been chosen yet) were quite concerned that the proposed courses were neither appropriate nor adequate preparation for junior high mathematics teachers, not to mention the lack of consultation about the proposal with college and university mathematics educators in Missouri.

Commissioner of Education Arthur Mallory got a number of letters and calls, not only from MAA members, expressing these and other concerns and agreed to meet with 30 or more educators from area colleges and public schools in Springfield on May 11 (at 7:00 AM!). He informed the group that proposal selection had been made the previous day, singled out the proposals from Northeast Missouri State and Southwest Missouri State as being strong (but he didn't say which proposals were selected), and assured the group that this was not a plan to get poorly qualified people permanently certified. The teachers completing the program would receive 2-year temporary certificates, and would have to meet the new 1984 certification requirements in order to become permanently certified. The Missouri MAA folks were certainly not against any plan to help address the shortage of mathematics teachers in Missouri, but did not believe the plan as described would allow the teachers to achieve the 1984 certification requirements. Some of these things along with others were contained in Mallory's May 10, 1982, response to Troy Hicks' letter. This response was cc'd to Glen Haddock (UMR), Ken Lee (MWS), Victor Gummersheimer (SEMO), Jerry Wilkerson (MWS), Ed Huffman (SMS), Shirley Hill (UMKC), Don Priest (Rolla Schools), and R.V. Wilson (Missouri Director of Teacher Education and Certification), so it can be assumed that, except for Wilson, these people, the first six active in the Missouri MAA, had also written to Mallory with similar concerns. The group present at the May 11 meeting with Mallory presented him with a list of nine questions to which they wanted written answers. There is no record of any answers ever being received. However, it must be noted that Mallory and other DESE officials were always prompt and courteous in responding in writing to letters from individuals and organizations.

Then, at the February 7, 1983, meeting of the Missouri Teacher Education and Certification Advisory Committee (TECAC) meeting, this group proposed a change in the 1984 state certification requirements for junior high mathematics teachers, replacing the 5 credit hour calculus requirement with a 3-5 credit hour calculus requirement. Also, the existing computer science requirement would then be changed from 1 hour to 1-3 hours. Having become aware of the interest of Missouri state mathematics professional organizations in this issue, R.V. Wilson, Missouri Director of Teacher Education and Certification, was asked to get in touch with some of these organizations to get comments. This communication did not reach everyone. Indeed, Shirley Huffman wrote to P.J. Newell, Assistant Commissioner of Education (with a cc to Mallory), on April 12, speaking against the elimination of the 5-hour calculus requirement. Huffman stated in her letter that she only recently become aware of the proposal from a friend outside her department at Southwest Missouri State and that her department as a whole had neither known about nor discussed the proposal. One can only imagine her reaction when Newell's reply of April 18 said that the idea of allowing the junior high mathematics requirement to be met with a 3-hour calculus course had been initiated by Huffman's department head, L.T. Schiflett, in a letter to Mallory back in November. The Missouri MAA Section meeting was April 22-23 in 1983, and at that meeting the section passed a resolution that requested: (1) a delay on the action to change the junior high certification requirements, (2) an exact copy of the content of the proposal, and (3) that "the MAA, MCTM, MAT² and other math organizations" be notified of proposals affecting mathematics education in Missouri "in a manner which would allow time for adequate study and response by the organizations." Jerry Wilkerson, outgoing Missouri MAA Secretary-Treasurer sent a copy of the resolution to the Missouri State Board of Education and TECAC, with copies to Mallory, Newell, Wilson, and Joan Collins (chair of the TECAC Subcommittee for Math 7-9 Certification Requirements). In a May 10 reply to David Bahnemann, the new Missouri MAA Secretary-Treasurer, TECAC agreed to postpone action until their September 26 meeting and asked for input by July. Earlier in this letter, however, it was indicated that input had already been received from MAT² and MCTM, plus Schiflett and another SMS faculty member, and that support or at least no strong opposition was expected from these sources. Nevertheless, in July 1983, the Missouri MAA drafted a letter to TECAC supporting the

original 5-hour calculus requirement. This letter must have been persuasive. In the Section President's column in the November 1983, Newsletter [27], Vic Gummersheimer reported that, "At this writing, unofficial indications are that the original 1984 guidelines will be implemented." This action by the section is an example of how we can be effective advocates for things we believe in if everyone works together.

The 5K Run/Walk. At the 1985 Missouri Section Meeting at Central Missouri State University in Warrensburg, the section held the first 5K run/walk early on the Saturday morning of the meeting. This event has become a traditional part of our section meetings ever since. The run/walk had to be scheduled early because of the Saturday morning breakfast(s) for department chairs and liaisons; some people usually participate in both events. The run/walk is not a highly competitive event, but it has become a popular social aspect of the section meetings. Interestingly, it began at Warrensburg and the ones who initiated this event, Al Tinsley and Curtis Cooper, were frequently the first two finishers. One year the race did become a little more competitive. At the 1991 meeting in Rolla, Stan Wagon from Macalester College gave the opening address, and he participated in the 5K run. Wagon was an ultra-marathon runner, so running 5K was barely a warm-up for him, and he started fast, quickly leaving the rest of the field behind. Another participant that year was Richard Friedlander from UMSL, who was also an accomplished runner. Friedlander couldn't run 50 miles or more, but he was fast at 5K, and seeing Wagon take off at the start aroused Friedlander's competitive spirit. He sped up and caught Wagon, they ran together for a while (this may have been the first time they had met), and then Friedlander pulled away to win the race. A mathematical product of Wagon and Friedlander meeting was Friedlander's paper [28] giving a baseball-oriented example of Simpson's paradox. He got the idea while talking with Wagon about a Simpson's paradox problem involving race times. This story would be even better if they had talked about Simpson's paradox during the race, but it happened later at the meeting. In the 1987 race, Harold Hager and Leon Hall were running together, got to visiting, and missed a turn on the course. By the time they got back on the correct route they estimated that they had run an extra half-mile or so, but still finished in a tie (intentional) for third – the field wasn't very competitive that year.



1987 Officers and Speakers: L-R: Roy Utz (banquet), Herbert Wilf (MAA), Joe Flowers (Chair), Curtis Cooper (Sec.-Treas.), Shirley Huffman (Past Chair) (*Mo. MAA photo*)

The Katti Family Speakers. Shrinivas K. Katti, a member of the Statistics Department at UMC, was active in the Missouri MAA section in the late 1980s and early 1990s; he was Chair of the section in 1988-89. Katti wanted to organize a good section meeting in 1989, so he scheduled an additional invited speaker and covered the expenses himself. For the next six years the Missouri Section was the beneficiary of Katti's continued generosity, with one speaker sponsored by the Katti family each year through an endowment fund Katti set up at UMC for a broader purpose: "... to develop excellence in the area of statistics and to promote scientific inquiry aimed toward the benefit of mankind." The Missouri MAA "Katti Family Speakers" were:

1989	W.A.J. Luxemburg	Caltech
1990	Joe Crosswhite	Northern Arizona

1991	Stan Wagon	Macalester College
1992	Phillip Rust	University of South Carolina
1993	Tony Starfield	University of Minnesota
1994	Ron Harrist	University of Texas at Houston
1995	Allen J. Schwenk	Western Michigan University

Katti took early retirement from UMC in 1995, but did not quit doing statistics. His attitude of “When you want to do something and it’s the right thing to do, get busy doing it and don’t worry about who will pay” resulted in benefits to the Missouri Section while he was active.

Outstanding Teaching and Banquet Speeches. When the MAA, under the leadership of Missouri Section member Deborah Tepper Haimo, established the Distinguished College or University Teaching of Mathematics Awards (the national awards now bear her name), the Missouri Section began selecting recipients for the Missouri Section award. The first of these was awarded in 1992 to August J. Garver of the University of Missouri–Rolla. A complete list of the Missouri Section winners is in Appendix B. Two recipients of the Missouri Section Award, T. Christine Stevens from St. Louis University in 1996 and Edward L. Spitznagel from Washington University in 2000, have been selected to receive the national Deborah and Franklin Tepper Haimo Award.

In 1999, the Missouri Section established the tradition of asking the Teaching Award winner from the previous year to give the banquet address at the next Section Meeting. The first person to do this was Robert Kennedy, Central Missouri State University, who received the award in 1998 and gave the banquet address at the 1999 Section Meeting. This has proved to be a very popular and successful part of our Section Meetings; a member of the section has a prominent role in the meeting each year, and the meeting organizers have one less speaker to find.

The Missouri Collegiate Mathematics Contest. At the 1995 Missouri Section Business Meeting, the section approved the establishment of the Missouri Collegiate Mathematics Competition (MCMC) for students, which began at the 1996 Section Meeting at Southeast Missouri State University in Cape Girardeau. The MCMC is held on Thursday evening and Friday morning immediately preceding the Section Meeting. Any college or university in Missouri may send up to two teams of 1-3 undergraduate students each to the competition. We have since allowed more than two teams from one institution to participate, but the third and subsequent teams are “unofficial” and not eligible for any awards. The format of the competition is two sessions of 2.5 hours each in which the teams attempt to solve challenging mathematical problems comparable to but not quite as difficult as the Putnam Exam problems. There are five problems in each session, and, as indicated, each team works on the problems together submitting one solution per team. The force behind the MCMC was Curtis Cooper of Central Missouri State University, and the rest of the initial



2004 MCMC, Cape Girardeau (photo by Hang Chen)

MCMC Committee consisted of Mango Ahuja (SEMO), Joe Flowers (Truman), Leon Hall (UMR), Les Reid (SMS), and Alvin Tinsley (CMS). Part of the registration fee for the MCMC is used to provide student participants a free ticket to the Friday evening banquet, where the results are announced, and

where all student participants are recognized. Beginning with 16 teams from 11 institutions in 1996, and weathering the April snowstorm at St. Joseph in 1997 and the tornado warning at Columbia in 2006 (we had to stop and go to the basement for about an hour), the MCMC has grown to an annual participation of 30-40 teams involving over 100 students. The MCMC is now an established and vibrant part of the Missouri Section Meetings. A list of the winning teams is in Appendix F.

Electronic Proceedings of the Missouri MAA. At the 2004 section meeting, Jeff Poet and Kevin Anderson, from Missouri Western State, proposed to serve as editors of an online Electronic Proceedings of the Missouri MAA. Their proposal was approved, and the electronic proceedings began with papers from the 2005 section meeting. This was not intended to be either a substitute for or an equivalent to publishing in an established refereed mathematics journal. Items published elsewhere were not posted and if an item in the electronic proceedings was subsequently published elsewhere, that item would be either removed or listed as a citation only. The goals of the electronic proceedings site were to foster communication between Missouri MAA members, provide a way for presentations at the section meetings to be put into a publically accessible form, and to give student presenters an opportunity to have their written work available in a publically accessible form. The electronic proceedings were published online through 2009, but have been discontinued due to lack of contributions. This unique Missouri Section project deserves to be resurrected.

Missouri NExT. Missouri Section NExT, a section program for new or recent faculty in the mathematical sciences modeled on the highly successful national Project NExT (co-founded by Missouri Section member Christine Stevens of SLU), began to take shape in 2006 with discussions between Mary Shepherd (NWMS) and Tim Ray (SEMO). Progress was slowed a little by Ray's sabbatical in 2006-07, but by 2008, the program was set up and Missouri NExT Fellows first met at the section meeting that year under the leadership of Mary Shepherd. Missouri NExT initially conducted a Friday morning session before the regular section meeting, giving the Fellows a chance to interact and attend sessions dealing with various aspects of the mathematics profession. Activities have since expanded to include a social event on Thursday evening and a fall meeting and dinner in conjunction with the annual October Kansas City Regional Mathematics Technology Expo. Between meetings, fellows stay in touch with each other and distinguished mathematics teachers in the section throughout the year both electronically and in person. Topics have included methods of teaching, classroom use of technology and writing, effective assessment and evaluation, mathematics resources on the web, applying for grants, tenure and promotion, balancing teaching and research, and doing all this without completely sacrificing one's personal life. Meeting formats have evolved to now include more hands-on workshops and focused discussions, and Missouri NExT have recently paired Fellows with mentors. Beginning with the 2011 meeting, the Missouri NExT Program was led by Zdenka Guadarrama (Rockhurst) and Gavin Waters (MWS). Waters was an early Missouri Section NExT Fellow in 2009. For 2014-15 the leaders are Samuel Chamberlin (Park U.) and Azadeh Rafizadeh (Wm. Jewell).

The 2013 Joint Section Meeting. After the summer 2010 Board of Governors meeting in Pittsburgh, the MAA Committee on Sections, chaired by Rick Gillman, asked the governors of the Iowa, Kansas, Missouri, and Nebraska/SE South Dakota sections to meet in order to discuss the idea of a merger of these four sections. The other three sections are among the smallest MAA sections, by number of members, and the Committee on Sections was looking into merging smaller sections. After this meeting, depending on their perspective, the reports of the participants varied a little. Gillman thought [29], "No one was vigorously opposed to the idea, but no one was quite convinced either." Yungchen Cheng, the Missouri Section Governor, reported [30], "None of the four governors was enthusiastic about the idea, but we also felt the sections should have a chance to discuss further and make their own decision." The main result of the Pittsburgh meeting was that a meeting was set up for November 6,

2010, in Kansas City at Rockhurst University for people from all four sections and Gillman to further discuss this idea. Also attending the Kansas City meeting was David Stone, from the Southeastern Section (composed of the states of Alabama, Mississippi, North and South Carolina, and Tennessee) to provide insight on how a multi-state section can work. It was made clear from the beginning that no section would be forced to do anything by the national office. As an attendee at the Kansas City meeting, this writer came away with the opinion that if the sections merged, the new section might be stronger in the sense of being able to provide better meeting programs with more attendance than any of the four individual sections, including ours, now do, but that, mainly because of the longer travel distances and the possible resulting marginalization of institutions now active in their section but located on the edges of the new section (such as Cape Girardeau, MO, Hayes, KS, Kearney, NE, or Waverly, IA), participation in the new section would quite likely be less than the total current participation in the four individual sections, resulting in a net loss for the MAA. Note that the five-state Southeastern Section, according to 2008 data, had 430 members, while the Iowa, Kansas, Missouri, and Nebraska/SE South Dakota sections had a combined membership of 800. Also, note that the total population of the five Southeastern Section states is more than two and a half times larger than the combined populations of Iowa, Kansas, Missouri, Nebraska, and 10% of South Dakota. It doesn't take a mathematician to draw conclusions here.

The main outcome of the Kansas City meeting was that, if the section approved, Missouri would invite the other three sections to participate in a combined meeting at Northwest Missouri State in Maryville (reasonably central to the four-state area) in the spring of 2013. This was an easy offer for us to make because our 2013 meeting was already scheduled for Maryville. Gillman was hoping for a combined meeting in 2012 instead of 2013, but the Missouri Section didn't want to "bump" the University of Missouri-St. Louis in 2012, because they had not hosted a section meeting since 1977 and we wanted to encourage them to continue becoming more active in the section.

The combined section meeting in Maryville in 2013 was a very good meeting; it was nice to see old friends and meet new ones from the other sections. The consensus seemed to be that an occasional joint meeting with another section or sections might be a good thing, but none of the current sections wanted to lose or dilute their individual identity and heritage.

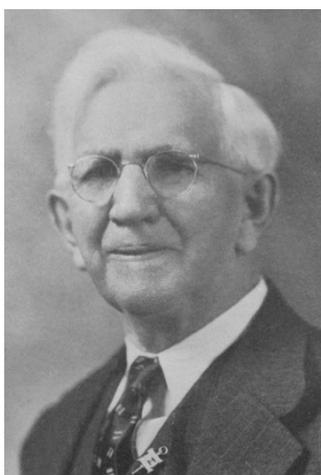
This wasn't the first time the idea of having combined section meetings has come up. In Chapter V of [24], a regional structure with regional meetings involving several sections is mentioned as a possible response to the growing unwieldiness of ever-larger national meetings. Action related to this idea surfaced again at the 1980 summer meeting of the Board of Governors, when the following motion was made [45]: "Subject to concurrence by the American Mathematical Society, the Board of Governors cancels the Joint AMS-MAA Meeting tentatively scheduled for August, 1982." This motion was defeated, but there followed a discussion of summer meetings; details can be found in [45]. This background explains an undated letter [46], which from internal evidence was written in the fall of 1980, from John Jobe, Secretary-Treasurer of the Oklahoma-Arkansas Section, asking the officers of all the sections contiguous with Oklahoma and Arkansas to think about the idea of a "Super Section Meeting" (SSM) "to take the place of the annual summer meeting of the MAA" [46]. Jobe had been asked by the MAA to investigate the feasibility of this idea. The MAA was concerned about the increasing cost of travel to the summer meeting, and was willing to provide some support to an SSM "not normally given to a section meeting" [46]. Jobe suggested the University of Arkansas at Fayetteville as a possible site for an SSM in the spring of 1982, with the reassurance that the SSM would not necessarily take the place of the normal section meetings. If the MAA did decide to do away with the summer meeting (although in [45] its continuation was deemed "very desirable" by the Board of Governors), then that meeting might be replaced by 3-5 SSM's. A questionnaire with a November 15, 1980, deadline was

included with Jobe's letter. Presumably, the questionnaire was completed and sent back; Missouri Section records do not contain a copy. We must not have liked the idea, though. Neither the minutes of the November 21, 1980, Missouri Section Executive Committee meeting nor the minutes of the 1981 Missouri Section meeting contain any mention of this proposal. Although it was not until 1997 that the AMS stopped participating in the summer meetings, there was talk of their withdrawal from the summer meetings in the 1980s (see the Governor's report in [47]). One wonders whether there was any connection between that action and the MAA concerns about the summer meeting in 1980.

8. People

The real character of an organization comes from the people involved, and the Missouri Section has been blessed with many dedicated members. Some have been well known and others should have been better known. The trouble with picking out individuals to mention is, of course, that there will invariably be some people left out who deserve the recognition just as much as those who were included. The Appendices contain lists of the section Governors, Chairs (Presidents), Vice-Chairs (Vice-Presidents), and Secretary-Treasurers, all of whom provided valuable service and leadership to the section. I will be glad to listen to anyone who thinks I omitted any important people here (but see Clark's Corollary to Road Rule 25). One thing to note is that women have played many important roles in the Missouri Section from the beginning.

B.F. Finkel and **E.R. Hedrick** have already been mentioned, and their contributions and influence on the MAA itself, not just the Missouri Section, cannot be overemphasized. The *Monthly*, Finkel's great



B. F. Finkel

idea, which became reality in Kidder, MO in 1894, started it all, and Finkel remained on the editorial board of the *Monthly* until his death in 1947. Hedrick, as related earlier, was the first president of the MAA, and according to Finkel [7], "The person to whom chief credit is due for obtaining this phenomenal charter membership [in MAA] was Professor E.R. Hedrick ... whose optimism and undaunted determination to see this worthy cause succeed abundantly never flagged or hesitated." Finkel noted that Slaughter, Hedrick, and Cairns were sometimes referred to as "the Association's Triumvirate." Hedrick left the University of Missouri to become Head of the Mathematics Department at the University of



E.R. Hedrick

California, Los Angeles, in 1924, and later, in 1937, was named Vice President and Provost at UCLA. Hedrick received his doctorate from Göttingen in 1901 under none other than David Hilbert. More about Finkel and Hedrick can be obtained from their obituaries in the *Monthly*, [20], [22]. Hedrick, along with other Missouri mathematicians, some of whom later became active in the MAA, is mentioned in Zitarelli [31]. Along with all his other accomplishments, it was noted in the announcement of Hedrick's appointment as Provost at UCLA [32] that his and his wife Helen's "home has been enlivened by seven daughters and three sons."

W.H. Roever and **Otto Dunkel**, both from Washington University (Dunkel began his career in Missouri at UMC in 1907 before moving to WU in 1916), also are conspicuous for their MAA activities, both at the section level and at the national level. Roever and Dunkel were frequent speakers at section meetings. Roever was chair of the section twice and vice-chair once, and he was chair of the Program Committee for the 1935 MAA Annual Meeting in St. Louis. As noted earlier, Roever was an editor of the *Monthly* when the MAA was created. Dunkel served as editor of the *Monthly* Problem Department for 28 years and was credited with establishing that department's growth and high standards. Dunkel first joined the problem department in 1919, becoming co-editor with Finkel, whose continued involvement with the *Monthly* was mainly in this area. In



Otto Dunkel

1934, Finkel became inactive in the problem department and Dunkel became the head problems editor, continuing in that position until 1947. When Dunkel died in 1951, he left a bequest of \$16,000 to the MAA, and the first thing the Board of Governors decided to use the income for was to publish the *Otto Dunkel Memorial Problem Book* [33], which came out in 1957 as a special issue of the *Monthly*. The volume contained a brief biography of Dunkel, an overview of the first sixty years of the *Monthly's* Problem Department, the four hundred “best” *Monthly* problems from 1918-1950, a classification of problems from the same time span, and an index of *Monthly* problems. With nearly 3000 problems to choose from at the time, it was no easy task to pick the “best” 400! By 1965, the balance in the Dunkel Fund was nearly \$33,000 [24], but the fund has apparently been absorbed into the general MAA budget and its identity has been lost. Jim Daniel, the current MAA Treasurer, knows nothing about this fund.

Another fund, established [24] in 1965 by an MAA member who wished to remain anonymous during his lifetime, was called the Greenwood Fund. A natural question is whether this was in any way connected with Kansas City Superintendent J.M. Greenwood, noted earlier as the first subscriber to the *Monthly*.

A third Washington University faculty member, **Paul R. Rider**, became secretary/treasurer of the Missouri Section in 1917, was made “permanent” in this position in 1919 (to avoid the bother of elections), and served until the cessation of meetings in the early ‘30s. It would be interesting to find a copy, notes, or transcript of Rider’s talk at the 1926 Missouri Section meeting, in which he gave an overview of the first ten years of the history of the Section. In the 1940s, Rider again held offices in the section, being secretary/treasurer in 1947 and chair in 1948-49. He received his Ph.D. from Yale in 1915, spent the 1915-16 year at the Sheffield Scientific School (part of Yale), and began at Washington University in the fall of 1916. Rider spent the 1935-36 academic year at the University of London, studying and working with Ronald A. Fisher, who is considered by many to be the founder of modern statistics. In the summer of 1936, Fisher visited the United States and made a point of visiting Rider in St. Louis. Fisher was famous for his intuition but not so good at documentation, and while in London Rider worked out much of the mathematics underlying Fisher’s procedures. During and after World War II Rider was recruited to work with the U.S. Army in England and Germany, returning to Washington University in 1946. In 1951 Rider moved to Ohio to become Chief Statistician at the Aerospace Research Lab at Wright Patterson Air Force Base, and in 1953-54 became president of the Ohio Section. When Rider retired from Wright Patterson, he was honored with a book [34] by some of his colleagues, who each contributed a chapter. A special feature of this volume was the inclusion of a letter from former President Harry Truman (see Appendix J), who was a childhood friend of Rider’s when their families were next-door neighbors in Independence. The Truman family moved to Independence in 1890, when Harry was six and Paul was two. One of the few things Rider did not excel at was retirement. He was 63 when he left Washington University for Wright Patterson; he remained at Wright Patterson until 1964, when he was 76; then he taught at Rose-Hulman (then Rose Polytechnic Institute) and the University of Puerto Rico into the late 1960s; around 1970 he moved to Southern California and became active in the Southern California Chapter of the American Statistical Association, who presented him with a special citation in June of 1970 [35]. He successfully remained retired there until his death at the age of 95 in 1984.

The first woman officer in the Missouri Section was **Emily Kathryn Wyant**; she was Chair in 1927. Wyant was an Instructor at UMC from 1921 until 1930, and worked on her doctorate during this time. She received the doctorate from UMC in 1929 with **G. E. Wahlin**. A charter member of the MAA, Wahlin came to UMC from the University of Illinois in 1924, and remained at UMC until his death in 1948. Wahlin was also the Ph.D. advisor for **R. J. Michel**, who was active in the Missouri Section in the mid-20th century. In 1930, Wyant left Missouri for Northeastern State Teachers College in

Oklahoma, and in 1934, she moved to Athens College in Alabama. While at UMC, in addition to her involvement in the MAA, she was quite active in the mathematics honorary society Pi Mu Epsilon, and during her time in Oklahoma, she founded Kappa Mu Epsilon, the mathematics honor society for schools that emphasize undergraduate education. Many institutions in the Missouri Section currently have KME chapters, and **Rhonda McKee**, University of Central Missouri and an active member of the Missouri Section, is the current KME national President.

A contemporary of Wyant's at UMC in the 1920s was **Nola Anderson** (later **Haynes**), who received her doctorate in 1929 with **Louis Ingold**, also a charter member of MAA. Like Wyant, she participated in Missouri Section Meetings while working on her PhD and left Missouri afterwards. In 1930, Anderson joined the faculty of H. Sophie Newcombe College (part of Tulane) in New Orleans as mathematics department chair. While there, she was active in the Louisiana-Mississippi MAA Section, serving as both secretary and vice-chair. In 1938, she married E.S. Haynes, chairman of the UMC astronomy department, whom she had met when he was on her doctoral committee. Returning to Missouri, she fully expected her marriage to mean the end of her academic career due to the strict nepotism policy then in force at UMC, but because of the shortage of people to teach during World War II and the big influx of G.I. Bill students afterwards she was hired by the UMC mathematics department. However, it wasn't until 1951, after her husband had retired, that she was given a regular academic appointment. Today's spousal hiring efforts by colleges and universities are a welcome change from the old anti-nepotism days. Back in Missouri, Haynes continued her involvement with the MAA, serving two terms, 1951-52 and 1960-61, as secretary-treasurer of the Missouri Section and one term, 1963-64, as chair. Nola Haynes passed away in December of 1996, less than three weeks before her 100th birthday. More details about her life and career can be found in [31], [36] and [37].

Margaret F. Willerding was quite active in the Missouri Section from 1948 through 1956, attending every meeting in those years. She received her Ph.D., with Arnold Ross, in 1947 from St. Louis University, and accepted a position as Instructor at Washington University that fall. During 1946-47, Ross had moved to Notre Dame, and Willerding spent much of that year commuting between St. Louis and South Bend while finishing her dissertation. In South Bend, she became acquainted with Gene Guth, a Hungarian theoretical physicist (as much a mathematician as a physicist) who was a friend of Ross. She and Guth were briefly engaged to be married, but Willerding did not go through with it. The fact that Guth was 25 years older than she was could have played a role. Also, although she was trained as a research mathematician and probably could have been a good one, Ross and Guth were the only research mathematicians she knew much about, and as she recalls in an interview with Margaret Murray [38], "All they did was eat, drink, and sleep mathematics, and I said, 'There's more to life than this.'" Ross was department chair at Notre Dame and was



Margaret Willerding
(Courtesy of Harris-Stowe
State University Archives)

interested in hiring Willerding to create a research group of himself, her, and Guth, but it was not to be. (Note that Ross was the invited speaker at the 1956 Missouri Section meeting, and Willerding probably was instrumental in his selection, so they must have remained on good terms.) This experience did not turn Willerding away from a research career, though; her position at Washington University carried research expectations with it, and she got her dissertation published in the *Bulletin of the AMS*, a good start. However, as she related in [38], she began to feel that Washington University was not a place where she could prosper. She claimed the department head told her when she was hired that she should not expect to be promoted as fast as a man, even if she did as much or more work than her male colleagues. Another incident was connected with the AMS Regional Meeting held at Washington

University in the fall of 1947. There was a tea for the participants on Friday afternoon of the meeting, and one of the faculty wives called Willerding to ask if she would pour at this event. Her answer [38] was, “I don’t intend to pour at one of the teas you’re having. I’m one of the *faculty*.” After just one semester, she resigned her position at Washington University. Having previously taught for the St. Louis school district, she was able to request reactivation and be assigned to the faculty at Harris Teachers College, her undergraduate alma mater. This marked the beginning of her transition from a pure mathematics research career to one in mathematics education, where she was very successful. She was the author of over 20 elementary textbooks. She was the second woman to hold an office in the Missouri Section when she became Secretary-Treasurer in 1949-50, and from 1952 until 1956 she served as the only Association Secretary the Missouri Section has had. In June of 1954, she became editor of the Mathematics Problems Department of the journal *School Science and Mathematics*, succeeding another Missouri MAA Section member, Prof. G. H. Jamison from Northeast Missouri State, in this post. Jamison had been editor of the Mathematics Problems Department since 1931, and Willerding did the job until 1976. When she moved to San Diego State in 1956, where she spent the rest of her career, it was a loss for Missouri.

Insight into Willerding’s personality can be gleaned from the following story [39], related by George Mallinson, the editor of *School Science and Mathematics* during most of Willerding’s tenure there. Mallinson was Dean of the School of Graduate Studies at Western Michigan and became editor in 1957. He and Willerding had not met, but he was favorably impressed with her handling of the Problems Department. At a meeting of NSF Institute Directors in the early 1960s, Mallinson met someone from San Diego State and asked him if he knew Willerding. He didn’t know her well, but said she was a nice person, a good teacher, and “of rather advanced age.” This last part worried Mallinson a little because he wasn’t looking forward to breaking in a new problems editor in the near future, so on a trip to California a couple of months later he arranged to meet Willerding. She was to pick him up at his motel and they would have a dinner conference. As Mallinson recalls in [39], “At about 6:00 PM on the meeting date a rap was heard at the door and [I] opened it and was very astonished. Before [me] was a very svelte, well-constructed young lady in a perfectly fitting dress, dark hair drawn back, standing in front of a robin’s egg blue Thunderbird. [My] first thought was that the young lady had not come to the right room. That thought was dispelled when she laughed and said, ‘So that’s what in h___ a dean looks like!’” Mallinson’s concerns evaporated, and Willerding continued editing the *School Science and Mathematics* Problem Department for many more years.

Maria Castellani was at the University of Kansas City from 1946-1961, serving as the mathematics department chair from 1951-1961 and holding the Lena Haag Chair in Mathematics beginning in 1957. She was active in the Missouri MAA Section and was section chair in 1955, the second woman to hold that office. Castellani received the Doctorate in Mathematics at the University of Rome in 1923, and had an interesting and varied career in Italy before moving to Kansas City. In 1923-24, she spent the year at Bryn Mawr as the Italian Scholar in Mathematics. She later became head of the League of Nations’ Accounting Office in Geneva, a post which, along with her many contacts abroad (relative to Italy), made her a natural choice to be named president of the Mussolini regime’s *Associazione Nazionale Fascista Artiste e Laureate*, or ANFAL (which translates as National Fascist Association for Women Artists and Graduates). One of the organization’s founders, Castellani led ANFAL throughout the 1930s. During this time she was also actively involved with the BPW International Federation of Business and Professional Women, and was the prime mover in founding the Italian branch, *Federazione Italiana Donne Arti Professioni e Affari*, or FIDAPA. She spoke at the July 1933 International Federation of Business and Professional Women Congress, held at the Palmer House in Chicago. In the press release for this event, carried by many U.S. newspapers, she was described by [40]: “The Fascist viewpoint will be presented by Dr. Maria Castellani, manager of the statistical bureau

of the largest insurance institute in Italy, first woman to become a bureau chief under the Mussolini regime.” Through her International BPW activities and her involvement in broadcasting, she became internationally known. In 1936, for example, she hosted a radio broadcast from Italy, which was heard nationwide in the U.S. on NBC [40], featuring Maria Cristina Marconi, second wife of Guglielmo Marconi, the Italian inventor and Nobel Prize recipient. It must have required a high degree of political astuteness to be an effective advocate for women in Mussolini’s Italy. Considering Castellani’s background in broadcasting, it should be no surprise that when she was Chair of the Missouri MAA Section, the invited speaker that year was Philip S. Jones from the University of Michigan, who spoke on “The Use of Television in Mathematics Education.” One wonders whether Jones realized that his hostess probably knew more about his topic than he did.



Maria Castellani

Gung and Hu Award for Distinguished Service recipients. The MAA’s national Award for Distinguished Service to Mathematics was first presented in 1962, and the Gung and Hu Award has been its endowed successor since 1990. This is intended to be the most prestigious award for service offered by the MAA, and winners of this award are no longer eligible for the Certificate for Meritorious Service. The Missouri Section has been honored to have three of its members receive this award. The full text of each award citation is in Appendix B.

1991: Shirley Hill, University of Missouri Kansas City [42]. Dr. Hill was recognized for her valuable leadership nationally in curriculum development and on policy boards dealing with the teaching and learning of mathematics.

1997: Deborah Tepper Haimo, University of Missouri St. Louis [43]. When she received this award, Dr. Haimo had moved to California, but most of the activities on which her selection was based took place while she was in Missouri at UMSL. She was quite active in the MAA at the national level, culminating with a term as MAA President in 1991-92. During her term as president, she led in the reorganization and streamlining of the MAA committee structure, and established what we now know as the Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics.

2004: T. Christine Stevens, St. Louis University [44]. Dr. Stevens can be considered the mother of Project NExT (New Experiences in Teaching), widely accepted as being one of the most successful programs in the history of the MAA. She and Jim Leitzel created Project NExT in 1992, and since Leitzel’s passing in 1998, Stevens has been sole director of the project. In addition, she has been an AMS/MAA/SIAM Congressional Science Fellow, an NSF Program Director, and active on several MAA and SIAM national committees.

Certificate for Meritorious Service recipients. In the summer of 1983 the MAA established a Certificate for Meritorious Service in recognition of service to a Section of the Association, and the first such awards were presented at the 1984 Summer Meeting. A section is allowed to give this award every five years, and the sections were divided into five groups by an initial lottery so that five or six awards would be given each year; Missouri drew 1988 for its first selection. The recipients of this award are people recognized by the section as providing notable leadership and service.

1988: Troy Hicks, University of Missouri Rolla. Prof. Hicks was an enthusiastic leader in the Missouri Section for many years, serving terms as Vice-President, Secretary-Treasurer, and Sectional Governor. He was recognized as an outstanding teacher of mathematics and was tireless in his efforts to improve the quality of mathematics education. He served as a primary source of guidance for students, encouraging them to attend and present papers at mathematics meetings and he was an active lecturer in the Missouri High School Lecturer Program. Prof. Hicks taught four National Science Foundation Institutes for secondary school teachers of science and mathematics and directed eight (as of 1988) Ph.D. dissertations. Three of his Ph.D. students have held major offices in the Missouri Section.

1993: Harold Hager, Southeast Missouri State University. Dr. Hager served the section as vice-chair, chair, and Governor. In addition, he served on several nominating committees to select candidates for various section awards and positions, and participated in the high school visiting lecturer program. As chair of the Department of Mathematics at Southeast Missouri State University, he took a leadership role in promoting among the faculty of his department consideration of MAA initiatives regarding the teaching of mathematics and has strongly supported their participation in MAA activities. In addition, Dr. Hager has been active in promoting mathematical awareness in his community through talks to civic organizations and has been a member and strong supporter of the Missouri Council of Teachers of Mathematics and the Missouri Mathematical Association for the Advancement of Teacher Training.

1998: Curtis Cooper, Central Missouri State University. Dr. Cooper distinguished himself through many years of continuous and exemplary service to his profession and to the MAA, on both the state and national levels. Since joining the faculty of Central Missouri State University, he attended every meeting of the Missouri Section as well as the national AMS-MAA joint meetings. In addition, he almost always presents a paper at the section meeting. He has served as secretary-treasurer and as Governor of the Missouri Section. He founded and continues to guide the Missouri MAA Collegiate Mathematics Competition. Dr. Cooper is one of those people who work for and support an organization for the benefit of the organization with little thought for their own prestige or personal gain.

2003: Alvin Tinsley, Central Missouri State University. For more than a quarter of a century, Dr. Tinsley has played a major role in shaping the Missouri Section. In his department at Central Missouri State University, he co-founded and cosponsored the MAA Student Chapter and served as the MAA Department Liaison. He served as Section Vice-Chair/Chair/Past-Chair, served on four Section Meeting Arrangements Committees, and participated in the MAA High School Lectureship Program. For twenty-four years, he served as the Missouri Director of the American High School Mathematics Examination. While Missouri Director, he instituted the Missouri State Governor's Award for the Missouri high school student who achieved the highest score on the examination. He was a key player in the initiation of both the annual Missouri Section 5K Run/Walk and the Section-sponsored Missouri Collegiate Mathematics Competition. At the national level, Tinsley served as the Missouri Section Governor, a member of the MAA Committee on American Mathematics Competitions and a member of the Advisory Panel of the MAA Committee on American Mathematics Competitions.

2008: Victor Gummersheimer, Southeast Missouri State University. Dr. Gummersheimer began working as a member of the faculty at Southeast Missouri State University in 1976. He quickly became involved in the MAA, serving as vice chair/chair/past chair, secretary-treasurer,

and newsletter editor. He was always known for his professionalism. His last tour of service was as section governor from 2000 to 2003. He has always been good about helping to involve new people in the section, both as officers and at section meetings. He has served on section nominating committees several times and is always helping out at section meetings. During his twelve years as department chair, despite many retirements, departmental involvement in the section actually increased. He encouraged involvement at all levels, as shown by the many section officers that have come from the Southeast, the large contingent that regularly attends section meeting each year (despite of the drive, which usually exceeds five hours), and several Project NExT Fellows from his department.

2013: Yungchen Cheng, Missouri State University. Dr. Cheng has been a stalwart, hard-working member of the Section for over twenty years. He initiated the MAA Student Chapter at Missouri State, one of the first chapters in the nation, and served as its sponsor for years. He has served as secretary-treasurer, vice chair/chair/past chair, and Governor of the Missouri Section, and is currently the liaisons coordinator. He also served as the Missouri State Departmental Liaison. Cheng initiated joint meetings of the Missouri Section with the Missouri Council of Teachers of Mathematics and the Missouri Mathematical Association of Two Year Colleges. He served on the Missouri Department of Higher Education's Math Workgroup to develop college entry and exit competencies. He became involved with campus service work at MSU soon after joining the faculty in 1984. He has directed a Regional undergraduate math research conference involving colleges and universities in Missouri, Arkansas, and Kansas at MSU since 2005 through MAA's Regional Undergraduate Mathematics Conference (RUMC) program. Cheng has been an active collaborator with area high schools, sponsoring math contests, math clubs, summer math institutes, and dual credit math courses and was greatly involved with a recent statewide (high school/ college) math curriculum alignment initiative.

References

- [1] Editorials, *The American Mathematical Monthly*, Vol. 1, No. 2, (Feb., 1894), pp. 58-59.
- [2] Cairns, W.D., Notes and News, *The American Mathematical Monthly*, Vol. 22, No. 2 (Feb., 1915), pp. 73-76.
- [3] Cairns, W.D., Notes and News, *The American Mathematical Monthly*, Vol. 22, No. 5 (May, 1915), pp. 175-178.
- [4] Slaught, H.E., The Winter Meeting of the Society at Chicago, *Bull. Amer. Math. Soc.* 21 (1915), pp. 285-298.
- [5] Cole, F.N., The April Meeting of the American Mathematical Society in New York, *Bull. Amer. Math. Soc.* 21 (1915), pp. 481-493.
- [6] Slaught, H.E., The Promotion of Collegiate Mathematics, *The American Mathematical Monthly*, Vol. 22, No 8 (Oct. 1915), pp. 251-253.
- [7] Finkel, B.F., The Human Aspect in the Early History of the American Mathematical Monthly, *The American Mathematical Monthly*, Vol. 38, No 6 (Jun.-Jul. 1931), pp. 305-320.
- [8] Kellogg, O.D., The Ninth Regular Meeting of the Southwestern Section, *Bull. Amer. Math. Soc.* 22 (1916), pp. 215-219.
- [9] Huntington, Albert H., First Regular Meeting of the Missouri Section, *The American Mathematical Monthly*, Vol. 24, No. 1 (Jan. 1917), pp. 24-27.
- [10] Cairns, W.D., Notes and News, *The American Mathematical Monthly*, Vol. 22, No 10 (Dec. 1915), pp. 347-352.
- [11] Traffic News, *Railway Age Gazette*, Vol. 59 (July 30, 1915), p. 211.
- [12] Mergendahl, T.E., Kansas Section of the Mathematical Association of America, *The American Mathematical Monthly*, Vol. 23, No. 5 (May 1916), pp. 164-165.
- [13] Kullman, David E., The Ohio Section: 1915-1990, <http://sections.maa.org/ohio/History/index.html>.
- [14] Slaught, H.E., The Association and its Sections, *The American Mathematical Monthly*, Vol. 34, No. 5 (May 1927), pp. 225-229.
- [15] Rider, Paul R., Tenth Annual Meeting of the Missouri Section, *The American Mathematical Monthly*, Vol. 34, No. 1 (Jan. 1927), pp. 1-4.
- [16] Rider, Paul R., The Fourteenth Annual Meeting of the Missouri Section, *The American Mathematical Monthly*, Vol. 38, No. 2 (Feb. 1931), pp. 61-62.
- [17] News and Notices, *The American Mathematical Monthly*, Vol. 44, No. 6 (Jun.-Jul. 1937), p. 407.

- [18] *The American Mathematical Monthly*, Vol. 45, No. 5 (May 1938), front matter.
- [19] Vincent, David, Spatz, Lyle, and Smith, David W., *The Midsummer Classic: The Complete History of Baseball's All-Star Game*, University of Nebraska Press 2001, pp. 74-75.
- [20] Ford, W. B., Obituary: Earle Raymond Hedrick, *The American Mathematical Monthly*, Vol. 50, No. 7 (Aug.-Sep. 1943), pp. 409-411.
- [21] Finkel, B.F., A History of American Mathematical Journals, *National Mathematics Magazine*, Vol. 14, Nos. 4-8, Vol. 15, Nos. 1-8, Vol. 16, Nos. 2, 4, 6, 7, 8, and Vol. 17, No. 1, (1940-1942).
- [22] Cairns, William DeWeese, Benjamin Franklin Finkel, *The American Mathematical Monthly*, Vol. 54, No. 6 (Jun. - Jul. 1947), pp. 311-312.
- [23] Willerding, Margaret F., The April Meeting of the Missouri Section, *The American Mathematical Monthly*, Vol. 63, No. 7 (Aug. – Sep. 1956), pp. 537-539.
- [24] May, Kenneth O. (ed.), *The Mathematical Association of America: Its First Fifty Years*, The Mathematical Association of America (1972).
- [25] Dunnington, G. Waldo, *Carl Friedrich Gauss: Titan of Science*, The Mathematical Association of America, Washington, DC (2004).
- [26] Chambless, Susan D., Charles Henry Gauss Family Papers, retrieved May 12, 2014, from <http://homepages.rootsweb.ancestry.com/~schmblss/>.
- [27] Gummersheimer, Victor, From the Section President, *Newsletter of the Missouri Section Mathematical Association of America*, Vol. 5, No. 1 (Nov. 1983).
- [28] Friedlander, Richard J., Ol' Abner Has Done It Again, *The American Mathematical Monthly*, Vol. 99, No. 9 (Nov. 1992), p. 845.
- [29] Gillman, Rick, Dinner Meeting Summary, email to Jean Johnson, Mark Sand, Yungchen Cheng, and Joel Haack, August 10, 2010.
- [30] Cheng, Yungchen, From the Governor, MAA Missouri Section Newsletter, Vol. 31, No. 1 (Fall 2010), pp. 6-10.
- [31] Zitarelli, David, Hilbert in Missouri, *Mathematics Magazine* 84 (2011), pp. 351-364.
- [32] News and Notes: Hedrick Made Provost at U.C.L.A., *The American Mathematical Monthly*, Vol. 44, No. 4 (Apr. 1937), p. 274.
- [33] Eves, Howard and Starke, E.P. (eds.), *The Otto Dunkel Memorial Problem Book*, *The American Mathematical Monthly*, Vol. 64, No. 7 (Aug.-Sep. 1957), Part II.
- [34] Armitage, John V., et al. (eds.), *Rider Anniversary Volume: A Series of Papers Presented on the Occasion of His Retirement by the Friends of Paul Rider*, Ft. Belvoir Defense Technical Information Center (1963).

- [35] Paul Rider Honored at District 10 Meeting, *The American Statistician*, Vol. 24, No. 4 (Oct. 1970), p. 5.
- [36] Green, Judy and LaDuke, Jeanne, *Pioneering Women in American Mathematics; The Pre-1940 PhD's*, American Mathematical Society, Providence (2009).
- [37] Moen, Nancy, Better at Math "Than the Boys," *Critical Points*, Department of Mathematics, University of Missouri-Columbia, Spring 1996, p. 12.
- [38] Murray, Margaret A.M., *Women Becoming Mathematicians: Creating a Professional Identity in Post-World War II America*, The MIT Press, Cambridge (2000).
- [39] Mallinson, George, "To Dr. Margaret F. Willerding: So That's What in H___ a Dean Looks Like!" *School Science and Mathematics* vol. 76, No. 5 (May-June 1976), pp. 363-364.
- [40] National Council of Women: Women's Specific Place in Proposed New Social Order Stressed at Its International Congress Opening in Chicago July 16, *Lewiston Evening Journal*, July 15, 1933, p. A-3.
- [41] Marchesa Marconi Will Discuss Status of Women Under Fascism, *New York Evening Post*, June 9, 1936.
- [42] Fey, James T. and Hoffman, Kenneth M., Award for Distinguished Service to Dr. Shirley A. Hill, *The American Mathematical Monthly*, Vol. 98, No. 1 (Jan. 1991), p. 2+1+3-4.
- [43] Lacampagne, Carole B., Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service to Deborah Tepper Haimo, *The American Mathematical Monthly*, Vol. 104, No. 2 (Feb. 1997), pp. 97-98.
- [44] Megginson, Robert E., Yueh-Gin Gung and Dr. Charles Y. Hu Award to T. Christine Stevens for Distinguished Service to Mathematics, *The American Mathematical Monthly*, Vol. 111, No. 3 (Mar. 2004), pp. 185-188.
- [45] Roselle, David P., The Mathematical Association of America Minutes of the Meeting of the Board of Governors, Ann Arbor, Michigan, August 2, 1980.
- [46] Jobe, John, Letter to Jerry Wilkerson, postmarked Oct. 22, 1980.
- [47] Bahnemann, David, Spring Meeting Minutes, April 28, 1984, *Newsletter of the Missouri Section Mathematical Association of America*, Vol. 6, No. 1 (Nov. 1984).