

THE MINING AND
METALLURGICAL
SOCIETY OF AMERICA

An Overview
and
Brief History

1908-2016



Reverse of the 100th Anniversary MMSA Medallion

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THE MINING AND METALLURGICAL SOCIETY OF AMERICA

Statement of Purpose

The Mining and Metallurgical Society of America (“MMSA” or “Society”) is a non-profit association of mineral resource professionals whose members represent all facets of domestic mining and metallurgical interests. MMSA was established in 1908. One of its principal objectives over the years has been to foster helpful cooperation with and between other organizations interested in the mining industry.

MMSA is not a technical society. However, its membership includes many of the industry’s best-known engineers and executives. The Society typically concerns itself with fundamental principles and with problems facing the industry in such areas as legislation, economic and education, as well as environmental concerns, labor relations, investor protection, and health and safety. Representatives of the Society from time to time testify before legislative bodies and provide advice to federal agencies such as the former U.S. Bureau of Mines.

One of the important ongoing activities of MMSA has been the administration of the Jackling Fund (the “Fund”.) The Fund was set up in 1959 with a \$20,000 bequest under the will of Daniel C. Jackling, who was a charter member of the Society. The Fund is used to support research and education, to recognize honor or merit, and to assist other societies or institutions in the advancement of mining, metallurgy and the general sciences. Annual disbursements from the Fund generally range from \$40,000 - \$60,000. The principal is now in excess of \$1.1 million, invested in stocks, bonds and money market instruments. The Fund and the Society are tax-exempt, and dues are deductible as business expenses.

The Society awards a Gold Medal for conspicuous professional or public service.

MMSA recently established a 'Qualified Professional' membership classification. Regulations developed by security commissions have established a 'qualified person' designation as a mode of investor protection against the promotion of ill-defined properties being used as a means to raise funding from the general public for exploration and mining ventures. The Society's program, established in 2006, is currently recognized by security regulators in all Canadian Provinces, in Australia and in South Africa. It provides for independent certification by a professional organization with a strong code of ethics for individuals who prepare mineral property reports.

Throughout its history, MMSA has been an invitational society. Its membership, in recent years, has hovered around 350. It is the objective of the Society to continually infuse representatives of the "new generation" of mining leadership into its membership body.

The Objectives as stated in the MMSA Constitution:

Article II - Objectives

The Society shall seek as its primary objective to serve the National Welfare of the United States of America as it relates to the Mineral Industries. Without limiting the generality of the foregoing, this may involve such collateral fields as: (1) the advancement of the Mining and Metallurgical Industries, (2) the better protection of mining and metallurgical investors and workers, (3) the responsible development of mineral resources, (4) the increase and promotion of scientific knowledge in fields related to the Mineral Industries, (5) the encouragement of high professional ideals and ethics.

A Brief History

At the turn of the 20th Century, the United States began a long period of unparalleled industrial expansion that is still underway. In 1908 a group of the most prominent men in the natural resources world considered the enormous growth and change the country was facing. Some 114 of them joined together and formed MMSA. In its constitution, the MMSA formally committed to work for:

- ◆ Conservation of mineral resources;
- ◆ Advancement of the mining and metallurgical industries;
- ◆ Better protection of mine investors and mine workers;
- ◆ Increase of scientific knowledge; and
- ◆ Encouragement of high professional ideals and ethics.

Since its founding 100 years ago, the Society has grappled with virtually every issue the growing mining industry has faced over the decades of very good and very bad times. The Society's many professional papers, resolutions, speeches, and pamphlets on every aspect of mining helped shape the development of the industry which literally has provided North America with its most important building blocks.

Today, with the country facing new problems and potential ones in such diverse areas as energy and materials consumption, urban decay, climate change and space exploration, it is more important than ever for the country to be able to depend on a competent and responsible mining industry. The mineral industry professionals from business, government, and academia who constitute the MMSA remain committed to the original goals and are convinced that the solutions to today's mammoth problems will be forthcoming.

The Society's Purpose The purpose of the Society was established early in the existence of the organization. This purpose is to:

“Discuss, digest and take formal action by referendum of all its members upon the broad principles and questions that affect the mining industry and which cannot be, or are not

covered by other organizations, and then put into operation so far as possible, their conclusions”.

“It excludes from consideration technology methods, detail and special interests in order to concentrate more effectively on the fundamental principles and problems affecting the industry such as labor relations, legislation, economics, and education, with which it may be competent to deal”.

“At natural points of contact with other organizations its purpose and ideal is to establish helpful cooperation.”

The Society’s Early Endeavors The list of issues and causes in which the Society has become involved with over the years is long and colorful. MMSA has expressed its professional, collective opinion in scores of resolutions ratified by vote of the full membership. All have expressed the Society’s opinion on subjects of public interest. Many of the resolutions are as timely today as they were when they were first ratified early in the Society’s history.

For example, in the first decade of the 20th Century, many corporations never published annual reports. The MMSA recommended that every mining company publish a report within ninety days of the close of the fiscal year giving both financial and technical information on their operations, including a competent estimate of ore reserves. Positions such as this one demonstrate the Society’s foresight.

In the same vein, from the beginning the Society has been concerned with safety and security of all who work in mines. It was recommended that rescue stations be established and manned at strategic locations throughout the mining areas of the country. The purpose was to provide early and capable aid in the event of mine disasters.

These rescue stations and their personnel were the forerunners of the United States Bureau of Mines. In 1912 a vote of the membership approved the draft of a bill for the establishment of the Bureau of Mines. The following year Congress was urged to authorize a fitting

building in Washington, D.C. for the use of the new Bureau of Mines and the Geological Survey.

At a time in 1913 when the United States patent system was under fire, the Society urged Congress to hold in abeyance all proposed legislation affecting the patent system until a proposed Commission had time to hold hearings, digest the testimony heard, and study the subject sufficiently to make a competent report.

In 1914 a major, and ongoing, activity of the Society was started with the award of the Society's Gold Medal in formal recognition

“for conspicuous professional or public service for the advancement of the science of Mining and Metallurgy, or of Economic Geology; for the betterment of the conditions under which these industries are carried on, for the protection of mine investors, and especially for the better protection of the health and safety of workmen in the mines and metallurgical establishments.”

The Society's Gold Medal was first awarded to Herbert C. and Lou Henry Hoover in recognition of “. . . *Contributions to the Literature of Mining. . .*” This award was presented at the Society's Annual Dinner held at the Biltmore Hotel in New York City. One hundred persons were in attendance. The Gold Medal award has been given to a total of 35 individuals in the 100 year history of the Society. Included in the awardees are Pope Yeatman, Robert Peele, Daniel Jackling, Donald M. Liddell, Plato Malozemoff, Dr. Charles F. Fogarty, Harry Frederick Oppenheimer, Donald and Mary Hausen and others. The individual to receive the Gold Medal at the 2008 Annual Meeting was Thomas J. O'Neil. Since 2008, Gold Medals have been presented to five more mining professionals. (See p. 21 for the complete list.

In 1914, the membership of the Society, by letter ballot, urged a complete revision of the Federal mining law. Here was an area where cooperation with other agencies was important because unity would lend strength. The Society has played a major role, to this date, in issues related to the Federal mining and environmental laws and the regulation issuing therefrom.



The Medal Presentation Dinner, Biltmore Hotel, March 9, 1914

At a meeting in Washington, D.C. in December 1915, a board composed of five MMSA members, five American Institute of Mining Engineers members, five American Mining Congress members and ten independent representatives from industry recommended implementation of resolutions related to mining law revisions which had been recommended by the Society in 1914.

In 1916, the Society made specific recommendations on the “discovery” issue, location and size of claims, assessment work and patenting, abolition of extra-lateral rights, and appeals from Land Office decisions. More work was done by various successor committees resulting in the submission of additional proposals to the U. S. Bureau of Mines. Many of these proposals were used in the 1921 Arentz revision of the mining law.

The Society has taken on issues in advance of the times. In 1919, for example, the Society believed labor’s rightful claim on the produce of industry should be 70 to 80 percent. The Society launched a major effort to promote the idea. It published papers and passed resolutions saying statistics show that as improved technology increases the

produce of labor, the working man continues to get his 70 to 80 percent.

A resolution introduced in the Society's Council in 1924 advocated the education of investors to demand an engineer's report in connection with new stock offerings. It urged on bankers the desirability of such a procedure. The resolution called on the nation's stock exchanges to require a competent engineer's report as a prerequisite for listing a security on the exchange – thus our modern day "Competent Person" report.

A more comprehensive list of activities in which the Society has participated during its history is shown in the section titled "*Actions & Projects of the Society – 1908-2015*" beginning on page 27.

The Jackling Fund One of the most enduring and worthy efforts of more recent Society activity is use of the Fund to promote educational and research efforts of the Society.

In 1959, the Jackling Fund was established pursuant to the will of the late Daniel C. Jackling. Mr. Jackling, often referred to as the "father of porphyry coppers" and long time Chairman of Kennecott Copper Corporation, was a member of the Society from its founding in 1908 until his death in 1956. In his will, Jackling provided the Society with a substantial endowment:

"...to be used in research connected with mining and metallurgy, in the establishment of scholarships, chairs or professorships in connection with the study of mining and metallurgy in institutes of learning, for the making of awards of honor or merit, and/or for the purpose of assisting societies or institutions in the advancement of mining, metallurgical and general sciences..."

In accordance with these guidelines and with both the income and principal of the Jackling Fund, the Society has sponsored various studies, books, courses, workshops, films and seminars that it deemed helpful in promoting the advancement of mining and metallurgy. The value of the Fund has increased from its original \$20,000 sum to over \$1.05 million at the end of 2015. Minerals libraries, museums,

educational institutions and student paper awards have also received support.

In recent years, the Jackling Fund has financed the production and distribution of an index of North American mining and metallurgical education programs entitled, “Opportunities for a Career in Mining and Metallurgy.”

The Fund also enabled the Society to become a significant supporter of the Mineral Information Institute, Inc. (MII), a not-for-profit organization whose mission was “to disseminate information to help improve the public’s awareness of the importance of mineral and energy resources in our everyday lives, to our nation’s strength, and to national and world economics.” MII’s primary activity was the development of educational curricula for use in primary and secondary schools. The Society is proud to have been MII’s largest single supporter of its worthy endeavors.

The Mineral Information Institute merged with the Society for Mining, Metallurgy, and Exploration in 2011 and is now known as the Minerals Education Coalition. The Coalition continues to provide high quality materials about the importance of minerals in everyday life.

“The Minerals Education Coalition’s mission is to identify, produce and disseminate fact-based K-12 minerals education lessons and activities and to inform and educate the general public about the importance of mining in their everyday lives.”

Between 1997 and 2015, the Jackling Fund has donated over \$1.2 million to organizations that educate the public about mining.

The Jackling Fund securities were moved to the newly created Jackling Foundation in 2014.

The Society's Membership and its Management

Membership of the Society Membership in the Society has always been limited to a select few individuals who represent the broad range of the leaders in the mineral industry. Today's membership totals approximately 350 individuals. Many of the names of the first 16-member Board of Councilors are recognizable today, especially the five who signed the original certificate of incorporation: Henry S. Munroe, Professor of Mining Engineering at Columbia University; Walter R. Ingalls, a mining engineer and Editor of Engineering and Mining Journal; Robert H. Richards, Professor of Mining and Metallurgy at Massachusetts Institute of Technology; Henry M. Chance, mining engineer of Philadelphia; and J. Parke Channing, mining engineer, President of the Tennessee Copper Co.

Herbert Clark Hoover was on the Society's membership list of 145 individuals dated January 1, 1909, along with other distinguished names such as: Daniel Cowan Jackling, Robert C. Gemmell, Stanley A. Easton, S. F. Emmons, Waldemar Lindgren, Seeley W. Mudd, T. A. Rickard, Reno H. Sales, J. E. Spurr, M. E. Wadsworth, Arthur L. Walker, Walter Harvey Weed, and Pope Yeatman.

Current members of the Society come from all areas of the mining and metallurgical world and from all sections of the country. Originally, most of the action in the Society originated in New York and the eastern districts. In recent years, however, the center of gravity of the Society, as well as the industry and the membership, has moved west. The Arizona, Colorado, Nevada and Utah membership is particularly active these days.

During the more than 100 years of its existence, the Mining and Metallurgical Society of America has moved with the times. Its members hold positions of responsibility and have helped supply the weapons of war and the tools for peace, not only for the United States but throughout the world. Society members, including geologists, mining and metallurgical engineers from the U.S. and Canada, have

brought progress not only in technology to undeveloped lands, but have raised the living standards worldwide wherever they went.

MMSA members are currently working with the Society for Mining, Metallurgy and Exploration (SME), American Exploration & Mining Association, National Mining Association (NMA), and similar organizations to develop information useful in legislative and public policy dialogues about mining. MMSA members have provided advice, given testimony, passed resolutions, and developed professional papers on a number of important issues including revisions to the mining law, mine taxation, health and safety, labor relations, economics, the environment, and education.

Today, MMSA's members include men and women who are executives, leaders, and decision makers in engineering, law, education, and the scientific disciplines related to mining and mineral processing. Membership in MMSA provides these professionals with a unique opportunity to contribute their energy and expertise to mining public policy and educational arenas. In this way, membership in MMSA is highly complementary to membership in other industry professional societies that are primarily focused on the technical aspects of mining and mineral processing.

Management of the Society The affairs of the Society are managed by a President, a Vice President, a Secretary, a Treasurer and a Board of Councilors. Business affairs are handled by an Executive Director (an appointed position). The officers and Councilors are elected by vote of the membership on an annual basis. The Local Sections may appoint Councilors and "At Large Councilors." The "At Large Councilors" represent individuals who reside across the United States and Canada but are not members of Local Sections.

At present, one active Local Section exists in Denver. Sections in Utah, Nevada and Arizona are represented on the Council but are not active as of the end of 2015. The Local Sections elect section officers and often hold monthly meetings at which important issues are discussed. The Local Sections also make donations to local mineral education efforts.

Once a year, normally in February or March, the full membership meets at an Annual Meeting held in conjunction with the Society for Mining, Metallurgy, and Exploration's annual Meeting. Regular meetings of the Executive Committee consist of the National Officers and the Board of Councilors. The Executive Committee conducts normal governance activities of the Society between Annual Meetings. An Executive Director conducts day to day activities of the Society. The Society publishes a quarterly newsletter to keep members informed of issues of interest and activities of the Society.

As the MMSA enters into a new century, the Society will continue to do in the future what it has done in the past – leading in the advancement of the natural resource industry through the encouragement of the high professional ideals and ethics which prompted the founding of the Society. These lofty goals of the Society are as important now as they were at its beginning.

MMSA – A Historical Perspective

A Perspective in 2004 There has been a lot of talk, particularly recently, about the relevance of MMSA in today's world where mining has many detractors. One MMSA member, Terry McNulty, was spurred to action after Marc LeVier's talk to the Arizona Section in November 2003, when it was suggested, hopefully in jest, that we might consider "... liquidating the Jackling Fund and throwing a party..." Terry came away feeling as though some members feel that MMSA, once a group of stellar beings performing heroic deeds on behalf of the Society, has lost direction and purpose. He felt like arguing, but thought he should keep still and cogitate about the matter for a while.

Having done that, these are Terry's thoughts:

"Carol and I have a few leather-bound MMSA Bulletins in our library and I have studied the one for 1915. The following points stood out as I reviewed that Bulletin:

- 1. The membership on December 31, 1914 stood at 261, about like today. (The current figure, 2016 revision, is actually 350.)*
- 2. In his report, Secretary W. R. Ingalls (Editor of E&MJ) remarked that "It is desirable to increase our membership without sacrificing anything in quality."*
- 3. There were indeed some famous members: George Argall, Foster Bain, Charles Butters, Louis Cates, Parke Channing, F. G. Cottrell, John V. N. Dorr, James S. Douglas, Louis Graton, H. W. Hardinge, Joseph Holmes, Herbert Hoover, Daniel Jackling, Waldemar Lindgren, Seeley Mudd, Robert Peele, Rossiter Raymond, Robert Richards, Reno Sales, William Saunders, G. D. Van Arsdale, and Walter H. Weed. However, I'd wager that we have at least as many current members whose names will be recognized by people in our profession 90 years hence.*

4. *The membership in 1915 comprised professors, corporate officers, mine and plant superintendents, government employees, and a lot of consultants.*

5. *Article 2 of the Constitution stated “The Society shall have for its objectives the conservation of mineral resources, the advancement of mining and metallurgical industries, the better protection of mine investors and mine workers, the increase of scientific knowledge, and the encouragement of high professional ideals and ethics.”*

6. *Admission to membership required “... eight years’ practical or professional experience, including not less than five years in positions of responsibility in mining or allied lines of work. Graduates of approved engineering schools shall be credited with one half the time prescribed for graduation.”*

7. *There were three sections – New York City, San Francisco, and Philadelphia. During 1914, the New York section met seven times, the San Francisco section met twice, and the Philadelphia section did not meet. At the December 17, 1914 New York meeting (at Browne’s Chop House), there were 30 attendees.*

8. *There were 12 districts, each with one or two Councilors.*

9. *Formal papers, or discussions thereof, were offered at most meetings and the central theme was technical practice.*

10. *There were committees including Standardization (of weights and measures), Mine Taxation, Mining Law, Professional Ethics, Professional Training, Employee Welfare, Annual Medal, and Panama-Pacific Engineering Congress.*

11. *Most expenses were related to awards and to publication of the annual Bulletin. No funds were directed toward outreach.*

My conclusions are as follows:

It does not appear to me that we are any less proactive, any less capable or recognized, or any less connected to our industry and the national scene than our forebears. We are no more apathetic, we are no less diligent about the quality of our membership, and we have not shrunk. (I suspect that we now have a higher percentage of mineral industry professionals than MMSA had in 1915.)

As you stated during your talk, we represent a substantial technical resource that can be brought to bear on major issues as they arise. I submit that we should be alert to opportunities to serve our industry with a combination of our technical skills, our contacts, and the good judgment and thick scar tissue that we have acquired through “getting the job done.”

Terry McNulty

Source: *MMSA Quarterly Newsletter* – February 2004

The Society’s 25th Anniversary The Society celebrated its 25th Anniversary in the depth of the Great Depression at a dinner held on November 8, 1933, at the Engineers Club in New York City. Several telegrams of congratulations were read from members and former officers of the Society. Seven past presidents of the Society presented papers on various topics of interest as outlined below.

W. R. Ingalls, ‘Are the American People Really Out of Work’,
Waldemar Lindgren, ‘The International Geological Congress’,
Allen H. Rogers, ‘Opportunities for Society Activities’,
Clinton H. Crane, ‘International Yacht Racing’ (really about yacht racing),
G. Temple Bridgman, ‘The Experiment in Governmental Control of Tin Production’,
Louis S. Cates, ‘The Necessity of Maintaining a Copper Tarriff’, and

Arthur Notman, 'A View of the Copper and Economic Situation'.

The Society's 30th Anniversary A more festive and lively celebration of the Society's 30th Anniversary occurred on May 10, 1938, at the Hotel Plaza in New York City, with a gathering of over 193 members and guests in attendance. The proceedings were begun by those in attendance singing the first stanza of "America" followed by the first stanza of "God Save the King". Two charter members were in attendance, W. H. Aldridge and W. R. Ingalls.

At the Speakers table were a prestigious group which included H. W. Chadbourne, President of International Mining Corporation, Louis S. Cates, representing David C. Jackling, President of the American Institute of Mining and Metallurgical Engineers, the Honorable Onesime Gagnon, Minister of Mines and Fisheries, Quebec, James Y. Murdoch, K.C., President of Noranda Mines, Limited, H. T. Hamilton, President of the Mining and Metallurgical Society of America, Charles Arthur Banks, Gold Medalist and Managing Director of Bulolo Gold Dredging, Limited, F. Cecil Baker, Chairman of American Advisory Committee Gold Fields American Development Co. Limited, George A. Easley, Vice President, Mining and Metallurgical Society of America, and E. J. Carlyle, Secretary, The Canadian Institute of Mining and Metallurgy.

In the Program for the evening the members were reminded of the Declaration of Purpose of the Society, a Declaration worthy of comment at the 100th Anniversary of the Society.

"The Purpose of the Mining and Metallurgical Society of America is primarily to discuss, digest and take formal action by referendum of all its members upon those broad principals and questions which affect the mining industry. . . .

"As typical of its activities and accomplishments may be cited its work respecting safety in mines, oil land and mine legislation, taxation, standardization, and economics."

Honored at this celebration was the 13th recipient of the Society's Gold Medal, Charles Arthur Banks for his distinguished service in

“The Application of Aerial Transportation to the Development of Remote Mining Operations.”

Following the presentation of the Gold Medal and Mr. Banks remarks, those assembled were addressed by James Y. Murdoch, K.C. and President of Noranda Mines, Limited.

The Society’s 50th Anniversary The Society celebrated its 50th Anniversary at its Annual Dinner held on Wednesday, January 29, 1958 at the Princeton Club in New York City. A total of 72 members and guests were in attendance. The Annual Business Meeting of the Society preceded the dinner the day before and was held at the Mining Club of New York. At the time of its 50th Anniversary four charter members of the Society were still active: W. H. Aldridge, J. M. Boutwell, Stanly A. Easton and William Young Westervelt.

At the speakers table were: Cleveland E. Dodge, Vice President of Phelps Dodge Corporation; Andrew Fletcher, President of St Joseph Lead Company; Dr. Augustus B. Kinzel, President Elect of the American Institute of Mining, Metallurgical and Petroleum Engineers and Vice President-Research of Union Carbide Corporation; Philip D. Wilson, President of the Society and President of Pinnacle Exploration, Inc.; Richard F. Goodwin, President-Elect of the Society and Chairman of the Executive Committee of Southern Peru Copper Corporation; Lt. Colonel Donald M. Liddell, Past President of the Society; Dr. John F. Thompson, Chairman of the Board of the International Nickel Company of Canada Limited; Fred Searls, Jr., Chairman of the Board of Newmont Mining Corporation; William F. Boericke, Secretary of the Society and Consulting Engineer of Hayden, Stone and Company.

Mr. Wilson, President of the Society, opened the adjourned business meeting which followed the dinner. Following brief introductory remarks, he formally received the Report of the Secretary and Treasurer for the previous year which was approved by vote of those in attendance. A report of the tellers of election was made on incoming officers and Councillors of five districts had been elected for the coming year. Mr. Richard F. Goodwin was elected President of the Society for 1958. Following this Mr. Wilson introduced those

at the Head Table and gave a brief overview of the incoming President's professional history.

At this point in the proceedings Mr. Wilson then introduced Richard F. Goodwin, newly elected President of Society who made introductory remarks prior to introducing the recipient of the Society's Gold Medal, Lt. Colonel Donald M. Liddell. Colonel Liddell was lauded for his many achievements on the metallurgy of a great many metals, based on his achievements over many years in research and consulting following his graduation from Johns Hopkins University in 1900. Notable of these achievements was his development of a process for producing selenium and tellurium on a commercial basis. He had also served many years on the editorial staff and as associate and managing editor of the *Engineering & Mining Journal*. In addition he had served for seven years as the Society's Secretary and one year as its President.

Mr. Goodwin then awarded Colonel Liddell with the Society's Gold Medal whose citation read "*For Unusual Contribution to the Art of Non-Ferrous Metallurgy and Research in Connection Therewith.*"

Colonel Liddell then gave a very interesting presentation over-viewing the accomplishments and activities of the 15 previous Gold Medal recipients. As an attendee at the first Gold Medal presentation to Herbert and Lou Hoover in 1914, Colonel Liddell indicated he had recently made a survey of those members and guests of that 1914 Dinner attended by 100 individuals who were still active. These 11 individuals include Mr. Hoover himself, J. V. N. Dorr, William Wallace Mein and his wife, Donald M. Liddell and wife, and non-members Mrs. Percy E. Barbour, widow of Colonel Percy E. Barbour, long secretary of the Society, H. A. Prosser and wife, and Dr. Bradley Stoughton and wife.

Colonel Liddell's presentation is recorded verbatim in Bulletin 308 of the Society dated July, 1958 and is a worthy "read."

The Society's 100th Anniversary The Society celebrated its 100th Anniversary at its Annual Dinner held on February 25, 2008 in Salt Lake City UT. About 100 members and guests were in

attendance. After the dinner, the Paul Burnside Band provided music for dancing.

Doug Silver was the Master of Ceremonies. Bob Schafer made the champagne toast to officially recognize MMSA's centennial milestone. Tom O'Neil was presented with the MMSA Gold Medal at the banquet. (See Tom's summary on p. 21.)

The guests went home with several memorabilia. Each guest received a beautiful commemorative medallion (see the inside cover), and wine glass. Paul Jones and Stan Dempsey prepared a video about the history of the Society. A short version of the video can be seen on the MMSA Web site. Copies of the original 2008 edition of this history book were given to all who attended the dinner.

During the dinner, the Society for Mining, Metallurgy, and Exploration presented a check to the SME Foundation for the MMSA/SME Presidential Scholarship in honor of the Society's 100th anniversary. The scholarship is presented to junior or senior minerals engineering students every year.

And Yet Another View of the Society Just to demonstrate that members of the Society did not ignore the "lighter side of life" at the gathering of the Society in 1915, the group 'toasted' the second Gold Medal awardee, Robert Hollowell Richards by a lively little tune which began

*"Here's to you, Bobby, Oh, sage metallurgical,
You who have taught us much wisdom of yore,
Doctor of Dressing – not salad or surgical-
But of the dressing of every old ore.
Long may you flourish in all your variety,
You whom we're proud to be honoring now!
Robert H. Richards, this mining society
Slips you the laurel to wear on your brow!"*

The toast was accompanied by a Flow Sheet of mineral processing outlining the courses of dinner for the evening.

Profile of an MMSA Member In the July 1984 MMSA Newsletter the following profile of an MMSA member was given. With the change of a very few terms and one date the profile should fit most of our members today.

“Born in 1920 in the Midwest, he majored in mining in an engineering school, and graduated with a bachelor’s degree following service in WW II. He started his working career as a laborer at an overseas mining operation where he worked his way up to mine foreman. After an orientation period as a staff member at the head office in New York, he was assigned to a Western mining operation. Some 15 years later, having advanced to division manager, he returned to New York in a management position at which time he was invited to become a member of MMSA. Following 15 years as an active member of the Society, during which time he assumed responsibilities as an officer and director of the parent company, he is approaching mandatory retirement age of 65. From his new residence in California he will serve as a consultant to his firm for another 10 years.”

Statement of Ethics

Since inception the Society has upheld a strict Statement of Ethics to which its membership agrees to honor and abide. This Policy has been revised and updated from time to time with the most recent guidelines adopted in 1999 stated below.

Ethical Guidelines:

1. The responsibility of members for the welfare, health and safety of the community shall at all times come before their responsibility to the profession, to sectional or private interests, or to other members.
2. Members shall act so as to uphold and enhance the honor integrity and dignity of the profession.
3. Members shall perform work only in their areas of competence.
4. Members shall build their professional reputation on merit and shall not compete unfairly.
5. Members shall apply their skill and knowledge in the interest of their employer or client for whom they shall act, in professional matters, as faithful agents or trustees.
6. Members shall only give evidence, express opinions or make statements in an objective and truthful manner and on the basis of adequate knowledge.
7. Members shall continue their professional developments throughout their careers and shall actively assist and encourage their fellows and those under their direction to advance their knowledge and experience.
8. Members shall comply with all laws and government regulations relating to the mineral industries.

10/31/98

Gold Medal Awards

The Mining and Metallurgical Society of America periodically awards a Gold Medal to individuals who have made significant contributions to the mineral industry. The first Gold Medal was awarded in 1914 with a total of 35 medals being awarded to 2015. The Gold Medal is awarded “for conspicuous professional or public service for the advancement of the science of Mining and Metallurgy, or of Economic Geology; for the betterment of the conditions under which these industries are carried on, for the protection of mine investors, and especially for the better protection of the health and safety of workmen in the mines and metallurgical establishments.”

The Society considers the Gold Medal to be the highest honor it can bestow on individuals providing exemplary service to the betterment of the mineral industry.

Recipients of the Gold Medal are listed below with the year and citation for their award.

- | | |
|------|--|
| 1914 | Herbert Hoover & Lou Hoover
“ . . . Contributions to the Literature of Mining” |
| 1915 | Robert Hollowell Richards
“ . . . Advancement in the Art of Ore Dressing” |
| 1916 | James Furman Kemp
“ . . . Advancement in the Science of Economic Geology” |
| 1917 | Edward Payson Mathewson
“ . . . Art of Non-ferrous Metallurgy.” |
| 1918 | Pope Yeatman
“ . . . Administration of Mines.” |
| 1919 | Charles Eugene Schneider
“ . . .Metallurgy of Iron and Steel.” |

- 1920 **E. A. Cappelen Smith**
“ . . . Art of Hydro-Metallurgy.”
- 1921 **Charles Warren Goodale**
“Increasing the Safety of Men in Mining and Metallurgical Operations”
- 1922 **Robert Peele**
“Literature of Mining”
- 1924 **Frederick Gardner Cottrell**
“Development of a Method of Precipitation of Particles from Smoke.”
- 1926 **Daniel Cowan Jackling**
“ . . . Unusual Services in the Development of Low-grade Ores.”
- 1929 **Cornelius F. Kelley**
“ . . . Distinguished Services in the Expansion and Stabilization of the Mining Industry.”
- 1938 **Charles A Banks**
“ . . . The Application of Aerial Transportation to the Development of Remote Mining Operations.”
- 1955 **Louis S. Cates**
“ . . . Distinguished Service in Mining and Related Industrial Activities”
- 1957 **Donald M. Liddell**
“ . . . Unusual Contribution to the Art of Non-ferrous Metallurgy and Research in Connection Therewith.”
- 1966 **John Fairfield Thompson**
“ . . . For outstanding contributions to original research, the development of new metal uses, and the guidance of a great metallurgical enterprise.”

- 1973 **Thayer Lindsley**
“ . . . For the application of encyclopedic geologic knowledge, the judicious use of modern technology, and the enthusiasm which stimulated others, resulting in the discovery and development of many valuable mineral deposits throughout the world.”
- 1976 **Plato Malozenoff** – Chairman & CEO Newmont Mining Corporation
“For leadership and financial skills in developing mineral prospects into great mining enterprises consistent with national interest and a deep sense of social responsibilities”
- 1979 **Ian MacGregor**
“In recognition of creative leadership in the management and financing of AMAX , Inc. during its years of outstanding growth and of constructive contributions to the advancement of the international mining industry”
- 1982 **Dr. Charles F. Fogarty** (In Absentia)
“In recognition of his constructive encouragement of the younger generation to enter the minerals industry, and of his inspirational leadership which led to several major mineral discoveries and the emergence of Texas Gulf as a broadly diversified natural resource company”

(The Award was given at a luncheon at the NY Mining Club to Fogarty’s widow, Wilma.)
- 1984 **Simon David Strauss**
“In recognition of his role as an international spokesman on mineral trade and economics and for his ability to interpret these subjects to the general public”

- 1988 **Sir Alistair Frame** – Director RTZ Corporation PLC
“For leadership in development, financing and operation of world-class mines and related industrial enterprise on behalf of the RTZ Corporation PLC.”
- 1990 **Harry Frederick Oppenheimer**
“The Society’s Gold Medal is awarded for conspicuous professional or public service for the advancement of the science of Mining and Metallurgy, or of Economic Geology; for the betterment of the conditions under which these industries are carried on, for the protection of mine investors, and especially for the better protection of the health and safety of workmen in the mines and metallurgical establishments.”
- 1999 **Milton H. Ward** – Chairman, President & CEO
Cyprus Amax - Cyprus Amax Minerals Company
“In recognition of his major accomplishments and dedicated service to the mining industry, and his active participation in educational efforts related to the industry.”
- 2000 **Alberto Benavides** – Chairman Compania de Minas
Buenaventura – Lima, Peru
“In recognition of an outstanding career, spanning almost sixty years, during which he has made a profoundly positive impact on the mining industry, on academia and community relations in Peru. His accomplishments are an inspiration, and set a wonderful example for future generations.”
- 2001 **J. David Lowell**
“In recognition of his many accomplishments as a preeminent world class geologist while maintaining an impeccable reputation as a gentleman of the highest ethical standard.”

- 2002 **Leonard Harris**
“For his many accomplishments as a metallurgist, a manager and most importantly as a humanitarian. His standards in professionalism, integrity and honesty have raised the bar of excellence for those who will follow.”
- 2005 **Donald and Mary Hausen** – Retired Newmont Mining Corporation
“For their significant humanitarian efforts, which have contributed meaningfully in making a positive impact of mining on society.”
- 2007 **Glenn Barton** – Retired Chairman & CEO Caterpillar Corporation
“For his dedication to the Mining Industry and his commitment to modern socially conscious mining.”
- 2008 **Thomas J. O’Neil** – Retired President & COO of Cleveland Cliffs, Inc.
“For a lifetime of dedication across multiple aspects of the mining industry, exemplified by excellence in academia, executive leadership in base metals and iron ore mining, and support of professional mining associations.”
- 2009 **Dorothy Gallagher** – Member, Board of Regents, Nevada System of Higher Education
“For exemplary dedication as a stalwart supporter of the mining industry and mining education through her efforts to maintain and invigorate the mining program at the Mackay School of Earth Sciences and Engineering as well as vocational education programs in the Nevada community college system.”
- 2010 **Roshan Bhappu** – President, Mountain States R&D International, Inc.
“For conspicuous professional and public service for the advancement of the sciences of Mining and Metallurgy, and/or of Economic Geology; for the betterment of the conditions under which these

industries are carried on, for the protection of mine investors, and especially for the better protection of the health and safety of workmen in the mines and metallurgical establishments.”

- 2011 **Stanley Dempsey** – Retired Chairman of the Board, Royal Gold, Inc.
“Raising the bar for achievement in the mineral industry, for his career long effort to promote the mineral industry in the public and governmental arenas, and for his exhibiting a strong ethical standard in all his business dealings”
- 2013 **Jonathan G Price** – Retired Director and State Geologist, Nevada Bureau of Mines and Geology
“For significant contributions to the science of economic geology in the minerals industry, academia, and government. His dedication to public outreach has improved our understanding and appreciation of the vital role played by mining and minerals in Nevada and the United States.”
- 2015 **David L Kanagy** – Executive Director, Society for Mining, Metallurgy, and Exploration
“For outstanding leadership that has advanced the global collaboration of technical information, networking and professional development for mining professionals and enhanced public education about mining and minerals.”

Actions & Projects of the Society – 1908-2015

Since its organization, in 1908, the Mining and Metallurgical Society of America has expressed itself formally upon questions of national or public interest. Following is a compendium of many, but not all, issues in which the Society has become engaged.

Protection of Mine Investors - Adopted by letter ballot, August 7, 1909, the formal action recommended that mining companies should publish an annual report within 90 days of the close of the fiscal year, giving both the financial and technical information bearing on their operations, including a competent estimate of ore reserves.

Appointment of State Mine Inspectors - By vote of the membership, July 18, 1911, it was "Resolved that, in the opinion of the Mining and Metallurgical Society of America, State inspectors of mines should be appointed and should be not elected."

Supreme Court of the United States - By vote of the membership, January 8, 1912, the Society adopted a memorandum to the President of the United States calling attention to the importance of carefully considering the mining industry in its relations with the Federal Courts and requesting that jurists of distinction and noted ability and experience in this and associated industries be considered in connection with the filling of a vacancy in the Supreme Court.

Alaska Coal Lands - Adopted by letter ballot, January 8, 1912, the resolution recommending a complete program for the development of Alaskan coal deposits.

U.S. Bureau of Mines - By vote of the membership, January 8, 1912, a draft for a bill establishing the U.S. Bureau of Mines was approved. (See p. 3, Bulletin No. 44.)

A Public Building for Geology and Mining - By vote of the membership, February 16, 1913, the Congress was urged to provide in Washington for the joint use of the U.S. Geological Survey and the

U.S. Bureau of Mines a fireproof building of an architectural design reflecting the importance and dignity of the mining industry.

Patent Legislation - By vote of the membership, February 16, 1913, the Society urged the Congress of the United States to hold in abeyance all proposed legislation affecting the patent system in whatsoever way until such time as a proposed commission shall have had time to hold hearings and make a study of the subject and report.

Oil Land Legislation - Resolutions were introduced by the San Francisco and New York sections, which were amended by the Council and adopted by it on March 13, 1913. They were adopted by members' letter ballot on May 1, 1913, and recommended a federal law covering the acquirement of oil, gas and asphalt lands and their development after leases were given, and their transfer.

Revision of the Mining Law - By letter ballot, canvassed March 30, 1914, a complete revision of the federal mining law was recommended, including location of claims without actual "discovery"; placer locations; abolishing the apex law and prohibiting retroactive legislation.

A special meeting in Washington, December 16, 1915, recommended the implementation of the resolutions by a board of five members from the Mining and Metallurgical Society of America, five from the American Institute of Mining Engineers, five from the American Mining Congress and possibly 10 independent representatives from Industry.

On October 2, 1916, the Society, after letter ballot, made specific recommendations as to "Discovery"; location of and size of claims; assessment work and patenting; abolition of extra-lateral rights and appeals from Land Office decisions.

Additional work was done by various committees and their ideas submitted by the Bureau of Mines, and used in the Arentz revision of the mining law (1921), but these proposals were never submitted to membership ballot. This work is summarized in Bulletin 204.

Extra War Revenue Tax on Professional Incomes - On April 18, 1918, the Society adopted a resolution protesting against surtaxes on professional incomes.

Minerals Control Legislation - A resolution was adopted July 1, 1918, recommending minerals controls be restricted to the following: antimony, arsenic, ball clay, bismuth, bromine, cesium, chalk, chromium, cobalt, corundum, emery, fluorspar, ferrosilicon, fullers earth, graphite, grinding pebbles, iridium, kaolin, magnesite, manganese, mercury, mica, molybdenum, osmium, sea salt, platinum, palladium, paper clay, potassium, pyrites, radium, sulphur, thorium, tin, titanium, tungsten, uranium, vanadium, zirconium.

Action Respecting Mexico - Following the cold-blooded murder of the Society's member, E. L. Dufoureaux, the Society, by ballot of June 19, 1919, called for steps to be taken to restore law and order in Mexico.

Referendum Regarding Labor - On December 18, 1919, the following resolution offered by the Committee on Economics was submitted to a ballot vote by all members. One hundred and fifty-six votes were cast in favor of the resolution, 10 votes were cast in opposition.

“Resolved, there should be concerted effort to show labor, as it can be shown, that by sound economic theory labor is the residual claimant upon the produce of industry; that its residual claim in the United States is 70 to 80 percent of the whole; that statistics prove that labor gets it; that statistics show that as mine increases the produce of mere manual labor, the latter gets the major part of the increment; that the part of the produce of industry that labor does not get, it cannot get by any economic means; that in trying to get by confiscatory means more than its residual share, labor not only does not get it, but also loses more or less of what it was previously getting as its residual share; that the only way that labor can get any more than it does now get is to produce more; that slacking in any form, either by working full time at only partial efficiency, or by working part of the time, is directly opposed to labor's own interest, and that labor is the greater sufferer thereby than anybody else.”

Referendum on Foreign Ownership of Mineral Resources - At a meeting of the Council on April 8, 1920, a resolution from the New York Section of the Society was read asking the Council to take favorable action upon Senate Bill No. 3334 which proposes that foreign nationals, owners of mineral and oil lands in the United States, and foreigners interested in our mineral resources in any manner, shall be accorded the same right and privileges as accorded to our nationals in foreign lands respecting mineral resources in those lands.

A referendum vote was taken in May, 1920, the result of which was later submitted to the membership in the form of a letter stating that the result of the referendum upon the principles set forth in the Curtis Bill was an almost unanimous vote in their favor.

Resolution on Foreign and Domestic Mining Policy - The New York Section on December 14, 1922 adopted the report of the Committee on Domestic and Foreign Mining Policy, published as Bulletin 151 (November 15, 1921) and recommended that the Institution of Mining and Metallurgy be invited to cooperate in making the policy international. On May 16, 1922, the Council instructed that a letter ballot be taken on this resolution.

Result of the ballot was as follows: One hundred and seventy-five replies were received; one hundred and sixty-three were in favor of the statement of principles; ten members took exception in a greater or lesser degree to various parts of the statement of principles; two voted against the entire statement.

The report of this Committee and its subcommittees eventually formed the basis for the publication "International Control of Mineral Resources" published in 1926.

Employment of Engineers by Bankers - On June 3, 1924, Allen H. Rogers introduced a resolution in the Council that investors should be educated to demanding an engineer's report in connection with new floatations; that the society should urge on bankers the desirability of such procedure; and stock exchange authorities should require engineers reports as a requisite for listing a security. At a Council meeting on March 18, 1925, it was decided to submit the resolution to

the Society. It was carried by 148 to 17 (May 21, 1925). See Bulletins 171 and 179 and Council minutes of February 24, 1926.

Definition of Engineering - The original committee to consider this definition was appointed on June 8, 1926, and reported January 13, 1927. The report was published with discussion as Bulletin 190. the resolution was submitted to the Society (Council Minutes September 10, 1929), and carried by a vote of 106 to 42 (Executive Committee Minutes of December 28, 1929). the definition adopted was:

“Engineering is the practical application of scientific methods to the utilization of the resources of nature, for the use of man.”

Declaration of Principles - On April 24, 1928, a committee on Ethics, consisting of George E. Collins, Chairman, Richard A. Parker and Pope Yeatman recommended a Declaration of Principles which was in 1929 submitted to the Society for letter ballot, and was adopted on March 25, 1930, 134 members voting for the Declaration, 16 against of whom one was for paragraph (1) but against paragraph (2). This Declaration of Principles was published as "Bulletin" 199 (Vol. XXII, February 1929, page 33). The vote was reported in "Bulletin" 211 (Vol. XXIII, June 1930, page 95).

On Taxation -The resolution pointed out the destructive effect of over-taxation on the mineral industries. Resolution adopted June 6, 1938 and printed as "Bulletin" 248. Sent to the President, Vice President and Congress.

Essential Materials for the National Defense - Resolution adopted at a meeting on December 13, 1938. Vote reported March 24, 1939 (Minute Book, page 333). The resolution was printed as Bulletins 247 and 250, adopted by a vote of 160 to 5. See also Minute Book, page 338. Sent to the President, Vice President, Cabinet and Congress.

U.S. Bureau of Mines - Desirability of taking the Directorship out of politics. Resolution introduced January 9, 1940. Adopted February 23, 1940 and printed as Bulletin 254. Sent to the President, the Secretary of the Interior and Congress.

Increased Stockpiles of Strategic Materials - Adopted June 7, 1940. Printed as Bulletin 257. Sent to the President, Secretary of the Treasury and all members of Congress.

Post-War Policy for the Mineral Industry - Suggestions concerning a rational policy. Adopted August 2, 1943, printed as Bulletins 268 and 273. Sent to the President, members of the Cabinet and members of Congress. See Minutes, page 384, September 1, 1943. The Society opposed the Scrugham Bill, S. 1160, as not being a satisfactory policy.

Kilgore Bill - This Bill, Senate 702, House 2100 (1943), which would apparently nationalize all research activities in educational institutions and undermine the patent system, was opposed by the Society by personal presentation and by a formal action adopted by letter ballot November 15, 1943, sent to the President, all members of the Cabinet and all members of Congress. The vote approving the formal action was practically unanimous (News-Letter, November 15, 1943).

Mine Taxation - The Society adopted a resolution on a mine taxation program by a vote of 211 to 3 on May 14, 1946, which was sent to the President and to Congress. This was discussed in Bulletins 272 and 275 and printed in final form in Bulletin 277.

Labor-Management Relations - A resolution recommending legislation in the field of Labor-Management relations was adopted by a vote of 205 to 1 on February 21, 1947. This is printed in full in Bulletin 278.

A Proposed Mineral Policy for the United States -Elmer Pehrson gave a talk on this subject before the Society on November 17, 1948. It was approved by the meeting but not submitted for ballot. However, 120 copies were sent to the Secretary of the Interior, the Director of the Bureau of Mines and to the members of the Mineral and Foreign Affairs Committees which resulted in so many requests for additional copies that the Bulletin 285 was reprinted.

Mine Taxation - The Society submitted a resolution concerning Mine Taxation to its members on April 4, 1950, following a questionnaire to its members March 8, 1950 and a meeting was held in New York,

March 21, 1950. While the resolution was still being balloted upon, the Society was represented at the House and Senate Committee meetings in Washington by S. H. Williston, many of the points in the resolution being put into the law. The final vote was 137 unreservedly for all six propositions, 23 voting “no” on one or more proposals but an average of 153 for and 7 against for the ballot.

Gold Standard - A resolution was introduced at a meeting of the Society on January 8, 1952, recommending a return to the gold standard. It was submitted and approved by a vote of 207 unreservedly for; 7 who suggested small changes and 8 were against (374 entitled to vote). This resolution was sent to the President, Vice President, members of the Cabinet and to all members of Congress.

Income Taxes - A Resolution was submitted to the membership for secret ballot on January 28, 1957. The results were 79.4 percent of the votes cast were for the Resolution without change, 17.4 percent approved but suggested small changes in wording, 2.2 percent voted against, and 1.0 percent were split ballots. This resolution was sent to the President of the United States, the Vice President, members of the Cabinet and all members of Congress on June 7, 1957. Printed in full in Bulletin 306.

Labor-Management Relations – A Resolution was submitted by mail to all members of the Society for secret ballot on November 30, 1957. A total of 98.2 percent of the votes cast were for the Resolution without change, and 1.8 percent voted against the resolution. This resolution was sent to the President of the United States, the Vice President, members of to the Cabinet, and all members of Congress on January 15, 1958. Printed in full in Bulletin 308.

Wilderness Act, S. 174 - The Society devoted six months to a careful study of the Wilderness Act, S. 174. As a result, “A STATEMENT” was prepared by the Public Lands Committee (published in the Society Bulletin No. 316) calling for amendment of this Act. This statement, containing pertinent tables, maps, photographs and appendix, was presented to the House Committee on Interior and Insular Affairs, Eighty-seventh Congress, Second Session Hearings in Washington, D.C., May 7, 8, 9, 1962. At the same time the President of the Society, James Boyd, appeared before the House Interior and

Insular Affairs Committee, and his statement is published in the previously mentioned Bulletin.

Special Publications of the Society - Apart from reports by special committees on various minerals, published as Bulletins through the early 1960's the Society has published booklets: "World Survey of the Zinc Industry" (1931), by W. R. Ingalls, and "Secondary Copper" (1936), by Percy E. Barbour, also in conjunction with the American Institute of Mining and Metallurgical Engineers "International Control of Mineral Resources" (1926), a collection of reports on strategic and scarce minerals by committees from the two societies, edited by H. Foster Bain, Donald M. Liddell and F. F. Sharpless.

State of the Mining Industry – Throughout 1960's the MMSA became involved in an over-all study of the status of the mining industry in America. Subjects reviewed included 'Trends in Labor Relations', Washington's views of the Mining Industry, the Income Tax law as related to mining, long and short term business outlook, the 'Changing Pattern of Raw Material Markets', stockpiling, public land issues nuclear energy and public minerals policy. Other topics included 'Mineral Exploration Challenges of the Next Decade' (1967), 'Copper – New Thoughts on an Old Theme', and 'Atomic Power – An Emerging Industry; and other similar topics

Mining Publications – In 1966 the Society published two documents related to mining worldwide – 'Developments in the Non-Ferrous Metallurgical Industry' and 'Science in Old Russia and the U.S.S.R.' Publication was underwritten by the newly established Jackling Fund.

Environmental Issues – The early 1970's gave rise to numerous studies and discussions within the society on environmental issues facing society within the U.S. by MMSA participants. 'Environmental Problems Facing the Extractive Industries' was considered by a working group including representatives of AS&R, Copper Range, Callahan Mining, Molybdenum Corp., Newmont Mining, Anaconda, Inspiration Copper, National Lead and others within industry. Another subject considered by the Society was Northcutt Ely's 'Mineral Policies on Federal Lands' published in late 1969.

Society Governance - In the mid-1970's the Society had a "mid-life" crisis as the nature of its membership changed and decreased in number, the goals of society changed from a pre-war industrial society to one of a much larger middle class which desired a more upscale economic status, more leisure time, and a cleaner environment. This change in both society and MMSA membership created a serious crisis within MMSA as to how it should go forward into the latter quarter of the 20th Century. The issue was "resolved" at the 1980 Annual Meeting by a consensus of Society members believing the *"Society can operate effectively as a peer grouping of select 'individuals' within the minerals industry just by being in existence and available for action when and if appropriate. Further, the Society best not be "forced" into constant, programmed activities of a type best left to organizations such as AIME, AMC, et al, but provide thought and actions whenever critical – as a 'mentor'."*

Public Lands Issues – Public lands issues became again a topic of Society involvement in the late 1970's and early 1980's. In 1978 the Society published two position papers, 'Public Lands' and 'Copper', both dealing with continuing issues of public interest related to the mining industry. In addition, Thomas V. Falkie, then recent Director of the US Bureau of Mines addressed the 1979 Annual Meeting on the topic of 'Interpretations of Current Washington Minerals Policy'.

Minerals Education – The 1980's saw the Society become engaged in mineral education. Early in this decade the Society began its now longstanding support of the Minerals Information Institute by sponsoring MII's 'Energy, Resources and the Environment', a secondary school textbook. This publication, now titled 'Global Science: Energy, Resources and the Environment' in its soon to be published 7th edition, has reached over 1.5 million high school students in schools in all 50 U. S. states and several foreign countries.

In 1981 the Society itself published 'Minerals Education Institutions', a catalog of colleges and universities providing mineral industry curriculums in North America. In 1982 it published the first edition of 'Opportunities for a Career in Mining and Metallurgy'. Copies of this publication, distributed by the Society to all high schools in the United States and English speaking Canada, if stacked one top of each other would be as tall as the Empire State Building (including its

radio tower) with enough copies left over for one to be placed in each seat in the Radio City Music Hall in New York City.

The 1990's saw Society forming an Education Committee. This Committee began its activities by participating in the second annual Minerals and Mining Education Conference of the National Energy Foundation in 1993. The Society continues its efforts in mineral education to the current date.

Along with these educational endeavors the Society has sponsored Student Paper contest for mining and metallurgical college students throughout most of the latter part of the 20th Century.

Support of the U.S. Bureau of Mines – The Society continued to provide support for the US Bureau of Mines and its activities throughout the mid-1980's through mid-1990's. In such endeavors it testified before Congress on USBM activities and needs, participated in research coordination between the USBM and industry, and took part in proceedings of the 'National Critical Materials Council' on behalf of the mining industry. The Society also provided member support to the Bureau's Flotation Review Committee in the early '90's.

Industry History – In the 1980's the Society began the sponsorship of the Oral History Series "Western Mining in the 20th Century" prepared by Bancroft Library of the University of California. This collection of oral histories of 'notables' of the mineral industry comprises of more than 104 interviews on mining history conducted from 1987 through the 1990's. The Bancroft Library launched a new program "Global Mining and Materials Research" in 2015.

Publications and Position Papers – In 1991 the Society distributed 'Competitiveness of the U.S. Minerals and Metals Industry' to its membership. In the same year it began a series of Position Papers which included, among others:

MMSA Policy Statement – 4/91
Role of Mineral Production in Our Society –12/91
Federal Mining Legislation – 5/93
A New Initiative in Education – 9/93
Federal Mining Legislation – 4/95

Public Lands Issues – Renewed engagement in public lands issues occurred in the 1990's with position papers on public land issues, sponsorship of work by the 'Political Economy Research Center' ('PERC') on their research of mineral related public lands issues, coordination of individual member support on public lands issues with other organizations such as the Northwest Mining Association, MMSA-NMA joint working group on mining strategy, support of member participation in Resource Advisory councils of the USFS and BLM and similar activities. In addition the Society provided testimony before the House Subcommittee on the 'Aging of the Energy and Mineral Industry Work Force.'

Related Organization Activities – In 2004 the Society was recognized by the Mining Association of the Southwest by receiving its '2004 Industry Partnership Award.' The Society honored the Society for Mining, Metallurgy and Exploration (SME) by presenting it with a bronze sculpture commemorating SME's 50th anniversary. In addition it established the MMSA Presidential Scholarship Fund with an initial \$50,000 contribution to be administered by the SME Foundation. This scholarship fund is for undergraduate and graduate students the mineral engineering field of study.

Qualified Professional Membership – In 2005 the Society established a new membership class, that of Qualified Professional ('QP') to meet a need within industry of individuals to certify public technical documents required by North American, Australian and South African stock exchanges. At the end of 2015, the Society had 197 QP members.

MMSA/SME Presidential Scholarship – The Scholarship was established at the 2008 Centennial Banquet celebration. The funds were donated to the SME Foundation to honor the MMSA 100th anniversary. One or two students receive the scholarship every year.

Washington DC FlyIn – In 2010, MMSA started sending women members to the annual FlyIns organized by the Women's Mining Coalition. Over 50 women from all parts of the mining industry

attend the FlyIn and small groups visit over 250 congressional and agency offices every year. Discussions with members of Congress and their aides cover 15 to 20 current topics that affect the mining industry.

Minerals For a Green Society Symposium – The one-day symposium in February 2010 focused on the need for and availability of minerals in the development of a 'green society,' and the critical minerals needed for modern technology. The goals of the meeting were to:

- Highlight facts about minerals that are critical for our changing society, including what is needed and how vulnerable the U.S. may be to disruptions in global supply, and
- Provide an opportunity for networking among individuals who are concerned about mineral-supply issues and who can take action to assure U.S. competitiveness in a green economy.

Eleven speakers gave presentations about aspects of minerals availability, supply, and how other countries fit into the picture. Former U.S. Senator Wayne Allard gave a luncheon presentation about how mining is important in our every day lives. The presentations are available on the MMSA Web site.

MMSA Strategic Planning Retreats – The MMSA Council participated in two retreats during 2015. The main theme was “United in the Past, United in the Future”. The main questions addressed at the retreat were:

- What is the value that MMSA gives back to its members?
- What should the direction be for MMSA in the future?

More retreats are scheduled that will address ideas and strategies that will keep MMSA a relevant Society for the next 100 years.

Presidents of The Society

Henry S. Munroe	1908-1909
J. Parke Channing	1910-1912
Henry M. Chance	1913
James F. Kemp	1914
W. R. Ingalls	1915
J. R. Finlay	1916
W. R. Ingalls	1917-1918
H. H. Knox	1919
Waldemar Lindgren	1920
J. E. Spurr	1921
Allen H. Rogers	1922-1923
Thomas H. Leggett	1924
R. M. Catlin	1925
Clinton H. Crane	1926-1928
G. Temple Bridgman	1929-1930
Louis S. Cates	1931
Arthur Notman	1932
Sidney H. Ball	1933
H. DeWitt Smith	1934
Otto Sussman	1935
Erle V. Daveler	1936
Cleveland E. Dodge	1937
H. T. Hamilton	1938
George A. Easley	1939-1940
John F. Thompson	1941-1942
Frederick W. O'Neil	1943-1944
Ralph B. Williams	1945
Francis P. Sinn	1946
R. L. Hallett	1947
M. G. Gentry (resigned)	1948
J. C. Kinnear	1948-1949
Felix E. Wormser	1950-1951
James L Head	1952
Donald H. McLaughlin	1953

Alan M. Bateman	1954
Donald M. Liddell	1955
Philip E. Wilson	1956-1957
Richard F. Goodwin	1958-1959
James Boyd	1960-1962
Francis Cameron	1963-1964
Carleton S. Harloff	1965-1966
Charles F. Fogarty	1967-1968
Edward McL. Tittmann	1969-1970
James K Richardson	1971-1972
Robert B. Koenig	1973
Robert W. Bridgman	1974
Robert S. Shoemaker	1975-1976
Kenneth J. Kutz	1977-1978
Peter B. Nalle	1979-1980
Milton H. Ward	1981-1982
William H. Dresher	1983-1984
Hans W. Schreiber	1985-1986
Robert R. Beebe	1987-1988
George A. Mealey	1989-1990
Kenneth R. Coyne	1991-1992
Henry Colen	1993-1996
Kenneth Brunk	1997-1998
John W. (Jack) Goth	1999-2000
K. Marc LeVier	2001-2004
Robert W. Schafer	2005-2006
Robert V. Washnock	2007-2008
Jim Metsa	2009-2010
Mark K Jorgensen	2011-2012
Matt R Bender	2013-2014
Bernard J. Guarnera	2015-2016

Recent Society Contributions

The Society makes use of funds generated by the Jackling Fund to sponsor various studies, books, courses, workshops, films, seminars and other endeavors which it deems helpful in promoting the advancement of mining and metallurgy. The activities represented by these donations have many forms as expressed by those in receipt of contributions in the past eleven years.

JACKLING FUND -- HISTORY OF DONATIONS - 2003 - 2007

2003	Mineral Information Institute	\$30,000
	PERC	\$20,000
	Colorado Mining Exhibit Foundation	\$2,000
	Colorado Mining Association Education Foundation	\$2,000
	Western Museum of Mining and Industry	\$2,500
	National Energy Foundation	\$5,000
	Mountain States Legal Foundation	\$7,500
	\$69,000	
2004	Mineral Information Institute	\$30,000
	University of Arizona	\$3,000
	Colorado Mining Association	\$5,000
	Seaman Mineral Museum	\$7,500
	Colorado Section MMSA	\$5,000
	\$50,500	
2005	Mineral Information Institute	\$40,000
	Mountain States Legal Foundation (for 2004 year)	\$5,000
	Mountain States Legal Foundation (for 2005 year)	\$5,000
	Colorado Section MMSA	\$5,000
	\$55,000	
2006	Mineral Information Institute	\$40,000
	Colorado Section MMSA	\$5,000
	SME Workshop for Sustaining Mineral Education	\$15,000
	Arizona Section MMSA	\$3,000
	Sculpture to Recognize SME's 50 th Anniversary	\$796
	\$63,796	
2007	Mineral Information Institute	\$40,000
	Colorado Section MMSA	\$4,000
	SME Foundation – MMSA President's Scholarship Fund	\$50,000
	Colorado Mining Association – Summit County Litigation Fund	\$25,000
	Mountain States Legal Foundation (for 2006 year)	\$5,000
	\$124,000	

2008	Mineral Information Institute	\$40,000
	Mountain States Legal Foundation	\$10,000
	Colorado Section	\$4,000
		\$54,000
2009	Colorado Mining Exhibit Foundation	\$2,000
	Mineral Information Institute	\$40,000
	Colorado Mining Association, Education Foundation	\$2,000
	Mountain States Legal Foundation	\$5,000
	Seaman Mineral Museum	\$2,000
		\$51,000
2010	Mineral Information Institute	\$40,000
	Mining and Metallurgical Society of America-Denver	\$4,000
	Mountain States Legal Foundation	\$5,000
	Colorado Mining Association	\$25,000
	SME	\$1,000
		\$75,000
2011	Mineral Information Institute	\$40,000
	Northwest Mining Association - "I Dig Mining"	\$25,000
	Colorado Section	\$5,000
	Mountain States Legal Foundation - from Society Funds	\$5,100
	Colorado Mining Association - from Society Funds	\$2,500
		\$77,600
2012	Mineral Education Coalition	\$40,000
	Northwest Mining Association - "I Dig Mining"	\$10,000
	MMSA Colorado Section	\$2,000
	Resources for a Better Colorado - from Society Funds	\$5,000
		\$57,000
2013	Colorado Mining Association Education Foundation	\$10,000
	MMSA Colorado Section	\$2,000
	Mountain States Legal Foundation	\$5,000
	Mineral Education Coalition	\$40,000
		\$57,000
2014	Mountain States Legal Foundation	\$5,000
	Mineral Education Coalition	\$40,000
	Colorado Mining Association	\$2,500
	Lowell Institute for Mineral Resources	\$10,000
	Resources for a Better Colorado	\$7,500
		\$65,000
2015	Mineral Education Coalition	\$40,000
	UC Berkeley Oral History Center of the Bancroft Library	\$10,000
	Mountain States Legal Foundation	\$5,000
	MMSA Colorado Section	\$2,000
	Women's Mining Coalition	\$1,100
	Mining Foundation of the Southwest	\$1,500
		\$59,600
	Total - 2003 – 2015	\$858,496

Mining and Metallurgical Society of America

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Phone 303-444-6032

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2015-2016

Officers:

**President –
Bernard J. Guarnera (2016)**

**Vice President –
Michael D.S. Blois (2016)**

**Secretary –
Amy Jacobsen (2016)**

**Treasurer –
Christopher Wyatt (2016)**

**Ex Officio –
Matt R Bender (2016)**

**Executive Director –
Betty L. Gibbs**

Councilors:

**Arizona Section – Ben
Sternberg (2017)**

**Nevada Section – Jack
McPartland (2018)**

**Utah Section
Tony Troutman (2018)**

**Colorado Section – Robert
Cameron – Chairman (2017)
Jurgen Brune (2018)
Kirk McDaniel (2016)
Mark Nesbitt (2018)
Susan Wager (2017)**

Councilors – At Large:

**Dayan Anderson (2018)
Donald Cameron (2019)
James L. Hendrix (2016)
John Wiebmer (2017)
Will Wilkinson (2017)**

February 2016

