



# TMS

The Minerals, Metals & Materials Society

## **SETTING THE COURSE:**

**2012 ANNUAL REPORT**



## A Letter from the TMS Leadership

Dear TMS Members and Stakeholders,

“Setting the Course” is not only the title of this annual report—it was a theme that permeated the society’s every decision in 2012. During the past year, TMS initiated a strategic plan, consisting of the following five goals, to guide the society in its growth and development through 2015:

1. Enhance our status as a volunteer-centric society
2. Be the destination society for young professionals: technically, professionally and socially
3. Sustain and grow our core as The Minerals, Metals & Materials Society
4. Advance materials solutions for energy and environmental challenges
5. Be the recognized home for and advocate of materials and manufacturing innovation

These goals can be considered in two complimentary groups: Membership Goals (goals 1 and 2) and Technical Goals (goals 3, 4, and 5). These two groupings nicely summarize what is important to TMS. We are a society interested in offering trusted platforms through which members can disseminate technical information and that allow new technologies to flourish. But we are more than a vehicle for distributing technical information. We are also an organization that is intensely interested in nurturing the development of our members. We strive to offer members extensive opportunities to network, to learn skills—both technical and nontechnical—that can help them in their careers, and to engage in experiences—from travel to volunteering—that are both personally and professionally rewarding.

As you read this report, you will see how the society made strides for members in both areas—technical and personal—in 2012. You will also notice that 2012 was more than just a year of planning and dreaming. As you’ll see on the following pages, the society has already begun to implement programs related to these five strategic goals, while continuing to offer all of the services and benefits that TMS members have come to expect.

In summary, 2012 truly was a year in which we set the course for the society’s future, but in looking toward the future we did not neglect the present. We hope that you agree as you read this year’s annual report of the activities of The Minerals, Metals & Materials Society.

Sincerely,

Wolfgang Schneider  
2012 TMS President

James J. Robinson  
TMS Executive Director

# 2012 TMS BOARD OF DIRECTORS

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**TMS 2012-2013 Board of Directors:** From left to right: Edward D. Herderick (2013 Public & Governmental Affairs Chair), James J. Robinson, William J. Ready, David H. DeYoung (2013 TMS Light Metals Division Chair), Neville R. Moody, Carl M. Cady, Elizabeth A. Holm, John N. Hryn, Robert W. Hyers, Wolfgang A. Schneider, James W. Sears, James C. Foley, Adrian C. Deneys, Garry W. Warren, David Alan Shifler, David F. Bahr, Rajiv S. Mishra (2013 TMS Structural Materials Division Chair), Kevin J. Hemker, and Hani Henein (2013 TMS Vice President).

## Strategic Goal #1: Enhance our Status as a Volunteer-Centric Society

TMS is a volunteer-driven society—meaning that every meeting, publication, award selection, and continuing education course the society offers is the direct result of action by dedicated volunteer leaders and members. The society's 12,000+ members devote their time and efforts to participating in technical committees, organizing symposia, presenting papers, reviewing journal articles, and setting standards for materials education and professional licensing. In return, these activities help volunteers to develop leadership, presentation, and management skills, as well as to build networks of professional colleagues.

To recognize this vital aspect of TMS membership, the society has chosen to focus its first strategic goal on its volunteers by making opportunities more accessible to all members and by recognizing and rewarding the efforts of volunteers.



Do we hope this initiative will help us gain more volunteers? Of course we do. More member participation results in a more vibrant society that provides more useful services to the materials science and engineering community. But more than that, we hope that this initiative helps our volunteers to understand how much we appreciate them—and how much they can gain professionally by saying 'Yes' to TMS.

### Steps Taken in 2012 to Meet this Goal Included:

#### Volunteer Resources Created and Centralized:

To simplify and clarify the process of volunteering with TMS, the society established Volunteer Central, an online resource that helps members connect with volunteer opportunities within the society. New volunteers can learn about positions available within TMS and can access online orientation materials to help acquaint them with their new roles. All of these resources can be accessed through Volunteer Central at [volunteer.tms.org](http://volunteer.tms.org).



#### Exclusive Benefits Created for Volunteer Leaders:

We place a high value on our volunteer leaders—the board members, division chairs and members, committee chairs and members, and symposia organizers who devote their time, their talents, and their passion to making the society and its activities a success. To demonstrate this appreciation, TMS created several benefits available exclusively to these volunteers at the TMS 2012 Annual Meeting & Exhibition and MS&T'12. These included free professional development seminars and designated lounges where busy volunteers could check e-mail, hold meetings, or simply grab refreshments between activities.



**Marian (Molly)  
Kennedy,**  
Clemson University

**“Volunteering has provided me with the ability to grow my leadership skills, learn how to successfully communicate, meet new colleagues, and learn about emerging materials developments.”**

## Strategic Goal #2: Be the destination society for young professionals: technically, professionally and socially

Nurturing the professional growth of newcomers to the field is good for everyone. It equips recent graduates with the tools and training needed to succeed in their careers. It provides employers with stronger contributors, enabling advances that benefit society as a whole. It also ensures that TMS has a qualified pool of talented volunteer leaders to draw from in the future.

That's why the professional development of young materials scientists and engineers is a strategic priority for TMS.

### Steps Taken in 2012 to Meet this Goal Included:

#### Awards and Opportunities Expanded for Young Professionals:



As a first step toward this goal, TMS dramatically expanded its existing programs for young professionals. Most notably, the society put the framework in place to double the size of one of its most recognized (and coveted) programs for young professionals: the Young Leaders Professional Development Award. As a result, TMS was able to accept 20 young professionals into this program in 2013 (up from 10 in prior years) and has plans to expand further to accept 30 members for 2014. This program provides funding for early-career professionals to attend the TMS Annual Meeting and participate in meetings of society leadership, providing important networking opportunities and an education in organizational leadership.

In 2012, TMS also accepted applications for a new International Scholar Program with the Federation of European Materials Societies (FEMS). Through this program, TMS selected a young professional member to travel to the FEMS Euromat Conference in September 2013 to present a paper. In exchange, TMS hosted one young professional from FEMS at the TMS 2013 Annual Meeting & Exhibition. A similar scholar program is already in place with the Japan Institute of Metals.

In addition, TMS laid the groundwork to become a full partner in the Emerging Leaders Alliance for 2013. This partnership among leading engineering, research, and science-based organizations provides high-quality leadership training and 'soft' skills development for participants. As a full partner, TMS will be able to send eight young professionals to the Emerging Leaders Alliance in 2013, up from five in 2012.

#### Signature Program Under Development:

New programs are on the horizon, as well. TMS formed an ad hoc Young Professionals Program Development Committee charged with developing a new TMS signature program to support young professional members. The committee had a productive meeting at the TMS 2013 Annual Meeting & Exhibition, and a set of recommendations is currently under development.

#### Networking Opportunity Created:



Networking is a top priority for many young members, so TMS created a special reception for the TMS 2013 Annual Meeting & Exhibition that provided an informal venue for young professionals to network with one another and with established leaders in the field.

## Strategic Goal #3:

# Sustain and grow our core as The Minerals, Metals & Materials Society

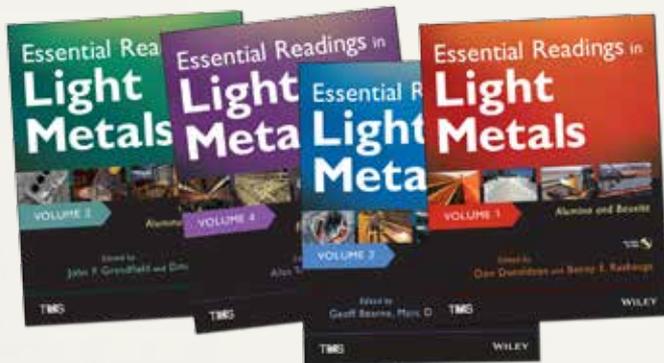
As the final goals of this strategic plan will show, TMS aims to branch out and make itself the home for several emerging technology areas. But TMS already is the home for many materials science and engineering technologies. This third strategic goal ensures that the society will continue to grow and create new opportunities for members within its traditional strength areas.

### Steps Taken in 2012 to Meet this Goal Included:

#### Core Technology Opportunities Identified:

TMS convened an ad hoc advisory team of experienced volunteer members to identify the society's core strengths and seek out potential new initiatives, products, and/or services for members in these areas. After approximately six months of work, the committee identified more than 20 specific development opportunities and presented a report to the TMS Board of Directors. The five TMS Technical Divisions are now following up on this effort to further define the TMS core from the perspectives of the divisions.

#### Essential Readings in Light Metals Compiled:

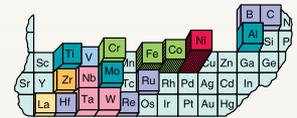


Volunteer members took on the enormous task of rigorously reviewing more than 40 years of Light Metals conference proceedings published by TMS. From this historical collection of content, nine volume editors and their editorial teams selected the most influential and highest quality papers and compiled them in a new, four-volume set, *Essential Readings in Light Metals*. The volume was released in early 2013.

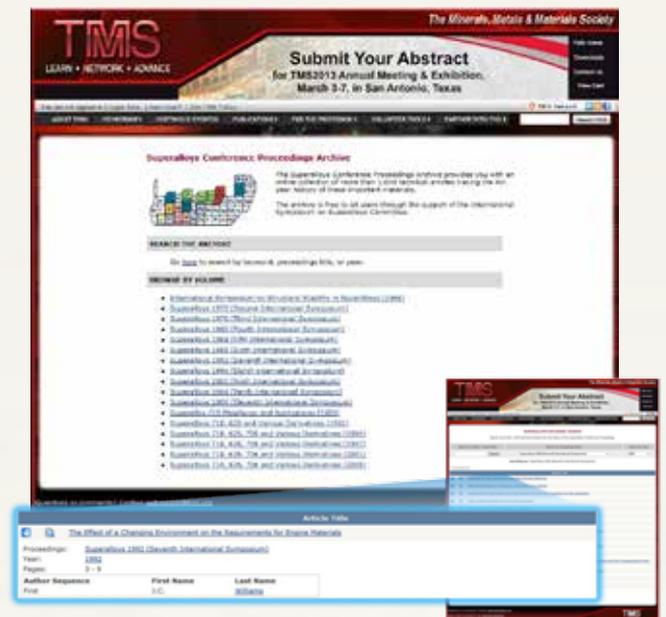
### Superalloys Web Resource Launched:



## SUPERALLOYS



Coinciding with the Superalloys 2012 conference, held in Champion, Pennsylvania, TMS launched the Superalloys conference proceedings archive. This online collection of more than 1,000 technical articles traces the 40-year history of these important materials. Through the support of the International Symposium on Superalloys Committee, this archive can be accessed at no charge by any web user.



### High-Strength Steels Initiatives Planned:

TMS staff began working with a team of energized volunteers to develop tactical plans for new initiatives in the area of advanced high-strength steels.

## Strategic Goal #4:

# Advance materials solutions for energy and environmental challenges

Over the next several years, TMS will build and expand on its experience with energy and environmental issues to become recognized as the lead society in sustainable materials and manufacturing. TMS has already demonstrated its commitment to these issues through prior initiatives—most notably through its coordination of a study on behalf of the U.S. Department of Energy Advanced Manufacturing Office. This study determined that specific advances in materials and manufacturing can deliver significant energy, environmental, and economic impacts to U.S. businesses in as soon as two to ten years. By making this technology area a strategic focus, TMS is committing to seeing through the results of this important study and to supporting developments that will benefit society as a whole.

### Steps Taken in 2012 to Meet this Goal Included:

#### Innovation Impact Report Released:



In March 2012, TMS released the final report of a three-phase, two-year project, which was coordinated by TMS on behalf of the U.S. Department of Energy Advanced Manufacturing Office. The Innovation Impact Report identifies 54 specific opportunities that could save more than 2,800 trillion British thermal units of energy every year. TMS coordinated the contributions of more than 100 experts from a cross-section of professional societies to thoroughly examine materials and manufacturing advances that are critical to achieving a clean energy future in the United States. The full report and a non-technical summary of its key findings can be downloaded through [energy.tms.org](http://energy.tms.org).

#### REWAS 2013 Organized:

An international team of organizers planned the high-profile REWAS symposium on enabling materials resource sustainability for the TMS 2013 Annual Meeting & Exhibition. The symposium opened with a plenary session that included talks from five invited speakers on the topic of Realizing Sustainability, followed by eight sessions that explored the theme of enabling sustainability from various angles.

#### Carbon Management Technology Conference Held:



TMS was one of eight societies to sponsor the 2012 Carbon Management Technology Conference, held February 7-9 in Orlando, Florida. This inaugural conference drew professionals from all engineering disciplines to share their expertise and provide their perspective on the reduction of greenhouse gas emissions and adaptation to changing climate. TMS entered into an agreement with the other seven societies to hold a second Carbon Management Technology Conference in October 2013.

#### New Energy Journal Planned:



In 2012, the groundwork was laid for a new technical journal devoted exclusively to energy-related materials issues. *Metallurgical and Materials Transactions E: Materials for Energy Systems* opened for abstract submissions in March 2013 and will publish its first issue in March 2014.

#### Future Programming Coordinated:

Recognizing that energy issues span a wide variety of materials technology areas, TMS organized an Energy Networking Breakfast that gathered volunteers from 22 of the society's technical committees to discuss potential synergies and overlaps, particularly pertaining to energy-related programming. The event was held at TMS2013.

## Strategic Goal #5: Be the recognized home for and advocate of materials and manufacturing innovation

This strategic goal has three main components. TMS aims to enhance its position as the home for integrated computational materials engineering (ICME), be recognized as the organizational hub for intersociety activities in the materials and manufacturing innovation area, and establish new initiatives, products, and services for meeting industry needs in materials/manufacturing innovation. A tall order, certainly, but the society took many steps towards meeting this goal in the past year.

### Steps Taken in 2012 to Meet this Goal Included:

#### ICME Implementation Study Conducted:



On behalf of the U.S. Department of Defense, the U.S. Department of Energy, and the U.S. National Science Foundation, TMS led the study ICME Implementation in the Automotive, Aerospace, and Maritime Industries. The society convened five teams of scientists, engineers, and technical experts representing industry, government, and academia to identify, prioritize, and recommend key steps for rapid implementation of integrated computational materials engineering in the automotive, aerospace/aircraft, and maritime industries. Their final report was released in July 2013.

#### Materials/Manufacturing Leaders Convened:

At the TMS 2012 Annual Meeting & Exhibition, TMS convened thought leaders from the diverse sectors of the materials and manufacturing community to discuss and provide recommendations for fostering innovation. Nearly 50 participants were invited to learn about the current state of the materials innovation infrastructure and to help identify key opportunities and strategies. The summit resulted in the development of the Orlando Materials Innovation Principles, which provide guidance on pursuing collaborative efforts with the intent of accelerating the materials innovation process to drive manufacturing and economic growth.

#### IMMI Journal Launched:



TMS launched the open-access journal, *Integrating Materials and Manufacturing Innovation (IMMI)* to provide a trusted, peer-reviewed venue for accelerating the discovery, development, and application of materials, materials systems, and materials processes for practical use in manufacturing.

#### Resources Developed for the Materials Community:

TMS launched the Materials Cyberinfrastructure Portal, an online reference desk that offers tools, talent, resources, and support for implementing materials and manufacturing innovation approaches and concepts. TMS also worked with the National Institute of Standards and Technology to develop the MGI Digital Data Community, an online resource to support community building and interactions within the various disciplines of materials science and engineering. The goal of the community is to help develop the materials innovation infrastructure to support the Materials Genome Initiative (MGI).

#### ICME 2013 Planned:



Building on the success of the 1st World Congress on Integrated Computational Materials Engineering (ICME) held in 2011, TMS developed plans to hold a 2nd World Congress on ICME that would continue the conversation begun at the inaugural meeting. ICME 2013 was held in July 2013.

# 2012 IN REVIEW: A LOOK AT OUR CORE OPERATIONS

## A Change in Headquarters Leadership

In 2012, TMS underwent a change in leadership. James J. Robinson, who had served TMS in a variety of leadership positions for 28 years, succeeded Warren Hunt as executive director for the society. Prior to this, Robinson had been deputy executive director of TMS for two years. In that position, he managed the development and execution of the Society's programs and supported the Board of Directors, the Executive Committee, and other volunteer entities in a number of ways, including governance and strategic planning. Other past leadership positions within the society included chief operating executive, director of the Knowledge Management and Communications Department, and editor of the society's member journal, *JOM*.

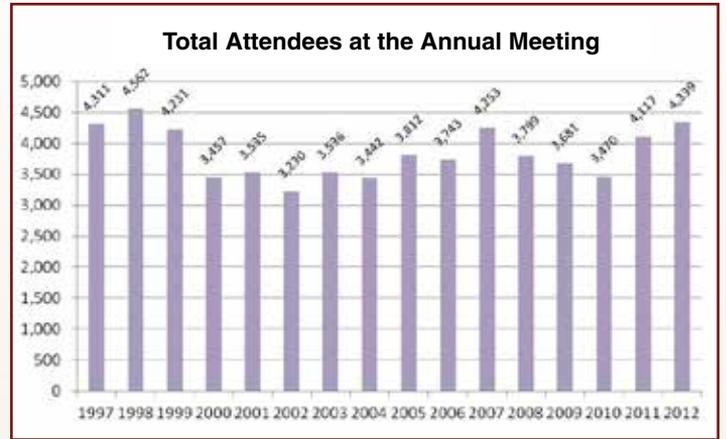
## TMS Meetings

In 2012, TMS sponsored or co-sponsored ten events for the materials science and engineering community.



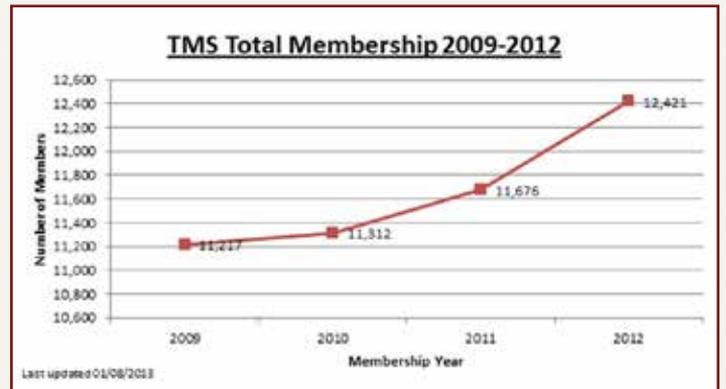
## TMS Annual Meeting Attendance

The TMS 2012 Annual Meeting & Exhibition was the best attended TMS Annual Meeting of the millennium with 4,339 attendees. View the chart (top right) for a broader view of attendance trends.



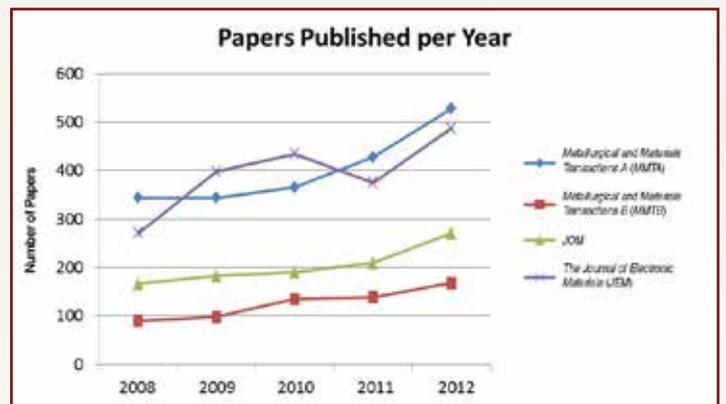
## TMS Membership

TMS membership numbers have steadily risen in recent years, surpassing 12,000 members in 2012.



## TMS Journals

TMS's publishing agreement with Springer Science + Business Media in recent years has allowed for more papers to be published in all TMS journals, as the chart below shows.



# 2012 IN REVIEW: A LOOK AT OUR CORE OPERATIONS

## TMS Foundation



Contributions to the TMS Foundation nearly doubled in 2012 to reach \$16,600. The TMS Foundation funds important society programs and initiatives, including:

- Programs for young professionals
- Student scholarships
- Outreach activities

The TMS Foundation provided over \$130,000 of grants, scholarships, and awards in 2012.

### TMS and National Policy Issues

As a U.S.-based organization that is international in its reach, TMS engaged in the following outreach-related activities to improve policies that impact scientists and engineers in the United States and internationally:

- Collaborated with other science and engineering organizations to encourage the U.S. government to ease travel restrictions on government employees that would harm international collaboration at conferences like TMS2013
- Selected the first TMS Materials Genome Initiative Fellow—Meredith Drosback—to represent TMS and the materials community in Washington
- Participated in Congressional Visits Days, which allows students and professionals to talk with Congressional leaders about the importance of funding science and engineering initiatives

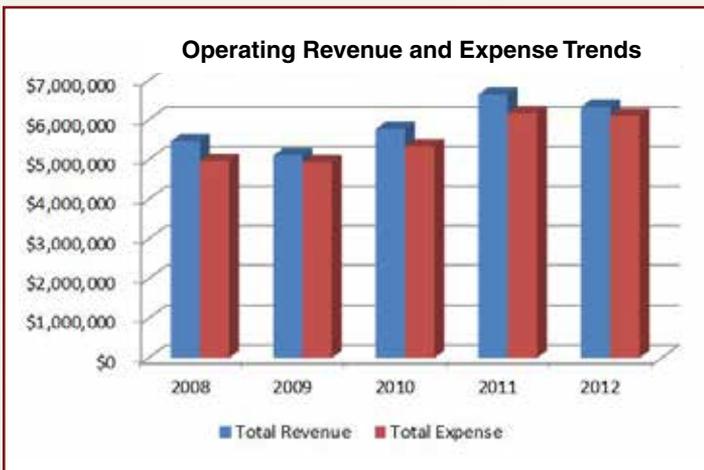
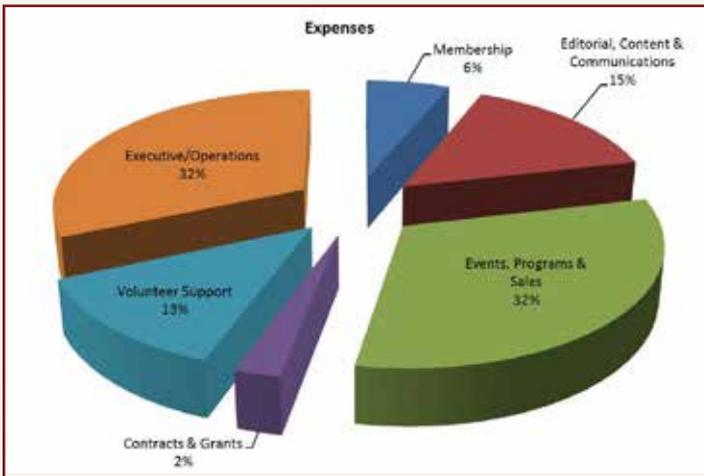
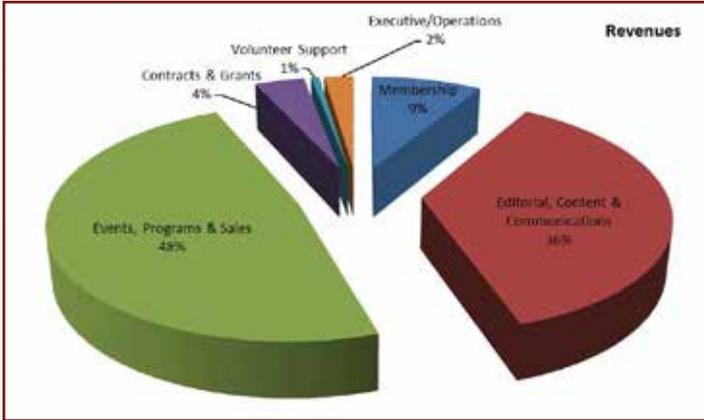
## A Financial Overview of TMS in 2012

Thanks to the dedication of volunteers and staff, TMS enjoyed another year of financial success in 2012. The table below presents the 2012 audited financial results from TMS operations, by major category, and 2011 results for comparative purposes. Growth was seen in membership, annual meeting and exhibition attendance, and journal subscriptions (archival journals as well as the member journal *JOM*).

SUMMARY OF OPERATIONS REVENUES AND EXPENSES		
Years ending December 31, 2012 and 2011		
REVENUES	2012	2011
Membership	\$543,777	\$517,468
Editorial, Content & Communications	\$2,307,727	\$2,159,999
Events, Programs & Sales	\$3,048,868	\$3,326,010
Contracts & Grants	\$243,837	\$366,033
Volunteer Support	\$39,648	\$117,509
Executive/Operations	\$145,879	\$153,853
<b>TOTAL REVENUES</b>	<b>\$6,329,736</b>	<b>\$6,640,872</b>
EXPENSES		
Membership	\$378,228	\$339,008
Editorial, Content & Communications	\$926,453	\$799,414
Events, Programs & Sales	\$1,927,376	\$2,046,994
Contracts & Grants	\$155,422	\$295,861
Volunteer Support	\$791,134	\$568,775
Executive/Operations	\$1,926,323	\$2,117,605
<b>TOTAL EXPENSES</b>	<b>\$6,104,936</b>	<b>\$6,167,657</b>
<b>EXCESS OPERATIONS REVENUE</b>	<b>\$224,800</b>	<b>\$473,215</b>

The pie charts on the next page show the distribution of revenue and expense by major business area in 2012, and the graph depicts five-year operational revenue and expense trends. With an eye to the future, TMS provided nearly \$438,000 of financial resources from the Reserve Fund to support action on the five key strategic plan areas.

# 2012 IN REVIEW: A LOOK AT OUR CORE OPERATIONS



TMS financial records are audited annually by an independent auditing firm.

## INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of The Minerals, Metals & Materials Society, Inc.

We have audited the accompanying statements of The Minerals, Metals & Materials Society, Inc. ("TMS") (a nonprofit organization), which comprise the statements of financial position as of December 31, 2012 and 2011, and the related statements of activities and cash flows for the years then ended, and the related notes to the financial statements.

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

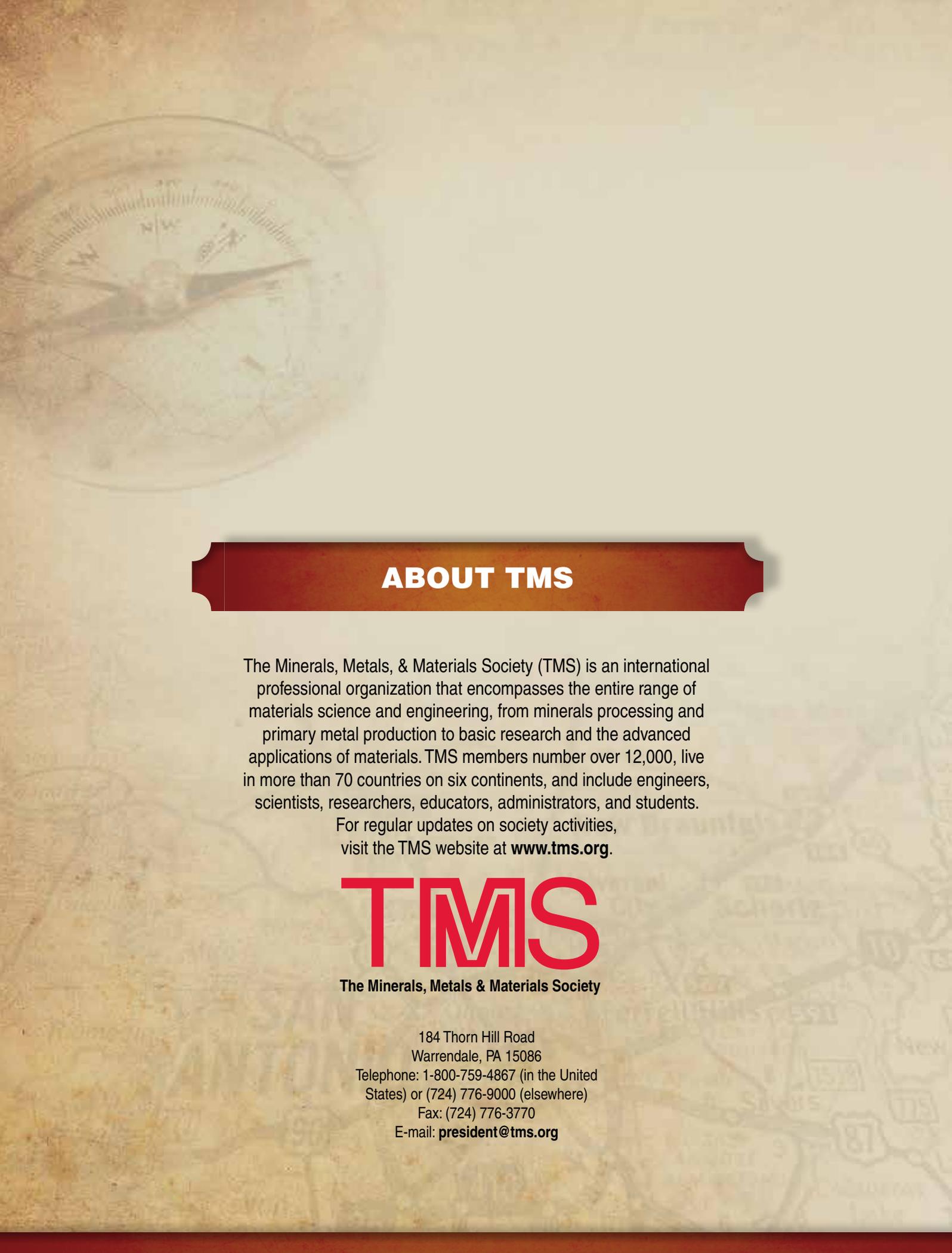
In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of TMS as of December 31, 2012 and 2011, and the changes in its net assets and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

*Stelmack Dobransky & Eannace, LLC*

STELMACK DOBRANSKY & EANNACE, LLC

McMurray, Pennsylvania

June 21, 2013



## ABOUT TMS

The Minerals, Metals, & Materials Society (TMS) is an international professional organization that encompasses the entire range of materials science and engineering, from minerals processing and primary metal production to basic research and the advanced applications of materials. TMS members number over 12,000, live in more than 70 countries on six continents, and include engineers, scientists, researchers, educators, administrators, and students.

For regular updates on society activities, visit the TMS website at [www.tms.org](http://www.tms.org).

# TMS

**The Minerals, Metals & Materials Society**

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