



BREAKING THROUGH

2009 SME ANNUAL CONFERENCE

Improve | Execute | Succeed

Featuring
Innovations That Could Change the Way You Manufacture

June 7-9, 2009

Hyatt Regency Philadelphia at Penn's Landing | Philadelphia, Pennsylvania



Society of
Manufacturing
Engineers



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**Get ready to attend a manufacturer's event . . .
an event designed to help you BREAK THROUGH
to new possibilities!**

You're a manufacturer. You bring imagination, materials, and technologies together to create products. Are you ready for an event designed to help you break through to new possibilities? The 2009 SME Annual Conference is your passport. This June, leading manufacturers will gather in Philadelphia to discuss the state of the industry, emerging trends, and the technologies and processes you can use now to improve and change the way you manufacture.

Manufacturing Matters

This is a manufacturer's conference, created by SME members: people who understand manufacturing, the need to innovate, and the need for cutting-edge management strategies. No other conference brings you face-to-face with fellow manufacturers from medical, aerospace, defense, automotive, consumer products, and other vital industries. Join them to:

- Meet experts who can help you compete in a new reality
- Not only be here tomorrow, but have a thriving organization
- Gain insight into best practices to keep your operations competitive
- Become an agent for change and growth at your organization

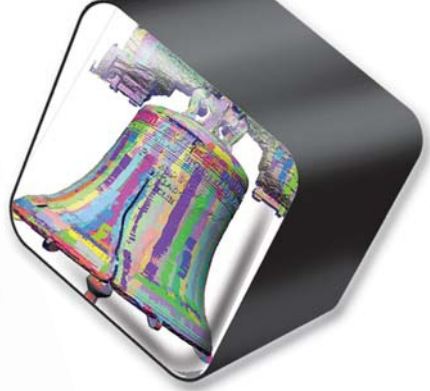
SME—Where Manufacturing Comes Together

The 2009 SME Annual Conference is open not only to Society members, but to all manufacturers looking for a proven source of expertise on technology breakthroughs, equipment applications, and leadership.

Not a member of SME? There isn't a better time to join!

Manufacturing has never been more competitive. Since 1932, manufacturing professionals just like you have used resources from SME as the tools and knowledge to innovate. Experience firsthand how SME's technical communities, conferences, expositions, publications, DVDs, manufacturing engineering certification program, Education Foundation, and so much more serve manufacturing and your professional interests.

www.sme.org/conference



SME MEMBER HIGHLIGHT

Michael Raphael, Direct Dimensions

In February 2004, engineers from Direct Dimensions used advanced 3D laser imaging technology to capture the exact shape and contour of the original Liberty Bell in Philadelphia. The raw 3D data was converted into a highly accurate digital CAD model permanently documenting the exact dimensions of our cultural heritage.

Raphael earned a BS in Engineering Science and Mechanics from Virginia Tech, followed by a Masters of Engineering Administration from George Washington University. During his 10 years at Lockheed Martin as an engineer responsible for solving aerostructures manufacturing quality problems, he helped develop the FaroArm portable CMM used widely today in manufacturing companies worldwide. In 1995, he founded Direct Dimensions, Inc., now in its 14th year of providing *rapid solutions to 3D problems!* Raphael joined SME in 2005 and has been active as an advisor for the 3D Imaging Technical Group and the 3D Imaging Conference. He has volunteered as a speaker at several SME events. Raphael is a member of SME Chapter 13 in Baltimore and has hosted chapter tours at his facility.

Hear more about the Liberty Bell and other projects by participating in the **FREE webinar** on April 22. For more information, see below.

FREE WEBINARS BEFORE THE CONFERENCE

Whether you plan to attend or are just thinking about it, take advantage of these **FREE pre-conference webinars**. For more information and to register, visit www.sme.org/conference OR www.sme.org/webinars.

TAKING CONTROL of YOUR FUTURE: Small Investments Can Result in Big Dividends

*March 26 • 1:00 PM–2:00 PM ET
Hosted by SME's Manufacturing
Leadership Tech Group*

Whether you're an experienced manufacturing professional, in the middle of your career or just beginning your education, this webinar will provide ideas and inspiration on how you can take control of your future as well as impact the next generation of manufacturing professionals. Find inspiration from one engineer's story that will provide practical ways you can develop your own professional skills through a variety of resources and activities. Hear how this all began with an experienced engineer's small investment. If luck is when opportunity meets preparation, this webinar will discuss some simple ways anyone in manufacturing can prepare for the next opportunity.

PRESENTER: Joseph LaRussa, Visteon

Innovative Technology and American History in 3D

*April 22 • 1:00 PM–2:00 PM ET
Hosted by SME's 3D Imaging Tech Group*

Discover how today's innovative technology is being used to document American history in 3D. Using accurate 3D laser image data from the actual Liberty Bell, Direct Dimensions' engineers created a 3D CAD model of the Pass & Stow original design

from 1753 for the Liberty Bell, prior to the formation of the crack and with no casting or aging defects. This dimensional information was provided to the Cornille-Havard bell foundry in France to cast the Normandy Liberty Bell. Learn more about this project, how the same processes and technologies can be used in manufacturing, and maybe a little history, by participating in this FREE webinar.

PRESENTER: Michael Raphael, Direct Dimensions

Management Matters

*April 30 • 1:00 PM–2:00 PM ET
Hosted by SME's Manufacturing
Leadership Tech Group*

For the last six years, in collaboration with the London School of Economics and Stanford University, McKinsey has developed, tested, and applied a new approach for robustly measuring a company's management practices, allowing them to be compared directly with real business performance. The results, based on examination of over 4,500 industrial companies world-wide, show that improving management practice is one of the most effective ways for a firm to outperform its peers. In this webinar, you'll learn which dimensions of management really matter and gain insights into how leading management practices give companies access to rapid, cost-effective, and sustainable competitive advantage.

PRESENTERS: Stephen Dorgan, John Dowdy, and Pedro Castro, McKinsey & Company

SPECIAL FEATURES

Opening Reception at The Franklin Institute Science Museum

Sunday, June 7 · 5:30 PM–7:00 PM

(Round-trip shuttle service provided for all participants from Hyatt to reception.)

Named for America's most dignified statesman and earliest innovator, The Franklin Institute is the backdrop for a truly "electrifying" SME Annual Conference Opening Reception. Meet other SME members, leaders, and manufacturing professionals in a relaxed atmosphere. Experience the wonder and amazement of the bioscience exhibit including the Giant Heart, a walk-through exhibit.

NOTE: *Please check-in/register at the Hyatt BEFORE leaving to the reception to ensure your admission.*

SME Resource Center

Sunday, June 7–Tuesday, June 9

Explore the many resources available to help you throughout your manufacturing career as well as the future of manufacturing. From the efforts of the SME Education Foundation supporting education interest at the K–12 level, to ongoing support through knowledge sharing, certification, and recognition, you are sure to find many self-development tools and ways to get involved.

SME Poster Session

Sunday, June 7–Tuesday, June 9

Add to your conference experience by visiting the posters in the SME Resource Center. In addition to SME Chapter and Technical Community activities, the poster session will include developing manufacturing innovations and research projects. Posters will be displayed from Sunday, June 7–Tuesday, June 9 with the formal interactive poster session taking place prior to the International Awards Gala on Monday, June 8 from 6:00 PM–7:30 PM.

SME Annual Business and Member Luncheon

Sunday, June 7 · 11:30 AM–1:00 PM

Enjoy a networking luncheon with SME chapter and technical community members, member leaders from the SME Board of Directors, Member Council, Manufacturing Enterprise Council, SME Education Foundation, and other SME groups.

Legends in Leadership Luncheon

Monday, June 8 · Noon–1:30 PM

Hear ideas from SME's past presidents on how to lead during challenging times. These industry leaders will share their experience and expertise on leadership. Speakers will include:

- Charles F. Carter, Jr., FSME, CMfgE, SME President 1982–83
- Ronald P. Harrelson, FSME, CMfgE, SME President 2000
- William (Willy) Geary, FSME, President, Boeing Canada Operations Limited & General Manager; SME President 2006

SME International Honor Awards Gala & Reception

June 8, 2009

6:00 PM–7:30 PM Reception & Interactive Poster Session
7:30 PM–10:00 PM Dinner & Awards

Each year, SME pays tribute to individuals who are making an impact on the advancement of manufacturing. Join us at the best of the best in manufacturing is honored at the 2009 SME International Honor Awards. The future of manufacturing will also be recognized as the SME Education Directors Scholarships and Family Scholarship are presented.

DRESS: *Business Attire*

PRE-CONFERENCE

SME Annual Business Meeting and Member Luncheon

Sunday, June 7 · 11:30 AM–1:00 PM

SME members will convene for a State of the Society presentation, which will deliver an overview of SME programs, financial results, and strategic direction for SME and its Education Foundation.

FREE SME MEMBERS ONLY WORKSHOP

Sunday, June 7 · 1:00 PM–4:00 PM

Leveraging a Lean Tool to Get Important Things Done and Revitalize Your Team

For Chapter Leaders, Member Consultants, Tech Group Advisors, and SME Members interested in learning how to help their team prosper

This FREE SME member session will provide you with a proven tool that can improve your chance of success with a new strategy, project, or plan. Using an A3 process in your daily professional life OR as an SME volunteer leader will help you focus your ideas and gain support. An A3 is a flexible, lean tool you can use in any situation that requires planning, problem solving, or a team to achieve a common goal—regardless of whether you use any other "lean" tools. An A3 helps develop leadership skills in your team as you progress together. You'll find that with this focus, everyone's time will be more valued and everyone will find value in participating.

MEET YOUR CONFERENCE ADVISORS

Thank you to the following individuals and groups for their contribution to the development of this conference as well as their dedication to SME.

Host Chapter: Philadelphia No. 15

- Karla McJunkin, Philadelphia Gas Works
- Velda Morris, Philadelphia School District
- Sandy Pietrusza, Boeing
- Judy Ray, Westchester University
- George Scamby, Boeing Defense & Space Group
- Craig Talley, Mazak

Technical Community Network: Manufacturing Leadership Institute

- David Csokasy, The DJC Group
- Joseph LaRussa, Visteon
- David Lee, SME Past President

CONFERENCE SCHEDULE

Sunday, June 7

Noon–5:00 PM

- **Check-in and Registration**
- **Poster Display Session**
- **SME Resource Center**

5:30 PM–7:00 PM

OPENING RECEPTION:

The Franklin Institute Science Museum

Round-trip shuttle service will be provided from 5:00 PM to 7:30 PM for all participants from the Hyatt to the reception. *NOTE: Please check-in/register at the Hyatt BEFORE leaving to the reception to ensure your admission.*

Monday, June 8

7:30 AM–9:00 AM

BREAKFAST KEYNOTE:

Breaking Through to Growth



Doug Hall helps tilt the odds of success in your favor. He reveals the data-based wisdom, advanced technology and no-fail practical tactics that have helped make the Eureka! Ranch #1 in the world of business innovation. After earning a

degree in chemical engineering at the University of Maine, he spent 10 years working in Procter & Gamble where he rose to the rank of Master Marketing Inventor. In 1990, he retired from corporate life and founded what is today known as “America’s #1 Idea Company” (Inc. Magazine), the Eureka! Ranch. He has researched top corporations’ innovation efforts and translated it into practical programs for any sized business that make it possible to regularly craft concepts with double or even triple the probability of success. Hall will share insights and inspiration for smarter and more creative ways for growing your cranium, your career and your company.

9:00 AM–9:15 AM

Break

9:15 AM–11:45 AM

GENERAL SESSION:

Industry Trends & Developments

Join representatives of SME’s Technical Community Network to hear the latest developments and trends from a broad range of industries, processes, and technology areas in one, fast-paced session.

Automated Manufacturing & Assembly



Initiatives in automated manufacturing data management, robotic system designs for surface finishing and healthcare, and simulation applications for product portfolio management, lean manufacturing and strategic planning are providing competitive advantages and exciting opportunities for progressive companies.

Paul Nutter, Ohio Northern University

Forming & Fabricating



Presentation will cover technology and market trends in forming and fabricating including initiatives to address helium shortage, top contributors to process improvements, and much more.

Charles Caristan, Air Liquide

Industrial Lasers



An update on recent trends in industrial laser technology and the impact on the manufacturing community will be presented.

Tim Morris, Trumpf Inc.

Machining & Material Removal



Presentation will cover manufacturing improvements for productivity and cost savings.

James Stephens, CNH

America LLC

Manufacturing Education & Research



Presentation will include a discussion of the state of manufacturing education including innovations in teaching, curriculum, outreach, and the state of programs.

Hugh Jack, Grand Valley State University

Plastics, Composites & Coatings



Current manufacturing practices and challenges for the future will be presented.

Richard Lofland, Richard Lofland & Associates

Product & Process Design and Management



Get the latest innovative industry collaborations and learn lean initiatives reaching hundreds of industry pros hungry for change.

Joseph LaRussa, Visteon

Rapid Technologies and Additive Manufacturing



Includes an update on recent trends and their impact on the medical manufacturing community.

Stephen Schmitt, Voxelogix

11:45 AM–Noon

Break

Noon–1:30 PM

LEGENDS IN LEADERSHIP LUNCHEON

See *Special Features* section.

BREAKOUT SESSIONS

IMPROVE: Innovations That Could Change the Way You Manufacture

1:45 PM–2:30 PM

High-Speed Sintering



How and why rapid prototyping technologies are being increasingly used for the manufacture of end use products (i.e. rapid manufacturing). High-speed sintering will be described, highlighting advantages over existing technologies. Examples of parts made will be shown along with typical mechanical properties. The potential to apply high-speed sintering to high volume manufacturing will be presented.
Neil Hopkinson, Loughborough University

2:30 PM–3:15 PM

Multifunctional Applications of Nanotube Buckypaper



The next generation of high performance and multifunctional applications includes fabrication of nanotube membranes or buckypaper for mechanical, electrical, thermal, lightning strike protection, and EMI shielding properties. Due to their ability to produce desired and repeatable nanostructures, their user-friendly processibility for material and structural fabrication, and their exceptional lighter weight, Buckypapers will play a critical role in producing future multifunctional nanocomposites.
Ben Wang, Florida State University

3:15 PM–3:30 PM

Break

3:30 PM–4:15 PM

Gecko-Inspired Adhesives



Synthetic gecko-inspired materials could form the basis of a new class of adhesives that would include two contradictory properties of self-cleaning and high adhesion. These adhesives will be useful for applications in the areas of wall-climbing robots, reversible adhesives, and adhesives suitable for use in space and electronic applications.
Ali Dhinojwala, The University of Akron

4:15 PM–5:00 PM

Micro Laser Assisted Machining of Semiconductors & Ceramics



Micro laser assisted machining (LAM) uses a fiber optic laser directly coupled to a cutting tool to heat and thermally soften the material to be machined. This process is well suited for machining very hard and brittle materials, such as ceramics and semiconductors, and hard non-ferrous metals. The laser heating renders even the hardest materials, such as silicon carbide (SiC), soft and pliable and easily machinable. Material removal rates have been increased by 100%.

John Patten, Western Michigan University

EXECUTE: Leadership

1:45 PM–2:30 PM

Leading Through Uncertainty



The way a company is managed really matters. Achieving significant, lasting operational improvements often requires fundamentally changing the way in which employees work. Changing employee mindsets and behaviors to support a new operating model while building capabilities can be difficult to implement and sustain. Companies can avoid common pitfalls and ensure substantial and sustainable impact by employing five key practices.
Stephen Corbett, McKinsey & Company

2:30 PM–3:15 PM

Followers: The Better Half of Leadership



Not to be confused with subordinates, followers are organizational partners, participants, co-leaders, and co-followers in pursuit of meaning and productivity in the organization. Leadership endures only with a spirit of effective followership. This presentation identifies the characteristics of followers, steps to developing organizational followership, and insights for graduating followers to leaders.
Gene Dixon, East Carolina University

3:15 PM–3:30 PM

Break



3:30 PM–4:15 PM

Facing the Challenge of Implementing Great Ideas



The most perfect solution is worthless if it is not implemented and implemented well. How to implement great ideas including looking at why engineers prefer to spend time on the idea generation (it is fun) as opposed to idea implementation (it is not fun), the impact of organizational culture on implementation, and some implementation guidelines will be presented.

David Csokasy, The DJC Group

4:15 PM–5:00 PM

How to Kill a Project and Survive and Other Practical Professional Skills



That eternal problem: bad projects tend to be self-sustaining. Maybe it's because no one wants to admit defeat, maybe it's because of grim determination to succeed, or maybe it's because they still shoot the messenger. In any event, we will explore how to kill a project and survive, and other topics geared toward project and professional success. Even killing projects requires excellent communication skills.

Robert Frese, The Boeing Company

6:00 PM–7:30 PM

SME International Awards Reception & Interactive Poster Session

See *Special Features* section.

7:30 PM–10:00 PM

SME International Honor Awards Gala

See *Special Features* section.

Tuesday, June 9

IMPROVE: Innovations That Could Change the Way You Manufacture

8:00 AM–8:15 AM

Day Two Welcome and Day One Recap

8:15 AM–9:00 AM

Wireless Electricity Unleashes New Powering Options for Engineers and Product Designers



The magnetic fields of two properly designed devices with closely matched resonant frequencies can couple into a single continuous magnetic field.

This “strong coupling” enables the devices to exchange energy via magnetism, and avoids the potential safety hazards and inefficiency often associated with radiated electromagnetic energy. Wireless power transfer can be applied in a wide variety of industrial and consumer applications and environments.

David Schatz, WiTricity Corp.

9:00 AM–9:45 AM

Personal Fabrication



Personal fabrication technology will provide individuals with the ability to design and manufacture almost any kind of product at home or at school.



The Fab@Home platform (currently available) is a personal fabrication system based on multi-material, layered processes to produce polymer structures, conductive wiring embedded in structural materials, elastomer strain gages, complete batteries, and soft actuators.

Terry Wohlers, Wohlers Associates and Evan Malone, Fab@Home Project/NextFab

9:45 AM–10:00 AM

Break

10:00 AM–10:45 AM

Research & Future Manufacturing



Leading edge global manufacturing research activities will be presented. Many of the results are new developments in traditional areas. These include processes, equipment and tooling driven in part by the impact of new materials that influence traditional areas of material forming, material removal and manufacturing systems. Technologies to watch for future impact will include self-healing polymers and liquid lens imaging.

Scott Smith, University of North Carolina-Charlotte

LOCATION & LODGING

Hyatt Regency Philadelphia at Penn's Landing | 201 S. Christopher Columbus Blvd. | Philadelphia, PA

A block of rooms has been reserved at the special group rate of **\$199/night** (single/double). Rooms in the block will be released. After this date, reservations will be accepted based upon availability, however, SME's reduced rate reservations can be made by calling toll-free 800.233.1234 or the hotel directly at 215.928.1234 and mentioning the group. You can also make room reservations online at www.sme.org/conference and clicking the locations and lodging link.

10:45 AM–11:30 AM

Weather the Storm—Change the Way You Manufacture and Claim R&D Tax Credits



Specifics of the R&D tax credit program and how they can be used to reduce both Federal and State tax liabilities will be presented. The types of R&D

costs and activities that are eligible will be outlined. An overview of the recent changes to the tax code and potential impact on a business's bottom line will be discussed.

Paul Boutin, TMG Consulting Group

11:30 AM–11:45 AM

Wrap up

EXECUTE: Leadership

8:00 AM–8:15 AM

Day Two Welcome and Day One Recap

8:15 AM–9:00 AM

Staying Sane in Crazy Economic Times



Don't allow yourself to be the victim of the economic recession. Learnings for choosing to move beyond fear into identifying opportunities, embracing the gift of downtime, staying focused, taking action, and living in a place of gratitude will be presented. Suggestions are offered to leaders who are trying to help their team members stay focused and productive.

Theresa Rich, Acorn Consulting & Training

9:00 AM–9:45 AM

Coaching Employees Through Change



Coaching is about providing support and advice to help individuals recognize ways in which they can improve their effectiveness and performance.

Coaching has traditionally been employed to help a poor or struggling performer improve. Now it is recognized as a solid methodology for encouraging strong performers to grow and improve even faster.

John Abitabilo, Dale Carnegie

9:45 AM–10:00 AM

Break

10:00 AM–10:45 AM

The Engineering Executive's Strategic Agenda



Through a survey of over 600 discrete and process manufacturers, it has been found that while shrinking development schedules is the

top pressure (60%), rising raw material costs (33%) and decreasing product price-points (28%) make for a difficult combination for the engineering organization. Given these formidable challenges, are any engineering organizations performing well?

Chad Jackson, Aberdeen

10:45 AM–11:30 AM

Lean Culture



How does one get buy-in from the entire company for a change to the unknown? Lean means a radical cultural change to an entirely different culture than the traditional corporate cultures. It should be thought out and defined to make implementation of lean enterprise faster and more effective. This presentation will describe how Kudu Industries Inc. implemented that change.

Robert Mills, Kudu Industries

11:30 AM–11:45 AM

Wrap up

11:45 AM–12:30 PM

Group Luncheon

SUCCEED: Tour or Workshop

Take your choice of one: an exceptional manufacturing tour **OR** an interactive, hands-on workshop.

12:30 PM–4:00 PM

TOUR SOUTHCO:

12:30 PM–12:45 PM

Board buses and travel to tour site.

Visit Southco to hear and see how they arrived to their unmatched portfolio of access hardware solutions through innovation. Their products include over 25,000 standard catalog products and more than 50,000 custom products serving a broad range of industries including aerospace, automotive, consumer electronics, marine, and medical. Southco has integrated environment management into the existing management system for the good of associates, customers, and the world. Participants will see several areas of Southco on this tour including R&D, product development, operations, prototyping and product evaluation, process engineering and monitoring, and manufacturing.

Philadelphia, PA 19106

SME block **not reserved by May 14, 2009**
Seated rate cannot be guaranteed. Room
booking the SME Annual Conference. You can
link.

1:00 PM–4:00 PM

WORKSHOP: Leadership Systems for Growth

Need to protect and grow your profits but don't know where to start?

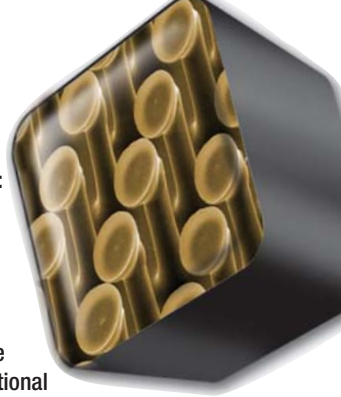
This half-day training simulation uses applied learning to teach an effective scientific system for leading a team to grow profit with less risk, cost, and time to market. (HARD FACT: A Procter & Gamble study found that this system required just 16% of the time and 10% of the cost and staffing versus their classic development approach.) Using data from 6,000 teams, over 15,000 ideas and millions of dollars in R&D, helped Eureka! discover the true keys

to winning systems. Attend this workshop to:

- Make decisions effectively for the organization and team
- Empower your people to innovate with little/no additional funding
- Quickly analyze ideas to save time and money

WORKSHOP LEADER: Jaci Gardner, Eureka! Ranch International

WARNING: Do not sign up for this program unless you are READY TO TAKE ACTION. It generates real excitement for building profits NOW.



Synthetic gecko tape image courtesy of Metin Sitti, NanoRobotics Laboratory, Carnegie Mellon University

For extended descriptions of the presentations and speaker biographies, visit the event website at www.sme.org/conference.

REGISTRATION INFORMATION

Save on your registration by becoming an SME member today and enjoy all the benefits an SME membership has to offer! For membership details, visit www.sme.org/join.

REGISTRATION FEES

	SME MEMBERS	NONMEMBERS
SPECIAL EARLY BIRD PRICING THROUGH 4/15/09	\$295	\$395
Standard Registration: April 15–May 14, 2009	\$495	\$595
Late Registration: May 15–June 9, 2009	\$595	\$695

CANCELLATIONS: Cancellations will receive a full refund if made on or before May 14, 2009. Beginning May 15, 2009, cancellations will only receive a 50% refund. **You must obtain a cancellation number from our registrar to verify your cancellation.** Confirmed registrants who fail to notify SME of his/her cancellation are not eligible for a refund.

Program Changes: SME has the right to amend this program as necessary. In the event of a cancellation, SME is not responsible for incidental costs incurred by registrants. We recommend purchasing refundable airline tickets.

Registration Options

Call SME Customer Care at 800.733.4763 or 313.425.3000, ext. 4500, Monday–Friday, 8 AM–5 PM EST

Visit www.sme.org/conference to register online or download a PDF of the registration form to mail or fax.

SME Business Meeting attendees, please register online or call SME Customer Care to register.

Attendance is limited and only preregistered, prepaid registrants will be guaranteed access to the program. **Registrations made less than two weeks prior to the program should be made by calling 800.733.4763.** Upon receipt of your paid registration, you will be sent a registration confirmation.



Please call 800.733.4763 should you require special assistance.

Visit the event website for complete registration policy.

www.sme.org/conference



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KEYNOTE SPEAKER
Doug Hall



Society of
Manufacturing
Engineers

One SME Drive, P.O. Box 930
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