



Manufacturing Engineering Division

NEWSLETTER FALL 2016

https://community.asme.org/manufacturing_engineering_division/default.aspx/

Message from the Chair

Submitted by Shawn Moylan - MED Executive Committee Chair



Dear fellow Manufacturing Engineering Division (MED) members,

On behalf of the MED Executive Committee (EC), I am writing to provide you an update on the state of the division. This is an exciting time to be in MED. The division continues to grow, with more than 14,000 members and 3,200 primary members. Our flagship conference, the International Manufacturing Science and Engineering Conference (MSEC) is flourishing, with over 200 presentations and attendance reaching maximum capacity. There is a growing number of Manufacturing Innovation Institutes, and MED is strengthening its ties with Manufacturing USA. Most importantly, ASME has identified manufacturing as #1 of five key technologies to focus its investment portfolio. With these in mind, I think this is an excellent time to increase MED's activities and influence within ASME and the manufacturing community in general. We can certainly use your help to achieve this goal.

MSEC, held jointly with the North American Manufacturing Research Conference (NAMRC), is truly a world-class advanced manufacturing event. Please see page 2 of this newsletter for details about this year's excellent conference. Of course, a conference like this can only come together with some outstanding volunteer support. The EC would like to sincerely thank Professor Jaime Camelio and the entire team at Virginia Tech for the wonderful job they did hosting the event. Additionally, we extend our thanks to Professors Frank Pfefferkorn and Johnson Samuel for organizing the outstanding technical lineup for MSEC. We look forward to MSEC 2017 when the conference goes to the big city, Los Angeles. More details can be found on page 11. We expect another large and distinguished audience, so we encourage you to submit your work and register early.

The EC is exploring new collaborations within ASME. The Design, Materials, and Manufacturing Sector (DMM) is responsible for ASME's technical events and content in the area of manufacturing. With ASME's identifying manufacturing as a key technology, DMM is looking to grow the portfolio with new initiatives in manufacturing. Please see DMM's entry on page 13 of this newsletter for more information on two of these new initiatives. Other areas of ASME are also looking to grow their manufacturing content, and are looking to MED

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to help. The EC is currently in early discussions with the Student and Early Career Division as well as ASME's Government Relations. More manufacturing events and content are desired so if you have ideas for workshops, trainings, events, competitions, etc., please feel free to contact me directly.

Now, more than ever, there are plenty of ways to get involved with MED and ASME. I highly encourage manufacturing researchers to join MED Technical Committees (TC) and find others with similar interests for collaboration or ideation. With MSEC 2017 well on track, we're already looking forward to MSEC 2018. Please contact TC chairs for opportunities to organize a symposium or propose a state-of-the-art paper. MED has two journals that are among the best for disseminating manufacturing research. The EC thanks the editors, Professor Y. Lawrence Yao and Professor Jian Coa, for their strong support and we encourage MED members to volunteer for the journals. Another way to get your voice heard in the manufacturing community is encourage recognition of our leaders, both new and experienced. MED maintains five awards (see more on page 9) and we encourage you to nominate deserving individuals. And if you're enthusiastic about advanced manufacturing and none of the opportunities discussed here are exactly what you're looking for, please do not hesitate to just send me an email and let me know you're interested. I'm sure we can find a way for you to get more involved. We certainly can use your help in shaping the future of MED and strengthening advanced manufacturing.

MED Executive Committee	
Chair:	Shawn Moylan National Institute of Standards and Technology
Vice Chair:	Edmund Chu Alcoa
Program Chair:	Kevin Chou University of Alabama
Treasurer:	Radu Pavel TechSolve
Secretary:	Laine Mears Clemson University

Shawn Moylan, MED Chair (2016-2017)



National Institute of Standards and Technology
shawn.moylan@nist.gov

11th ASME International Manufacturing Science and Engineering Conference Hosted by Virginia Tech, Blacksburg, VA, June 27-July 1, 2016. Technical Program Report

Submitted by Frank Pfefferkorn and Johnson Samuel - Program Chairs

The 11th ASME International Manufacturing Science and Engineering Conference (MSEC 2016), sponsored by the Manufacturing Engineering Division (MED) of ASME, was jointly held with the 44th North American Manufacturing Research Conference (NAMRC44), sponsored by the North American Manufacturing Research Institute of SME (NAMRI/SME). These co-located conferences were hosted by the Virginia Polytechnic Institute and State University (Virginia Tech) from June 27 to July 1, 2016, in Blacksburg, Virginia. As leading world-class societies in the Mechanical and Manufacturing Engineering fields, ASME and SME act as global bridges between industries, governments, and academic institutions.

MSEC 2016 received 222 draft papers and posters. After the peer review process, 208 papers were accepted for presentation in 68 MSEC sessions and 11 joint MSEC-NAMRC sessions. The conference featured 29 Technical Symposia in 5 Technical Tracks: Materials; Processing; Biomanufacturing; Properties, Applications and Systems; and Sustainable Manufacturing. The 11 joint MSEC-NAMRC sessions were split between a joint MSEC-NAMRC symposium on "Additive Manufacturing" and a joint MSEC-NAMRC "David Dornfeld Memorial Symposium." In addition, 24 posters were accepted for publication in the proceedings and seven "presentation only" talks were included in the program.

MSEC 2016 (co-located with NAMRC44) brought together 550 attendees from 23 countries. This number includes 223 students. The Civil, Mechanical and Manufacturing Innovation (CMMI) Division of the National Science Foundation (NSF) supported student conference participation. Students studying in U.S. institutions who were planning to attend the MSEC2016/NAMRC44 applied for this opportunity: 83 of them received NSF Travel Support that helped defray their cost of attending the conference. Approximately 80% of the attendees came from academic institutions, 15% from industry, and 5% from government.

The joint conferences hosted two memorial symposia for members of the manufacturing research community who left us too early: Dr. David Dornfeld and Dr. Ranga Komanduri. Each memorial symposium was organized into technical sessions in which peer-reviewed technical papers were presented on topics related to the work of Dr. Dornfeld and Dr. Komanduri. In addition, the joint conferences hosted three sessions and a panel discussion on Manufacturing Education and Workforce Development.

The one **MSEC 2016 invited talk on Options for Achieving a 50% Cut in Industrial Carbon Emissions by 2050** was given by Dr. Julian Allwood from Cambridge University. Dr. Allwood gave his presentation via video link, instead of flying to the United States in order to minimize his carbon footprint. Dr. Allwood gave a very captivating and wide ranging talk on a very challenging topic. He spoke for 60 minutes, followed by 30 minutes of questions and answers.

The joint conferences hosted four keynote speakers: Michael F. Molnar, Founding Director of the Advanced Manufacturing National Program Office; Dr. Sridhar Kota, Professor of Mechanical Engineering at the University of Michigan and founding director of MForesight; Professor Fritz Klocke, Head of the Fraunhofer Institute for Production Technology and Chair for Manufacturing Technology at RWTH Aachen; and Nanci Hardwick, CEO of Aeroprobe Corporation. **Michael F. Molnar** gave an updated on the National Network for Manufacturing Innovation (now known as Manufacturing USA) and a short history on the government's manufacturing policy. **Dr. Sridhar Kota** introduced the audience to MForesight: Alliance for Manufacturing Foresight. This is a new manufacturing think tank that was launched in October 2015 and jointly funded by NSF and NIST. **Professor Fritz Klocke** discussed Industrie 4.0 and how it can help achieve the goal of energy- and resource-efficient production lines, zero emission factories, and better working environments. **Nanci Hardwick** gave a very personal accounting of what it takes to start a manufacturing company and see it through to success. She also presented the latest achievements of their Additive Friction Stir process.

The symposium organizers nominated 22 papers for the Best Paper Award. The 22 papers were reviewed and ranked by symposium organizers. The Technical Program Chair compiled the results and then handed off all final decision making to the Technical Program Vice-chair and MED executive committee. Awards were as follows:

1st place: MSEC2016-8747: Towards Improved Hybrid Joining of Aluminum Alloys to Carbon Fiber Composites with Friction Stir Welding

Authors: Daniel Franke, Justin Morrow, Neil duffie, Michael Zinn, and Frank Pfefferkorn

2nd place: MSEC2016-8750: Profile Monitoring and Fault Diagnosis via Sensor Fusion for Ultrasonic Welding

Authors: Weihong Guo, Judy Jin, S. Jack Hu

3rd place: MSEC2016-8510: Rock-Cutter Interaction in Linear Rock Cutting

Authors: Demeng Che, Weizhao Zhang, Kornel Ehmann

MSEC2016-8771: Feature-Based Adaptive Manufacturing Equipment Control for Cloud Environments

Authors: Goran Adamson, Magnus Holm, Lihui Wang, Philip Moore

The Technical Program Chair selected the recipient of the Best Organizer of a Symposium and Sessions (BOSS) Award in consultation with the MED Executive Committee. The recipients of this award were Prof. Barbara Linke, Dr. Mark J. Jackson, and Prof. Kai Cheng, for their symposium entitled "Abrasive Machining (In honor of Professor W. Brian Rowe)." The organizers solicited a significant number of high-quality technical papers, constructed interesting technical sessions,

and ran a well-organized symposium. A Special Honorary Award was bestowed upon Dr. Moneer Helu for his significant, and well crafted, effort to organize the “David Dornfeld Memorial Symposium” on very short notice.

The conference program is the result of the outstanding efforts of many people. We would like to thank all the authors for their technical paper and poster submissions. We also express our gratitude to all the organizers for their dedicated management of the tracks and symposia, as well as for ensuring the quality of the papers and posters presented. In addition, we would also like to thank the host Organizing Committee, the Conference Coordinating Committee, the NAMRI/SME Scientific Committee, and the ASME MED Executive and Technical Committees. Our thanks also go to the ASME staff for their outstanding job in presenting conference information on the Internet, managing the submitted technical papers and posters, and ensuring high-quality publication of the conference proceedings for MSEC 2016.

MED Technical Committees	
Manufacturing Processes Chair: Hitomi Yamaguchi Greenslet (University of Florida) Vice-Chair: Wayne Cai (General Motors)	Life Cycle Engineering Chair: Barbara Linke (University of California—Davis) Vice-Chair: Moneer Helu (NIST)
Manufacturing Equipment Chair: Mathew Kuttolamadom (Texas A&M) Vice-Chair: Parikshit Mehta (Alcoa)	Nano/Micro/Meso Manufacturing Chair: Cheryl Xu (Florida State University) Vice-Chair: Curtis Taylor (University of Florida)
Manufacturing Systems Chair: Jing Shi (University of Cincinnati) Vice-Chair: Qing Chang (Stony Brook University)	Biomanufacturing Chair: Eda Yildirim-Ayan (University of Toledo) Vice-Chair: Robert Chang (Stevens Institute of Technology)
Quality and Reliability Chair: Lin Li (University of Illinois at Chicago) Vice-Chair: Zeyi Sun (Missouri University of Science and Technology)	Textile & Composites Engineering Chair: Ronald B. Bucinel (Union College) Vice-Chair: currently vacant

Student Manufacturing Design Competition at MSEC 2016

Submitted by Kevin Chou - Student Competition Coordinator

The 2016 Student Manufacturing Design Competition (SMDC), jointly sponsored by ASME MED, NAMRI/SME and Virginia Tech, received a total of 23 entries, among which 6 submissions were from outside of U.S. After detailed reviews, eight finalists were selected and invited to give final presentations, which took place during the 2016 MSEC/NAMRC, hosted by Virginia Tech, held in Blacksburg, VA, from June 27 – July 1. The final presentations were thoroughly evaluated by several judges including Dr. Radu Pavel, Professor Ihab Ragai, Professor Livan Fratini and Professor Steven Schmid, in addition to the Coordinator. All SMDC finalist projects were well prepared and students showcased their projects with high quality presentations, demonstrating results with potentially a high impact to the industry. After serious debates, the judges decided to award the top three winners listed below, who received the cash prizes of \$1,000, \$750, and \$500, respectively.

- **First place:** Zain Shariff, Joey Nahlous, Luis Soria, Bayron Murillo, and Gerardo Ramirez representing the University of Texas at Dallas for their project entitled “*Automated Cross Hatch Adhesion Test*,” advised by Professor Robert Hart.
- **Second place:** Morgan Schweitzer, Karen Baltazar, Kevin Mullia, Johnathan Underwood, Hanna Lauterback, Matthew Wolter, Samuel Nathenson, Belvia Huo, William Nemiroff, Enrico Cascio, and Jeremy Carr from Rensselaer Polytechnic Institute for their project entitled “*DeskBuddy*,” advised by Professor Sam Chiappone.
- **Third place:** Samuel Cole and Eric Desjardins representing University of New Hampshire for their project entitled “*Micro Tube Bending Machine*,” advised by Professor Yannis Korkolis.

Moreover, the finalist teams all received travel supports from the MED and/or the National Science Foundation. The Coordinator would like to thank all 23 SMDC participating teams for their high-quality submissions, also is grateful to all the judges for their assistance with the presentation evaluations. The Coordinator would also like to encourage students and their advisers to consider participating in future SMDC activities. The event this year went exceptionally well and the MED leadership group looks forward to yet more high-quality entries and participants in the 2017 SMDC.

Early Career Forum at MSEC 2016

Submitted by Gracious Ngaile - Organizing Committee Chair

The Early Career Forum (ECF) was held during the joint conference of the 11th ASME International Manufacturing Science and Engineering Conference (MSEC 2016) and the 44rd North American Manufacturing Research Conference (NAMRC44) at Virginia Tech, Blacksburg VA. The event attracted 100 participants who interacted closely with a talented panel representing industry, academia, and governmental career paths. Sponsorship came primarily from the National Science Foundation.

The objective of the Early Career Forum was to educate students engaged in scientific programs around manufacturing on the possible career paths available to them, and details of feasible expectations for activities and future opportunities when following a given career path. This objective was addressed through a small-scale networking event where manufacturing students were introduced to a panel of 13 professionals representing industry, government, and academia.

Dr. Barbara Linke,	University of California Davis
Dr. Bruce Kramer,	National Science Foundation
Dr. George Hazelrigg,	National Science Foundation
Dr. Ihab Ragai,	Penn State University
Dr. Jingjing Li,	Penn State University
Dr. Mary M. Toney,	National Science Foundation
Dr. Moneer Helu,	National Institute of Standards and Technology
Ms. Natalie Nowell,	Society of Manufacturing Engineers
Dr. Ping Guo,	Chinese University of Hong Kong
Dr. Shawn Moylan,	National Institute of Standards and Technology
Dr. Terri Jia,	GE Global Research Center, Niskayuna
Dr. Wayne Cai,	General Motors Global R&D Center in Warren
Dr. ZJ Pei.	National Science Foundation

This was the seventh ECF tied to the co-located conferences. The forum consisted of a brief spoken introduction by each panelist, followed by small group discussions and question sessions as participants moved to different panelist tables. The informal nature of the session facilitated some meaningful discussions, and participants came away with powerful personal information for their future. The committee would like to thank all who participated. The committee would also like to extend its gratitude to The National Science Foundation for covering the conference registration cost for 82 students and for sponsoring the ECF event. Our gratitude also goes to the staff at Virginia Tech for their help and cooperation.

Journal Reports

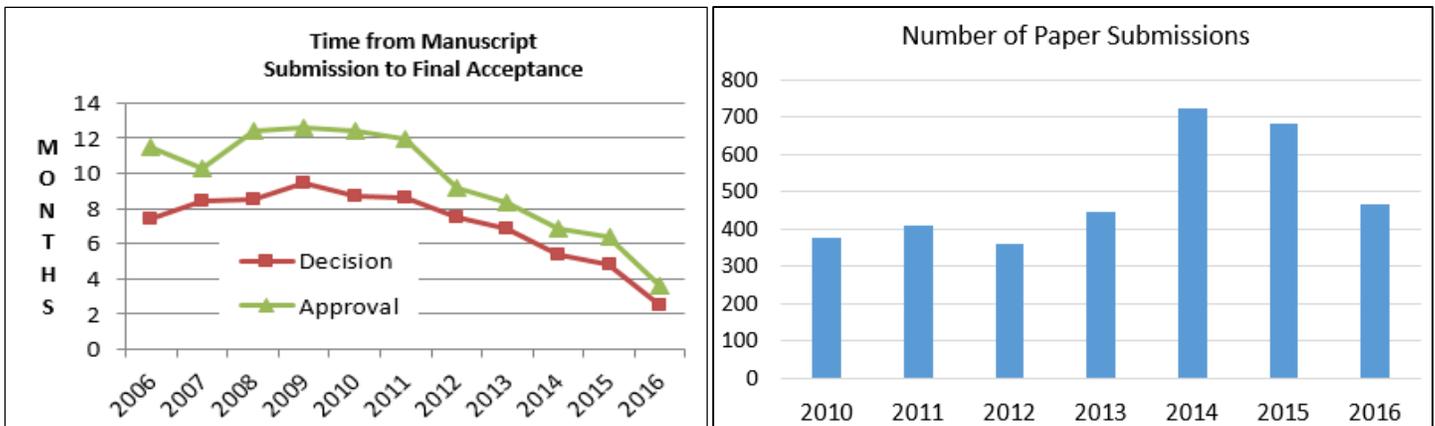
ASME Journal of Manufacturing Science and Engineering (JMSE)

Submitted by Y. Lawrence Yao - Editor

The Journal is on solid ground and gaining each year. Our annual submission rate has increased so much that in January 2016 we began to publish monthly (rather than bi-monthly). To align with this increase, our page allotment per year was increased from 1,400 to 1,700 to accommodate an increase in the number of papers that can be published per issue.

Despite our confidence in this strong showing, we continue to focus on streamlining our review process without sacrificing quality. The time papers spent in review and the number of submissions are shown below. **Please note that the data in the following charts is as of 8/26/2016.**

We also plan to draw readers to JMSE through the publication of several robust and timely special issues. We completed two this year—one on **Innovations in Materials Forming Processes** (September 2016 issue), and one on **Sustainable Manufacturing** (October 2016 issue)—and we anticipate two more in 2017 and another early in 2018. We wish to thank our Guest Editors, Rajiv Malhotra, Oregon State University, USA; Matteo Strano, Politecnico di Milano, Italy; and Edmund W. Chu, Alcoa Technical Center, USA for handling submissions to the issue on **Innovations in Materials Forming Processes** in an expert and timely manner. Likewise, we thank Guest Editors David Dornfeld of the University of California Berkeley (who passed away in March), Jorge Arinez of General Motors Inc., Karl Haapala of Oregon State University, and Moneer Helu of the National Institute of Standards and Technology for their superb handling of the submissions for the issue on **Sustainable Manufacturing**.



With strong support from the MED Executive Committee – particularly Brian Paul, the immediate past MED Chair, and Johnson Samuel, the MSEC 2016 Program Vice Chair – we’ve established a fast-tracking system between well-reviewed MSEC 2016 papers and subsequent publication in JMSE. MSEC 2016 papers that received a “journal quality” rating from at least one reviewer were considered for JMSE publication without further review. Among the 226 final papers accepted by MSEC 2016, 45 were considered by JMSE and 19 were fast tracked. We plan to continue this process for MSEC 2017 to provide a streamlined way for quality papers to appear in the Journal sooner.

Our current Editorial Board consists of 20 members, including the TE. We want to thank several AEs and GEs whose terms are expiring for their fine service to JMSE: Jaime Camelio, Virginia Polytechnic Institute and State University; Yong Huang, University of Florida; Tony Schmitz, University of North Carolina at Charlotte; and Allen Y. Yi, The Ohio State University. We are also excited to welcome a new AE since last fall: Sam Anand, University of Cincinnati. Additionally, two AEs -

Gracious Ngaile, North Carolina State University; and Z.J. Pei, Kansas State University - have kindly agreed to serve another term of three years, and their terms have been extended accordingly.

On behalf of the Editorial Board, I would like to thank the authors and reviewers for their continued support of JMSE, and thank the MED Executive Committee for its guidance and support. I also invite and strongly encourage you to participate in the process of strengthening the Journal by sending me your thoughts and ideas for improving JMSE and our service to the community: yly1@columbia.edu, 212-854-2887.

Special Issues Call for Papers

ASME's Journal of Manufacturing Science and Technology is welcoming manuscript submissions for three upcoming Special issues: Data Science-Enhanced Manufacturing in October 2017, Grinding Technology – Commemorating the Scientific Contributions by Professor Stephen Malkin in December 2017, and Enhanced process-machine interaction through design, tooling, automation, and modeling in February 2018. Submissions for the October issue are due by January 15th, 2017, submissions for the December issue are due by March 31st, 2017, and submissions for the February 2018 issue are due by April 1st, 2017. For more information, please visit

https://community.asme.org/manufacturing_engineering_division/b/weblog/default.aspx

ASME Journal of Micro and Nano-manufacturing (JMNM)

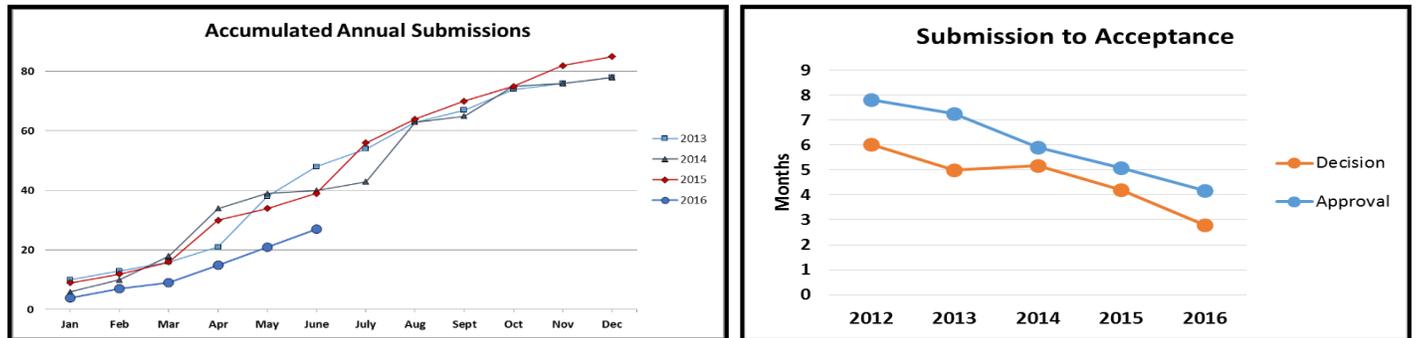
Submitted by Jian Cao - Editor

Now in our fourth year of publication, the *ASME Journal of Micro- and Nano-Manufacturing (JMNM)* continues to grow and offer high –quality publications within the ASME journal series.

We are thrilled to now be covered in the Thomson Reuters Web of Science™ Core Collection, a renowned citation database which lists more than 12,700 technical journals spanning varied professional fields and disciplines. Being indexed and abstracted in Thomson Reuters' new Emerging Sources Citation Index, will allow our journal to enjoy increased visibility and credibility in emerging scientific fields. This development is not only an incredible honor for our publication, but a great step in broadening our reach and the ultimate testament to the great support and hard work we receive from our colleagues within the ASME community and our Editorial Board Members. For that I am very grateful.

The Journal of Micro- and Nano-Manufacturing provides a forum for the rapid dissemination of original theoretical and applied research in the areas of micro- and nano-manufacturing. It offers special coverage of research relating to process innovation, accuracy and precision, throughput enhancement, material utilization, compact equipment development, environmental and life-cycle analysis and predictive modeling of manufacturing processes with features sizes less than one hundred micrometers.

On average we receive 80 papers annually. We have continued to improve our Submission-to-Acceptance rate from 7 months in year 1 to 4 months so far this year, a 42% decrease. We've actually cut time for many of our Process Stages including cutting the Time in Review by 26% from last year and 51% from our year 1 numbers. We attribute this gained efficiency to well-maintained and managed review progression that allows for the same rigorous and quality review process, in the shortest time frame possible.



This year we have welcomed high-quality ICOMM, IMECE, and MSEC papers to submit extended versions of their top-rated work to our Journal. As a result we have enlisted the help of Guest Editors, Dr. Martin Jun of the University of Victoria, Dr. Gracious Ngaile of North Carolina State University, and Dr. Gloria J. Wiens, of the University of Florida, to assist us in Editing these submissions. I am pleased with the support they have provided thus far and look forward to these publications in our coming issues.

We will publish a Special Section Issue this December with high-quality papers from the Symposium on Scalable Nanomanufacturing Processes at MSEC 2016. This symposium focused on three aspects of scalable nanomanufacturing, Innovation of new processes, Metrology and automation, and Physics of Scalable Nanomanufacturing processes. Symposium co-organizer Dr. Rajiv Malhotra of Oregon State University, has served as Guest Editor of this Special Section. We are pleased with the quality of these submissions and the value they will add to our publication this December.

The past year has seen the departure of Editorial Board member Dr. John P. Coulter from Lehigh University. We here at JMNM are grateful for his support over the past 3 years. We also welcomed two new Editorial Board members, Dr. Martin Jun from the University of Victoria, Canada, and Dr. Cheryl Xu from Florida State University. I am proud to work with a team of international experts on the JMNM Editorial Board who provide expertise and conduct the peer-review process for our full-length research papers and technical briefs.

On behalf of the Editorial Board, I would like to thank the authors and reviewers for their continued support of JMNM. Particularly, we would like to express our sincere gratitude to our journal assistant Mrs. Maegen Gregory, for her extraordinary organization skills and her continued dedication to JMNM. We look forward to continuing our work within and beyond the ASME community in creating a platform for scholars and experts from across the globe to educate and discover.

Please submit your manuscripts to JMNM at <http://journaltool.asme.org>.

Honors Committee Reports

Every year ASME bestows a number of awards on our most outstanding colleagues for their efforts to move various aspects of the manufacturing field forward. It is important that these individuals be recognized for their tremendous contributions. Please consider nominating a deserving colleague for one for the ASME administered by MED including the Blackall Machine Tool and Gage Award, the William T. Ennor Manufacturing Technology Award, the Chao and Trigger Young Manufacturing Engineer Award, the Milton C. Shaw Manufacturing Medal, the M. Eugene 3 Merchant Manufacturing Medal of ASME/SME and the Ehmann Medal. See <https://www.asme.org/about-asme/get-involved/honors-awards> for further information on these awards and their nomination process.

Blackall Machine Tool and Gage Award

Submitted by Edmund Chu - Committee Chair

The Blackall Machine Tool and Gage Award is presented for the best original paper or papers which has/ have been presented before ASME and/ or published by ASME during the two calendar years immediately preceding the year of the award.

The award selection committee consists of two industry researchers familiar with the innovative manufacturing technology and four senior professors of manufacturing engineering who has demonstrated their expertise and accomplishments in manufacturing. Several members of the selection committee are past recipients of this award. As a result of the review and the rankings of the selection committee, the committee unanimously recommended two papers for the Blackall Machine Tool and Gage Award.

The nominating committee submitted two recommendations – one for 2015 and another for 2016. However, the General Awards Committee (GAC) found that the recommended papers did not fit the criteria of the award as originally defined, and therefore did not approve the awards. The MED Executive Committee is working with the GAC and Committee on Honors to better define the award going forward to include papers focused on manufacturing equipment and systems. This change should allow for increased nominations and better recognition of the excellent work being published in JMSE.

William T. Ennor Manufacturing Technology Award

Submitted by Edmund Chu - Committee Chair

The William T. Ennor Manufacturing Technology Award is awarded to an individual who for developing and contributing significantly to an innovative manufacturing technology, the implementation of which has resulted in substantial economic and/ or societal benefits.

The award selection committee consists of two industry researchers familiar with the innovative manufacturing technology and four senior professors of manufacturing engineering who has demonstrated their expertise and accomplishments in manufacturing. Four members of the selection committee are past recipients of this award. We received two new nominations before the February 1st deadline and also considered two nominations from the previous year that were still eligible. The nomination packages were sent to all the committee members and each committee member provided a ranking and feedback to the Committee Chair. As a result of this review and the rankings of the selection committee, the committee unanimously recommended Professor Altintas for the Ennor Award.

We nominated Professor Yusuf Altintas of the University of British Columbia in Vancouver this award for “pioneering development of novel models and algorithms for predicting and controlling machining operations that resulted in substantial productivity increase, and for designing higher performance machine tools.” Professor Altintas has dominated this field of research for almost three decades and he is recognized as the leading researcher in this area.

Chao and Trigger Young Manufacturing Engineer Award

Submitted by Shounak Athavale - Committee Chair

The Chao and Trigger Young Manufacturing Engineering Award recognizes a young manufacturing researcher under 40 with potential for significant fundamental contributions to the science and technology of manufacturing processes.

On behalf of the members of the award selection committee, it is our pleasure to announce that the Chao and Trigger awardee for 2016 is Professor Salil Desai of North Carolina A&T State University, recognized for fundamental science and engineering of nano/micro manufacturing processes towards developing translational technologies.

M. Eugene Merchant Manufacturing Medal of ASME/SME

Submitted by Thomas Kurfess - Committee Chair

On behalf of the members of the M. Eugene Merchant Medal of ASME/SME award selection committee, it is our great pleasure to announce this year’s awardee: Professor Jyotirmoy Mazumder of the University of Michigan, for his outstanding contributions to manufacturing research and its implementation in industry via his ground breaking work in quality assurance, via in situ diagnostics and process control of the additive manufacturing process, Direct Metal Deposition (DMD), making it a commercially viable process.

The M. Eugene Merchant Manufacturing Medal of ASME/SME is awarded to an individual who has had significant influence and responsibility for improving the productivity and efficiency (either by research or by implementation of research) of the manufacturing operation(s). This award was established in 1986 in honor of M. Eugene Merchant. The selection committee consists of three immediate past recipients, the ASME/MED Vice Chair, ASME VP MTG, three members-at-large, the SME President, and the committee Chair. Congratulations to Professor Mazumder for receiving this prestigious award.

Nominations are being sought for the 2017 M. Eugene Merchant Manufacturing Medal of ASME/SME. The due date for the award is 16 February 2017. Please send all nominations to Tom Kurfess (kurfess@gatech.edu)

Milton C. Shaw Manufacturing Research Medal

Submitted by Shounak Athavale - Committee Chair

On behalf of the Milton C. Shaw Manufacturing Research Medal Committee, we are pleased to announce that that 2016 Milton C. Shaw Manufacturing Research Medal was awarded to Professor Steven Y. Liang of the Georgia Institute of Technology. Prof. Liang is recognized for studies on physics-based analysis and modeling of machining and grinding processes. His seminal research outcomes of remarkable quantity and quality have contributed significantly to manufacturing science and technology. Prof. Liang was chosen from a set of eight outstanding nominees.

The Milton C. Shaw Research Medal established in 2009, recognizes significant fundamental contributions to the science and technology of manufacturing processes.

Nomination Deadline for All Awards above:

Please visit the ASME MED awards website for details:

https://community.asme.org/manufacturing_engineering_division/w/wiki/3659.honors-awards.aspx

Upcoming Events

12th ASME International Manufacturing Science and Engineering Conference

Submitted by Yong Chen, Johnson Samuel, and Arif Malik - Conference and Program Chairs

Our next conference, MSEC 2017, will be hosted June 4 – 8, 2017 by the University of South California in Los Angeles, CA. It will be co-located with the 45th North American Manufacturing Research Conference (NAMRC - sponsored by the Society of Manufacturing Engineers), and the 2017 International Conference of Materials and Processing (ICM&P – sponsored by the Japan Society of Mechanical Engineers).

Conference Host Website: <http://2017namrc-msec.usc.edu/>

ASME website: <https://www.asme.org/events/msec>

ASME submission webtool: <http://www.asmeconferences.org/MSEC2017/Author/NewAbstract.cfm>

Publication Schedule

This is the overall publication schedule for MSEC2017. (Note: For specific details and questions regarding these dates, please contact the appropriate volunteer organizer).

Submission of Abstract/Full-Length Draft Paper for Review: November 3, 2016

You must submit your abstract and full-length paper at the same time. ONLY engineers/researchers from industry may submit an abstract for Presentation Only. Poster abstracts must be submitted at this time.

Paper Reviews Completed/Draft Paper Acceptance Notification: January 16, 2017

Electronic Copyright Form Submission Process Opens: January 16, 2017

Electronic Copyright transfer forms are requested upon acceptance of the draft or revised draft and prior to the submittal of the final paper.

Submission of Revised Paper for Review (if required): February 3, 2017

Submission of Posters for Review: February 3, 2017

Author Notification of Acceptance of Revised Paper/Posters: February 17, 2017

Abstracts removed for papers that are rejected or withdrawn.

Submission of Copyright Form: March 3, 2017

Electronic Copyright transfer forms are requested upon acceptance of the draft or revised draft and prior to the submittal of the final paper.

Submission of Final Paper: March 8, 2017

In accordance with ASME final paper requirements. Publication in the conference proceedings is not guaranteed if materials are received after this date.

Author Registration Deadline: April 6, 2017

A presenter must be identified for each presentation. The presenter of each paper, poster, or presentation only will be required to pay the author registration by this date. For more information about this requirement please visit the Mandatory Presenter Registration page.

Technical Program

Tracks (9)

- Track 1: Additive Manufacturing (5 symposia)
- Track 2: Processes (6 symposia)
- Track 3: Materials (5 symposia)
- Track 4: Manufacturing Equipment and Systems (12 symposia)
- Track 5: Bio and Sustainable Manufacturing (4 symposia)
- Track 6: Posters
- Track 7: Plenary Sessions
- Track 8: Joint MSEC-NAMRC-ICM&P Symposia (*currently being finalized*)
- Track 9: Student Manufacturing Design Competition

Symposia (32)

Track 1: Additive Manufacturing

- Additive Manufacturing Process Improvements for Microstructure and Material Properties
- Additive Manufacturing Process Improvements for Part Functionality
- Advances in Micro- and Nano-Additive Manufacturing
- Environmental Sustainability of Additive Manufacturing Processes
- Quality Assurance in Additive Manufacturing Systems: Integrated Sensing and Control

Track 2: Processes

- Advances and Challenges in Joining and Assembly Processes
- Advances in Assisted / Augmented Manufacturing Processes
- Advances in Modeling, Analysis, and Simulation of Manufacturing Processes
- Advances in Nontraditional manufacturing Processes
- Innovations in Materials Forming Processes
- Scalable Nanomanufacturing Processes

Track 3: Materials

- Advances in Composites Manufacturing Processes
- Advances in Materials and Manufacturing Processes for Energy Technologies
- Advances in Processing of Polymers and Polymer-Based Composites
- Surface and Sub-Surface Functionalization
- Tribology of Material Removal/Deformation Processes and Machinery

Track 4: Manufacturing Equipment and Systems

- Advances in Cyber Physical Systems, Stochastic Modeling, and Sensor Networks in Advanced Manufacturing
- Advances in Data Analytics and Engineering Modeling for Intelligent Manufacturing Systems
- Advances in Data Management for the Digital Thread in Manufacturing
- Advances in Multi-axis and Multi-tasking Machine Tools
- Cloud Manufacturing
- Competitive Manufacturing
- High Performance Computing and Artificial Intelligence for Cyber-Manufacturing
- Innovations in Equipment Design, Tooling, and Control/Automation to Enhance Manufacturing Processes
- Intelligent Maintenance Decision Making of Manufacturing Systems
- Monitoring, Sensing, and Control for Intelligent Machining and Inspection
- Nanomanufacturing of Multi-functional Systems
- Process-Machine-Interactions (PMI) in Advanced Manufacturing

Track 5: Bio and Sustainable Manufacturing

- Advances in Analysis, Design, and Manufacturing of Biomedical Devices
- Advances in Biomanufacturing of Tissue-Engineered Scaffolds and Cellular/Tissue Constructs
- Manufacturing Process Characterization for System Level Sustainability Assessment
- Sustainability in Smart Manufacturing: Analysis, Metrics, and Modeling Tools

Track 8: Joint MSEC-NAMRC-ICM&P Symposia

- Manufacturing Education, Workforce Development, and Outreach
- *(Other symposia in this track are currently being finalized)*

New Opportunities within DMM

Submitted by Amip Shah and Tim Simpson - DMM Segment Leadership Team Chair and Vice-Chair

DMM (Design, Materials and Manufacturing) is a new market-facing segment within ASME [1]. Volunteers on the DMM Segment Leadership Team (SLT) serve multiple roles, including working with ASME staff and technical divisions within DMM—like MED—on on forward-looking plans for the ASME conference portfolio; identifying opportunities for ASME to serve new communities and enhance existing activities; and serving as a bridge between disparate technical communities who may have shared / common interests.

As an example, the DMM SLT is involved in two initiatives at the moment that may be of interest to MED members:

- a new set of activities focused around additive manufacturing / 3D Printing, including a new ASME conference [2] and an initiative to develop new training programs on the topic; and
- partnering with other groups inside and outside of ASME to launch a national summit [3] that brings together practitioners, researchers, and government institutes and initiatives in the broader Advanced Manufacturing area.

We would love for MED members to get involved with these new initiatives! The DMM SLT is also working on a process by which MED members will be able to submit their own ideas for consideration... stay tuned!

To get involved with DMM's additive manufacturing initiatives, please contact Tim Simpson (tw8@psu.edu); to get involved with the Advanced Manufacturing Innovation Summit, please contact Gloria Wiens (gwiens@ufl.edu). For general questions about DMM, please contact Raj Manchanda from ASME staff (ManchandaR@asme.org).

[1] To learn more about ASME segments:

https://community.asme.org/technical_events_and_content_sector/w/wiki/10880.segment-descriptions.aspx

[2] The AM3D conference was held this year in Charlotte, NC alongside the ASME International Design Engineering Technical Conference (IDETC). For more information, see: <https://www.asme.org/events/am3d-conference>

[3] A small-scale inaugural pilot for an Advanced Manufacturing Innovation Summit (AMIS) was held in Tampa, FL in March 2016. For more information, see: <https://www.asme.org/about-asme/news/asme-news/host-advanced-manufacturing-innovation-summit>

[In Memoriam for Dornfeld](#)

Submitted by Moneer Helu

Dr. David A. Dornfeld, the Will C. Hall Family Professor of Engineering and founding Faculty Director of the Jacobs Institute for Design Innovation at the University of California, Berkeley, died of a heart attack on March 27, 2016. He was 66.

Dr. Dornfeld was born in Horicon, Wisconsin in 1949 and was introduced at an early age to the field of manufacturing by his father who worked for John Deere. He later studied mechanical engineering at the University of Wisconsin – Madison where he earned his Bachelor’s, Master’s, and Ph.D. degrees under the mentorship of S. M. Wu. After completing his studies in Madison, Dr. Dornfeld began his career at Berkeley in 1977 as an assistant professor in mechanical engineering. He became a full professor in 1989 and assumed several leadership positions at Berkeley throughout his academic career, including Chair of the Department of Mechanical Engineering from 2010 to 2015.

Dr. Dornfeld’s research contributions were many within the fields of precision and sustainable manufacturing. Some of his areas of focus included the use of acoustic emissions to monitor the productivity of machining and welding processes, the mechanics of burr formation, the material removal mechanisms for chemical mechanical planarization, and the characterization of the environmental and social impacts of manufacturing processes. He was a recognized expert and leader in the manufacturing community, and his contributions were continually recognized through numerous awards and honors. He was a fellow of ASME, SME, and the International Academy for Production Research (CIRP). Within ASME, he served as Chair of the Production Engineering Division and Editor of the Transactions of ASME and Journal of Engineering for Industry. He was also an International Director and President of the North American Manufacturing Research Institution (NAMRI/SME) and Vice President of CIRP. His awards included the ASME Blackall Machine Tool and Gage Award, Takagi Prize, Charles F. Carter Advanced Manufacturing Award, SME Frederick W. Taylor Research Medal, ASME William T. Ennor Manufacturing Technology Award, NAMRI/SME Outstanding Lifetime Service Award, and ASME/SME M. Eugene Merchant Manufacturing Medal. He was elected to the National Academy of Engineering in 2013.

Throughout his long and distinguished career, Dr. Dornfeld was a strong advocate for students and a widely admired and respected teacher, adviser, and mentor. He was also a beloved friend known for his warmth, humility, and wit. He was an inspirational personality that brought out the best in those around him. He was a constant explorer who enjoyed the journey of life and moved through it with joy and humor. He will be sorely missed by those lucky enough to have known him.

Dr. Dornfeld is survived by his wife, Barbara, and his brother, William.

The University of California, Berkeley held a campus memorial to honor Dr. Dornfeld on September 10, 2016. The Dornfeld family suggests that memorial gifts may be made to support the ASME Foundation K-12 STEM Education Programs: c/o ASME Foundation, Attn: Gretchen Crutchfield, L Street NW, Suite 810, Washington, DC 20036-5104. Ms. Crutchfield can also be reached by email at crutchfieldg@asme.org.