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MED

Manufacturing Engineering Division Newsletter

James Stori, Editor *Fall 2002*

Message from the Chair

Amit Bagchi

Greetings to all members of the Manufacturing Engineering Division! This past summer, I assumed the role of Chair of the MED Executive Committee. My colleagues on the Committee are: Jun Ni (Vice-Chair), Scott Smith (Secretary), Dave Stephenson (Treasurer) and Steven Liang (Incoming Member). Our staff from ASME are Vanessa Lane, Lauren Lewis and Edison Aulestia. I welcome our new team members Vanessa at ASME headquarters, Jamie Stori, the Newsletter Editor, and Kory Ehmann, our new Technical Editor for the Journal of Manufacturing Science and Engineering. Jian Cao has put together an excellent program as MED Program Chair for IMECE 2002 and Bill Endres is doing the same for IMECE 2003. Shiva Raman's efforts at organizing sessions for National Manufacturing Week in March 2003 deserve special mention. But the most important person in this Division is you, the member, and I welcome your participation.

As I reflect back on my almost two decades as an ASME (and MED) member, many significant changes in the organization, membership and technologies go through my mind. Over these years, the technical program structure of MED evolved from a collection of symposia and student design competition in focused areas, to assigning a significant role to the technical committees, and very recently, for the technical committees to propose symposia and panels, and peruse cutting edge technologies. At WAM (some of us still remember it!) we used to have sessions primarily in machining, forming and casting. Now we have sessions on supply chain management, rapid prototyping, electronics processing and packaging, among others. We went through a period of self-reflection in Blueprint 2000, and we included forums for applied discourse like Manufacturing International and now, National Manufacturing Week for our members from industry. And as in every other facet of life, electronic communication has revolutionized how we communicate within and outside our field. We now have John Roth heading a newly formed Communications Committee for disseminating information through the Internet.

Change is the basis for the advancement of technology; it is especially nice that these changes in MED were initiated and driven by members. You volunteered your time and effort to send suggestions to the Executive Committee Members, and helped in the implementation of these changes. Thank you!

However, some trends need careful review. Not too long ago, we used to see senior members (i.e., those with 25 or more years of ASME membership) at IMECE and at other ASME meetings. Their numbers seem to be shrinking. Changes in MED were not meant to exclude these senior members, but to include them. I, especially, would like to hear from you, the senior members, about your thoughts and what MED can do to bring you back to our sessions. We need to benefit from your experience and the enthusiasm of our younger members.

ASME and MED need to assess who our "customers" are at IMECE. We need to tailor our program at the IMECE for our members so that each attendee leaves with a sense of accomplishment; (s)he learns about his/her colleagues' works, and develops rapport with researchers in other establishments and disciplines. We need cross-disciplinary sessions, symposia, panels and discussion forums at IMECE, where all disciplines of mechanical engineering come together. This will create and nurture professional discourse to the benefit of all. We also need to stretch the dollars so that there is a "return on investment" for the members-for the time, effort and money spent. We look on ASME to help the divisions in finding solutions that will work. I look forward to our Group VP Judith Todd's support in this regard.

Looking to the future, it is important that we continue to actively participate at the Congress. We also need to take an active part in local ASME chapter activities by organizing workshops, discussion groups and seminars about our work. Perhaps each member could also reach out to the local high schools and colleges, and help them understand what our profession does for the society. These students are our future, and we should take an active role in mentoring them to continue our work. In short, we have a role to attract new members to our division so that our division can grow. Change is good, but only if the change is for growth and prosperity. We all need to work together to bring these changes to reality.

I wish all of you the very best in the coming year.

Amit Bagchi, MED Chair, 2002-3

Reorganization of MED Technical Committees

MED has had eight (8) Technical Committees for several years now. However, upon review of the activities of these Committees over the past couple of years, it was apparent that the existing structure and organization did not serve the membership adequately. Accordingly, to better serve the membership and support the technical activities of the Division, a detailed discussion took place on the reorganization of the technical committees at the IMECE 2001 in New York. Members of the Executive Committee, the eight Technical Committees, and their respective Chairs along with other interested MED members participated in this meeting.

Since then, the MED Executive Committee has held several audio conferences and a meeting in May 2002 to review the proposal, define the scope of the proposed committees, and suggest names of committee members. At the MED General Membership Meeting in May 2002, members accepted the recommendations for changes to the technical committees. The consensus was to replace the eight committees with five new Technical Committees. The new committees are as follows. Please contact the co-chairs listed below for further information.

1. **Manufacturing Processes.** The Manufacturing Processes TC covers the areas of traditional and non-traditional machining, solidification, forming, joining, electronic materials processing, nano/micro/meso-scale manufacturing, polymer and biomaterials processing.

Shreyes N. Melkote, Georgia Inst. of Tech., 404-894-8499, shreyes.melkote@me.gatech.edu
Robert P. Williams, Univ. of Nebraska - Lincoln, 402-472-4755, ierpwill@engunx.unl.edu

2. **Manufacturing Equipment.** The Manufacturing Equipment TC encourages the pursuit and dissemination of knowledge in the areas of machine design, sensors for manufacturing equipment, dynamics, stability, and control in manufacturing, and industrial robotics.

Phil Bayly, Washington University in St. Louis, 314-935-6081, pvb@me.wustl.edu
Robert Landers, University of Missouri at Rolla, 573-341-4586, landersr@umr.edu

3. **Manufacturing Systems.** The Manufacturing Systems TC encompasses the following focus areas: assembly and fixturing systems, flexible automation, material handling, production planning, scheduling, and layout, process planning and optimization, lean and computer-integrated manufacturing, tolerancing, and information technology in product realization.

James Stori, Univ. of Ill. at Urbana-Champaign, 217-244-7762, jastori@uiuc.edu
Shane Hong, Columbia University, 212-854-2957, sh295@columbia.edu

4. **Quality and Reliability.** The Quality and Reliability TC will focus on the areas of metrology, measurement systems, statistical process control (SPC), and process monitoring. Interests include developments in both hardware and software, such as new sensors, actuators, metrology systems, production systems, signal processing techniques, algorithms for geometric inspection, and statistical analyses of production data for enhanced SPC.

Jack Hu, University of Michigan, 734-615-4315, jackhu@umich.edu
Tom Kurfess, Georgia Institute of Technology, 404-894-0301, tom.kurfess@me.gatech.edu

5. **Life Cycle Engineering.** The Life Cycle Engineering TC focuses on the environmental and sustainability issues of manufacturing. Representative topics include environmentally benign and friendly manufacturing processes and equipment, dry machining, dry forming, swarf and ofal reduction, transport and handling, reduction of caustic and acidic electrolytes in non-traditional machining processes, development of renewable and recyclable manufacturing lubricants, reduction of manufacturing energy, reduction of maintenance costs, manufacturing equipment and plant life cycles.

Walt Olson, University of Toledo, 419-530-8227, wolson@eng.utoledo.edu
C. James Li, Rensselaer Polytechnic Institute, 518-276-6192, lic3@rpi.edu

The group decided that Education and Emerging Areas of Manufacturing Engineering did not have to be considered in separate committees, but these would be covered under the aegis of each new Technical Committee. In addition, liaison positions for other technical divisions in ASME and the Manufacturing Technical Group (MTG) were also eliminated. Each new technical committee is to establish links with other technical divisions in ASME and the MTG, and coordinate activities jointly as they see fit. The Technical Committee Chairs were charged with the following:

- Each TC will have six (6) or more members.
- Maintain necessary liaison with other technical divisions in ASME to keep abreast of their activities of interest to MED members and develop joint programs with them.
- Propose and organize symposia, panel sessions and tutorials/workshops at MED-led events, such as, IMECE and National Manufacturing Week.
- Serve as technical experts for questions and issues directed at MED by ASME membership and assist symposium organizers with reviews.
- Maintain a list of technical web sites relevant for MED.
- Complete a yearly update describing their committee's activities and plans for coming year(s), and significant new technology developments.
- Each TC will be placed on a three-year rotation for preparing a formal manuscript that will be presented at the IMECE conference and appear in the conference proceedings. These papers are expected to identify important recent advances or achievements (over the past three years), discuss the "state of the art" in the area, identify research and development trends, and suggest research gaps and areas for future research.
- Each TC chair will be a member of the MED Program Committee. Either (s)he or her/his designate will be in touch with the MED Program Committee.

If you are interested in joining any of the Technical Committees, please either contact the committee chair directly, or send an e-mail to Amit Bagchi or Jun Ni, and copy Lauren Lewis (lewisl@asme.org) and/or Vanessa Lane (lanev@asme.org) at ASME.

Rich Furness, Chair, MED, 2001-02

MED Mourns the Passing of a Major Figure in Metal Cutting Research

Kenneth J. Trigger, professor emeritus, July 25, 2001, at Urbana. He was 90.


Kenneth J. Trigger

Professor Trigger earned his BSME in 1933 and his MSME in 1935, both from Michigan State College. He taught and conducted research at Michigan State, Swarthmore College and Lehigh University before joining the Department of Mechanical Engineering at the University of Illinois at Urbana-Champaign in 1938. He was promoted to professor in 1945.

An internationally renowned authority on the fundamentals of metal cutting, Professor Trigger and his M&IE colleague, Professor B. T. Chao, conducted pioneering research on temperature effects in metal cutting from the late 1940s through the early 1960s. More than half a century after their seminal contributions were published in The Transactions of ASME, they continue to be among the most important work in this area. In 1995, Dr. M. Eugene Merchant prepared a report entitled "An Interpretive Review of the 20th Century U. S. Machining and Grinding Research." As part of this project, funded by the National Science Foundation (NSF), Merchant prepared a questionnaire to experts in the field in which he asked the following question: "What do you consider to be the seminal and "milestone" events in the history of research on machining and grinding from Taylor to 1980?" A second questionnaire asked respondents to identify U. S. research results having the highest impact on machining and grinding practice. Chao and Trigger's development of the theory of temperatures in metal cutting was identified as one of six "milestone" events as well as one of seven developments having the highest impact on practice.

Professor Trigger and Professor Chao were jointly honored by the American Society of Mechanical Engineers (ASME) as recipients of the Blackall Machine Tool and Gage Award in 1957 and the William T. Ennor Manufacturing Technology Award in 1982. Professor Trigger received the Frederick W. Taylor Research Medal from the Society of Manufacturing Engineers (SME) in 1959. Professor Trigger's professional affiliations included ASME, with which he'd attained Life Fellow status, the American Society for Metals, SME, and the American Society for Engineering Education. Professor Trigger is survived by his wife Florence and three sons.

2003 IMECE in Washington, DC - Call for Papers

The 2003 IMECE (November 16-21, 2003, Washington, DC) will feature a broadening of topical content organized under the new Technical Committee (TC) structure. Our goal is to increase involvement of the R&D communities of academia, industry and government agencies, in particular in emerging areas of manufacturing science and engineering, expanding beyond the historical focus on processes. A complete list of MED-sponsored symposia, including technical focus and contact information, is provided below. At press time, all-electronic processes for paper submission, tracking, peer review and improved quality assurance are still under development. Papers are due in electronic form by February 15, 2003; no late submissions can be accepted under the new quality-assurance plan. For further information about any symposium, please contact the respective co-organizers. It is highly recommended that authors contact the co-organizer by October 30, 2002 to express their intent to submit a paper and to check for further details on paper submission procedures. At a minimum, submissions will be expected as a PDF file attached to an email sent to both co-organizers. Any authors not able to provide their submission in this manner should make other arrangements with the co-organizers. Please refer to http://www.asme.org/divisions/med/call/ for additional details and updates. For general information, please contact the Program Chair, Prof. Bill Endres (wjendres@mtu.edu, Tel: (906) 483-3939), or the Program Co-chair, Prof. Lawrence Yao (yly1@columbia.edu, Tel: (212) 854-2887).

Bill Endres, Michigan Technological University

Advances in Machining of Hard Materials *(Manufacturing Processes TC)*

In recent years, there has been an increased focus on issues pertaining to the machining of hard materials. As manufacturers strive to improve productivity and reduce costs, machining of hard materials poses difficult challenges in the areas of tooling, machined surface quality and dimensional accuracy. Contributions are solicited regarding all aspects related to the machining of hard materials, with an emphasis on modeling methodologies, observation-based approaches and practical solutions. The three major impact areas that are targeted by this symposium include: (i) process technology issues, (ii) work material and surface integrity, and (iii) emerging technologies and prospects for accelerating conventional manufacturing processes via hard turning.

Specific topics of interests include, but are not limited to: surface integrity/quality and fatigue issues in machining of hard materials, modeling of hard turning processes, super-hard cutting tool materials, environmental aspects of hard material machining, machine tool requirements with focus on geometrical and dimensional accuracy, and cooling and coolant application methods in hard turning, including cryogenic machining.

Prof. A.K. Balaji, The University of Utah, Department of Mechanical Engineering, 50 S. Central Campus Dr., Rm. 2202 MEB, Salt Lake City, UT 84112-9208, Tel: (801) 587-7772, Fax: (801) 585-9826, Email: balaji@eng.utah.edu

Dr. Ranajit Ghosh, Air Products & Chemicals, Inc., 7201 Hamilton Blvd., Allentown, PA 18195, Tel: (610) 481-8547, Fax: (610) 481-5136, Email: ghoshr@apci.com

Sensors in Manufacturing *(Manufacturing Equipment TC)*

Sensors are being increasingly used to monitor and improve various manufacturing processes. Examples include sensor integration for high-speed machining and ultra-precision manufacturing. At the micro-scale, microsensors and MEMS (micro-electro-mechanical systems) are revolutionizing the semiconductor industry. A microsystem, or the so-called "system-on-a-chip," combines electronic circuitry with microsensors and microactuators to produce intelligent devices. This emergent technology has led to the development of applications ranging from electronic noses and intelligent ears to micro-tweezers and the modern ink-jet nozzle.

Specific topics of interest include, but are not limited to: smart devices, integrated wireless sensors and MEMS, micromachines, microsensor fabrication, and process monitoring and control. The goal of this symposium is to present theoretical developments and practical state-of-the-art approaches to the integration of sensors in manufacturing. Papers should include novel theoretical contributions or applications. It is preferable that theoretical results be complemented by experimental evaluations. Papers from the industrial sector are strongly encouraged.

Dr. Ranga Narayanaswami, Industrial and Manufacturing Systems Engineering, Iowa State University, 2019 Black Engineering Building, Ames, IA 50011, Tel: (515) 294-8730, Fax: (515) 294-3524, Email: ranga@iastate.edu

Kang Lee, Sensor Development and Application Group, National Institute of Standards and Technology, 100 Bureau Drive, MS# 8220, Gaithersburg, MD 20899-8220, Tel: (301) 975-6604, Fax: (301) 990-3851, Email: kang.lee@nist.gov

Manufacturing Processes for Semiconductor Materials and Devices *(Manufacturing Processes TC)*

During the last 50 years, the price of semiconductor microchips has steadily decreased. Today, both the silicon wafer industry and the semiconductor industry are under tremendous pressure to further reduce the price of their products. This presents key challenges to technologists looking for cost-effective manufacturing processes. This symposium is to provide a forum for discussion of the research and development on manufacturing processes for semiconductor materials and devices.

Specific topics of interest include, but are not limited to: crystal growing, slicing, dicing, edge profiling, wafer grinding, wet etching, dry etching, lapping, polishing, cleaning, oxidation, lithography, diffusion, metallization, Chemical-mechanical planarization (CMP), backside thinning, bonding, packaging, and final testing.

Professor ZJ Pei, Department of Industrial and Manufacturing Systems Engineering, Kansas State University, 211 Durland Hall, Manhattan, KS 66503, Tel: (785) 532-3436, Fax: (785) 532-3738, Email: zpei@ksu.edu

Dr. Charles Zhang, Intel, Inc., 5000 W. Chandler Blvd., Chandler, AZ 85226, Tel: (480) 552-0453, Fax: (480) 554-7171, Email: charles.zhang@intel.com

Control and Control-Oriented Modeling of Manufacturing Machines, Processes, and Systems *(Manufacturing Equipment TC)*

Papers are invited dealing with theoretical and experimental advances in the control and control-oriented modeling of manufacturing machines, processes, and systems. The goal of this symposium is to present theoretical concepts and practical state-of-the-art approaches to the control and control-oriented modeling of manufacturing machines, processes, and systems. Papers should include novel theoretical contributions or applications. It is preferable to have theoretical results complemented with experimental evaluations. Papers from the industrial sector are strongly encouraged.

Specific topics of interest include, but are not limited to: precision material removal and deposition, modular and reconfigurable software architectures, process control of machining and non-traditional processes, parallel (simultaneous) manufacturing systems, geometric and thermal error compensation, control-oriented process modeling, manufacturing system supervision, multi-spindle systems, high-speed contouring, intelligent manufacturing systems, and deburring and finishing processes.

Dr. Robert G. Landers, Department MAEEM, University of Missouri at Rolla, 1870 Miner Circle, Rolla, MO 5409-0050, Tel: (573) 341-4586, Fax: (573) 341-6899, Email: landersr@umr.edu

Dr. L. Ken L. Saunders, Mechanical and Aerospace Engineering, University of Colorado, Colorado Springs, 1867 Austin Bluffs Parkway, Ste. 202E, Colorado Springs, CO 80918, Tel: (719) 262-3252, Fax: (719) 262-3042, Email: lksaunders@engineering.uccs.edu

Environmentally Conscious Design and Manufacturing Courses *(Life Cycle Engineering TC)*

A professor teaching design and manufacturing faces several hurdles when attempting to include the environment and sustainability in a Mechanical and Manufacturing Engineering Program. Among these hurdles are acceptance of the subject matter by peers, inadequate textbooks, and a lack of educational resources to support this effort. This symposium focuses on the materials and methods used in the teaching of environmentally conscious design and manufacturing, design for environment, industrial ecology and other related topics in a mechanical and manufacturing engineering program with the intent of providing resources to support teaching this subject matter.

Specific topics of interest include, but are not limited to: subject matter taught, syllabi development, laboratory support, textbook selection, and case studies.

Prof. Walter W. Olson, Dept. of Mechanical, Industrial and Manufacturing Engineering, MS 312, University of Toledo, Toledo, OH 43606, Tel: (419) 530-8227, Fax: (419) 530-8206, Email: wolson@eng.utoledo.edu

Delcie R. Durham, Ph.D., PE, Program Director MPM, Division of Design, Manufacture and Industrial Innovation, National Science Foundation, RM 550, 4201 Wilson Blvd., Arlington, VA 22230, Tel: (703) 292-7060, Fax: (703) 292-9056, Email: ddurham@nsf.gov

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2003 IMECE Call for Papers

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Accuracy and Stability in Machining *(Manufacturing Equipment TC)*

The manufacture of discrete parts through machining operations continues to be an important application in manufacturing. There are many aspects of the process that contribute to the overall efficiency, including machining parameter selection, CNC path planning, machine and workpiece dynamics, tool life, production planning, and workpiece accuracy, to name a few. This symposium will be specifically devoted to studies of: 1) the impact of process parameters, system dynamics, fixturing methodologies, material properties including residual stresses, and machine performance on workpiece geometric accuracy, including descriptions of pre-, in-, and post-process metrology; 2) stability in traditional milling, high-speed milling, turning, and drilling operations, including chatter prediction, avoidance, and detection methods; and 3) innovations in measurement techniques and data analysis. Papers that specifically explore these issues through process models/simulations, experimental investigations, new measurement devices/methods, and/or case studies will be reviewed. Industrial submissions will be especially welcomed, including suggestions for future research directions.

Prof. Tony L. Schmitz, Dept. of Mechanical and Aerospace Engineering, University of Florida, PO Box 116300, 237 MEB, Gainesville, FL 32611, Tel: (352) 392-0828, Fax: (352) 392-1071, Email: tschmitz@ufl.edu

Dr. John P. Snyder, TechSolve, 1111 Edison Drive, Cincinnati, OH 45216, Tel: (800) 345-4482, Fax: (513) 948-2109, Email: snyder@techsolve.org

Advances in Tooling and Work Holding Systems
(Manufacturing Systems TC)

Tooling and work holding systems play an important role in both traditional and modern manufacturing environments as they directly affect the manufacturing quality, productivity and cost of products. The time spent on designing and fabricating such systems significantly contributes to the production cycle when improving current products and developing new ones. Therefore, much attention has been paid in the recent years to study the various factors that affect the design and the development of tooling and work holding systems. The purpose of this symposium is to report the recent developments in advanced work holding, tooling, fixture analysis, design, and technology. It is expected that this symposium will focus on the emerging issues related to the fundamental theory, computational paradigms, system design and application.

Specific topics of interest include, but are not limited to: design, analysis and applications of tooling, cutting tools and tolerances, design, analysis and synthesis of fixtures, part-fixture contact mechanics, impact of fixture on part quality, agile and smart fixtures, and fixtures for micro and/or macro components.

Dr. A. Senthil Kumar, Associate Professor, Department of Mechanical Engineering, National University of Singapore, Singapore 119260, Tel: (+65) 6874 6800, Fax: (+65) 6779 1459, Email: mpeask@nus.edu.sg

Dr. Anil Srivastava, Manager, Research & Development, TechSolve Inc., 1111 Edison Drive, Cincinnati, OH 45216, Tel: (513) 948-2004, Fax: (513) 948-4022, Email: srivastava@techsolve.org

Advanced Condition Monitoring and Maintenance Technologies
(Life Cycle Engineering TC)

Mechanical equipment and manufacturing processes are becoming more complicated to provide more functionality and flexibility. At the same time, the pressure to increase quality and reduce the equipment life-cycle costs, human safety risks, and possible adverse environmental impacts, necessitates a new maintenance method where machines are serviced based on their condition rather than time of service. Condition-based maintenance (CBM) and process monitoring, when fully developed and implemented, will result in higher levels of safety and more reliable, maintainable, supportable, and efficient mechanical systems in manufacturing plants, aircraft, trains, automobiles, power plants, etc.

Specific topics of interest include, but are not limited to: sensors and signal processing algorithms, equipment condition and processes monitoring, diagnosis and prognosis methodology, CBM system design and optimization, maintenance action scheduling based on CBM and reliability life models, and industrial case studies.

Prof. C. James Li, Dept. of Mechanical, Aerospace and Nuclear Engg., Rensselaer Polytechnic University, Troy, NY 12180, Tel: (518) 276-6192, Fax: (518) 276-2623, Email: lic3@rpi.edu

Dr. Suk Hwan Choi, GE Gas Turbines (Greenville), LLC, 300 Garlington Road, GTTC, Mail Drop 200D, Greenville, SC 29602, Tel: (864) 254-4598, Fax: (864) 254-3941, Email: sukhwan.choi@ps.ge.com

Assembly Systems: Design, Modeling and Analysis for Quality and Productivity *(Manufacturing Systems TC)*

Current productivity and quality requirements are driving the development of efficient system-based approaches for design of the product and assembly processes. The ability to predict assembly process performance during the early stages of product development is becoming a critical goal of leading manufacturers. Agility and reconfigurability requirements of assembly lines for mixed products add additional complexities to the problem. The purpose of this symposium is to provide a forum for the dissemination of information in this area, and to coordinate research efforts across industry and academia. Special sessions on aerospace and automotive applications are planned.

Specific topics of interest include, but are not limited to: product data modeling for assembly, modular assembly systems and fixtures, reconfigurability and reusability analysis, tolerance analysis and synthesis integrating product and process characteristics, design for assembly and disassembly, non-rigid assemblies; large mechanical assemblies, dimensional management and variability control, monitoring, diagnosis, and process control, quality and reliability integration for process design and evaluation, data mining and information technology for quality and reliability improvement, and statistical methods driven by engineering models to locate root cause for process failure.

Dr. Darek Ceglarek, Dept. of Industrial Engineering, The University of Wisconsin-Madison, 1513 University Avenue, Madison, WI 53706-1572, Tel: (608) 265-3457, Fax: (608) 262-8454, Email: darek@engr.wisc.edu

Mr. Ramesh Kumar, Dimensional Control Systems, Inc., Engineering and Development Center, 580 Kirts Blvd., Suite 309, Troy, MI 48084, Tel: (248) 786-0145, Fax: (248) 269-9770, Email: kumarr@3dcs.com

Journal of Manufacturing Science and Engineering

It is with great honor and pleasure that I assume the responsibility of the Technical Editor of one of the most reputed journals in the field of manufacturing. It has attained its current reputation as a result of (1) the vision and sustained effort of the members of the executive committees of the Manufacturing Group and, in particular of MED, over the past decade, (2) the commitment and tireless work of the numerous Associate Editors and reviewers and, perhaps most importantly, (3) the able leadership and devotion of my predecessor, Professor Shiv G. Kapoor.

I would like to take this opportunity, on behalf of the whole international manufacturing research community, and on my own behalf, to express our deepest appreciation for Professor Kapoor's decade long dedicated service to our community. Under his stewardship we have witnessed a dramatic advance in the efficiency of the review process, number of published journal pages, quality and diversity of the publications and most importantly the standing of the journal among its peers.

From the start of my term, on March 1, 2002, I have continued to build upon Professor Kapoor's legacy that is primarily aimed at the further growth of the reputation of the Journal. Until the end of the year there will be no major changes in the mode of operation of the Journal. The major news to report is that the Journal's page allocation has increased to 850 pages per year and that the allowed length of technical papers has also increased from 6 to 9 transaction pages. In the next news article I will report on the detailed statistics and new appointments of Associate Editors, here, however, I would like to devote one paragraph to a major upcoming change.

ASME is in the process of trying to implement an entirely paperless paper submission and review process. JSME is one of the handful of ASME Transactions selected for initial implementation of the production version of the software to be released after Labor Day. The Journal Secretary, Mr. Thomas Milic (t-milic@northwestern.edu) and myself have been in the process of extensively testing the b-versions of the software. We believe that the system once fully implemented will significantly contribute to the reduction of the cycle time from submission to publication. As any change, however, there will be glitches and difficulties. Therefore, I appeal to you for your patience and help during the transition period that might take up to one year to complete.

On behalf of the Editorial Board I would like to thank the authors and reviewers for their continued support of the Journal. Also I would like to ask all of you to send me your comments on how to serve you better and make a good journal even better. (k-ehmann@northwestern.edu, phone: 847-491-3263, fax: 847-491-3915).

Kornel F. Ehmann, Technical Editor, JMSE

The 2002 Japan-USA Symposium on Flexible Automation

The 2002 Japan-USA Symposium on Flexible Automation was held in Hiroshima, Japan on July 14-19, 2002. It covers a wide spectrum of technical areas including, CAD, CAM, rapid prototyping, STEP application, manufacturing simulation, design, planning, scheduling and handling, inspection, monitoring, sensing and control, SCM and globalization, LEC and sustainable manufacturing, microfabrication, laser processing, machine tool metrology, robotics, vehicles, and vision systems. The symposium contains a total of 240 technical papers submitted from 15 countries. Keynote speeches were given by Dr. E. Garcia (DARPA, Exoskeleton for Human Performance Augmentation) and Professor Y. Hatamura (University of Tokyo, Learning from Failure).

Professor M. Tomizuki (University of California, Berkeley) received the Dr. Hideo Hanafusa Outstanding Investigator Award and Professor Jian Cao (Northwestern University) was granted the Young Investigator Award. The Symposium is scheduled to be held in Denver in 2004, Osaka in 2006, and Atlanta in 2008.

Steven Y. Liang, Georgia Institute of Technology

IMECE 2002 Special Event -
Securing a Successful Academic Career
8:30pm - 10:00pm, Monday, November 17, 2002.

Have you ever thought about a career in which you are your own boss, always work on things you enjoy, are surrounded by young and bright people, travel around the world, and are still paid a good salary? While it may sound too good to be true, that is the life of a college professor. If you are interested in such a career, plan to attend a special event organized by MED during which a panel of established faculty members and department chairs will talk about what needs to be done to secure a successful academic career. Topics will include the job search, and the tenure and promotion process. For information about the event, please contact Professor S. Jack Hu at jackhu@umich.edu.

IMECE 2002 Special Event -
Fostering Research Collaboration between Academia and Industry
8:30pm - 10:00pm, Monday, November 17, 2002

This MED event will provide an informal and relaxed environment in which IMECE attendees from academia and industry with an interest in manufacturing can mingle and get to know each other better. Getting to know one another is the first step in building a trusting working relationship. The atmosphere is intended to also promote the sharing of industry problems and ideas for solutions - discussions that serve as a seed in building a collaborative interaction. All MED members and others with an interest in manufacturing engineering are invited to join us for this event. A cash bar will be available. A limited number of complimentary beverage tickets will be distributed at the event.

Upcoming IMECE 2002 (November 17-22, 2002, New Orleans, LA)

The Manufacturing Engineering Division will sponsor or co-sponsor 30 sessions at the 2002 International Mechanical Engineering Congress and Exposition (November 17-22, 2002, New Orleans, Louisiana). Activities will include 20 regular paper sessions with 80 technical papers, 2 student design competition sessions, 8 panel sessions and two special events. The student design competition will be held during sessions MED-10 and MED-11 on Tuesday, November 19. A new initiative sponsored by MED in this IMECE event is the two special events on Monday night following the ASME opening reception. The titles of these events are: "Securing a Successful Academic Career" (Special Event I) and, "Fostering Research Collaboration between Academia and Industry" (Special Event II). More details on these two events are provided in the highlight boxes above. All MED members are invited and encouraged to attend the member meeting at 5:30 pm on Tuesday, followed by the MED banquet at 7:00 pm. The time table is provided below. For more detailed information, please contact Prof. Jian Cao (jcao@northwestern.edu, 847-467-1032) or Prof. Bill Endres (wjendres@mtu.edu, 906-487-2567).

Jian Cao, Northwestern University

	November 17 Sunday	November 18 Monday	November 19 Tuesday	November 20 Wednesday	November 21 Thursday
7:45 - 9:15am		MED-3A: Process Planning & Optim. (1/4)	MED-8A: Auto body Joining and Assem. (3/3)		
		MED-3B: Metal Removal (1/4)	MED-8B: Panel - Dynamic Performance of Machine Tool Sys.		
9:30 – 11:00 am		MED-4A: Process Planning & Optim. (2/4)	MED-9: Panel - Current Aspects in Hard Machining	MED-13A: Panel - Reconfigurable Mfg. Sys. (1/3)	AMD-7D: A Glimpse into the Future of Sheet Metal Forming
		MED-4B: Metal Removal (2/4)		MED-13B: Microelectronics	
11:15 – 12:45 pm		MED-5A: Process Planning & Optim. (3/4)	MED-10: Student Design Competition (1/2)	TMMS-2: Devices Mixed-Scale (nano/micro/meso)	
		MED-5B: Metal Removal (3/4)			
2:00 – 3:30 pm		MED-6A: Auto-body Joining and Assem. (1/3)	MED-11: Student Design Competition (2/2)	MED-14A: Reconfigurable Mfg. Sys. (2/3)	
		MED-6B: Metal Removal (4/4)		MED-14B: Panel - Microelectronics	
				TMMS-3: Wafer Process.	
3:45 – 5:15 pm	MED-1: Virtual Mfg (1/2)	MED-7A: Process Planning & Optim. (4/4)	MED-12A: Panel - Assessment of Machining Models Project	MED-15A: Reconfigurable Mfg. Sys. (3/3)	
	TNANO-1 Surf. Eng: Nano/Micro/Macro	MED-7B: Auto body Joining and Assem. (2/3)	MED-12B: Panel - E-mfg roadmap planning	MED-15B: Panel - Future Dir. in Machine Sensing and Control	
5:30 – 7:00 pm	MED-2: Virt. Mfg (2/2)	ASME opening reception	MED member meeting		
	TNANO-2: Panel - Surf. Eng, Nano/Micro/Macro				
7:00 –			MED dinner		
8:30 – 10:00 pm		SE-I: Securing a Success. Academic Career			
		SE-II Collab. between Academia and Industry			

National Manufacturing Week 2003

The National Manufacturing Week (NMW) 2003 conference will be held in Chicago, March 3-6. In the past, NMW was arranged in conjunction with other societies and with support from other divisions within ASME. Many of the topics currently of interest to exhibitors and attendees deal with plant engineering and maintenance, systems and automation, information technology, and design engineering. The attendees are typically practicing engineers and managers who want to transfer the knowledge gained from NMW sessions to their work-places (fast turnaround). Accordingly, the plant engineering, design engineering, and manufacturing engineering divisions of ASME have each been given responsibility for organizing several 75 minute sessions. Sessions may be combined and arranged in any format, such as panel, presentation or workshop. Currently, MED has been given charge of a total of 12-15 total sessions from within the systems and automation and the IT groupings. These sessions will focus on state-of-the-art and cutting-edge technologies that will interest industries and other competitive technology promoters.

Topics for short-courses/workshops for the sessions include (but are not limited to): Supply Chain Management/logistics, E-manufacture, Lean Manufacturing, Warehouse/material handling logistics, 6-Sigma Quality, Machine tools and Automation, Rapid Tooling, Rapid Prototyping, Computer-aided Machining, E-business.

A potential list of track organizers and more details on the individual sessions are forthcoming. It is the objective of the organizers to maintain an interactive workshop or tutorial perspective, through the sessions, so as to interest a diverse audience. For more information, please contact the MED Program chair for NMW 2003, Dr. Shivakumar Raman at 405-325-4350 or raman@ou.edu.

Shivakumar Raman, University of Oklahoma

MED Honors Committee

The ASME MED Honors Committee reviews and evaluates candidates for the Blackall Machine Tool and Gage Award and the William T. Ennor Manufacturing Technology Award. The Blackall Machine Tool and Gage Award is given for the best paper(s) clearly concerned with or related to the design or application of machine tools, gages, or dimensional measuring instruments, submitted to ASME for presentation and publication. The award was established in 1954 by Frederick S. Blackall, Jr., Fellow and 72nd President of ASME. Papers nominated for the Blackall Award must have been presented or published within the previous two calendar years.

The William T. Ennor Manufacturing Technology Award recognizes one (or a team of) individual(s) who has (have) developed or contributed significantly to the development of an innovative manufacturing technology, the implementation of which has resulted in substantial economic and/or societal benefits." This award was established in 1990 by the Manufacturing Engineering Division of ASME in honor of William T. "Bill" Ennor who was the Assistant Director of Research at the Alcoa Aluminum Research Laboratories.

ASME members are strongly encouraged to submit nominations for both the Blackall and Ennor Awards. Nominees for the Blackall Award are also proposed by the Technical Editor of ASME Journal of Manufacturing Science and Engineering with the assistance of the Associate Editors. The deadline for receipt of completed nominations for next year will be February 1, 2003. It is advisable to contact an executive committee or honors committee member if you intend to submit a nomination.

The Honors committee would like to recognize the recipients of the 2001 Blackall and Ennor awards:

Blackall Machine Tool and Gage Award

WONCHEOL CHOI, Ph.D., algorithm specialist, Align Technology, Santa Clara, Calif.,; and Thomas R. Kurfess, P.E., Ph.D., professor, Georgia Institute of Technology, Atlanta, for their papers, "Dimensional Measurement Data Analysis, Part 1: Zone Fitting Algorithm" and "Dimensional Measurement Data Analysis, Part 2: Minimum Zone Evaluation," which present the development of good analytic techniques to formulate the tolerance zones of a three dimensional object from discrete measurements taken on a CMM. Dr. Choi is an algorithm specialist at Align Technology (Santa Clara, Calif.), a medical device company that designs and manufactures a computer-aided orthodontic product. Dr. Kurfess currently holds the rank of professor at The George W. Woodruff School of Mechanical Engineering. Kurfess' research focuses on the design and development of high precision manufacturing and metrology systems.

William T. Ennor Manufacturing Technology Award

ROBERT J. HOCKEN, Ph.D., distinguished professor and director, Center for Precision Metrology, University of North Carolina, Charlotte, for seminal contributions in precision engineering and metrology, including performance standards, software, laser tracking, measurement and compensation methods, virtual manufacturing techniques, and more than 100 technical papers published around the world. Hocken is the Norvin Kennedy Dickerson Jr. distinguished professor of precision engineering at the University of North Carolina at Charlotte. His honors range from a Silver Medal from the Department of Commerce, National Bureau of Standards (1978) and a Presidential Executive Award from the Department of Commerce (1987) to F.W. Taylor medals from the International Institute for Production Engineering Research in Paris, France (1979) and SME (1985). In 2000, he received ASPE's Lifetime Achievement Award.

IMECE 2001

MED had 27 sessions in IMECE 2001, with 53 papers in 8 symposia and 7 panel sessions. The details on the symposia and the panels can be found in the MED Newsletter of Fall 2001 and on the MED web page. The total attendance for the MED sessions was 349. It was very encouraging to see that all the student competition teams could attend, including several from overseas, and their presentations and technical contents were excellent. Congratulations to Jean-Phillippe Clerc, Mathew Sapp, David Lewis, Robert Dieme, Yassine Cerkaoui, and James Newbury from the University of Florida, for being placed first in the Student Manufacturing Design Competition. *Amit Bagchi, MED Program Chair, IMECE 2001*

Tom Kurfess and Woncheol Choi (not shown) receive Blackall award from Bill Weiblen

Student Design Competition Award Winners