North American Manufacturing Research Institute of SME announces

FIFTEENTH
NORTH AMERICAN MANUFACTURING RESEARCH CONFERENCE AND ANNUAL MEETING

NAMRC XV

May 27-29, 1987
Lehigh University, Bethlehem, Pennsylvania, USA
CONFERENCE PROSPECTUS
The Fifteenth North American Manu­facturing Research Conference (NAMRC XV) is designed to provide a forum for the timely presentation and critical discussion of results of basic and applied research in metal working (machining and forming) and related manufacturing systems. The papers expected at this conference will describe research in the fields of metal forming, metal machining, grinding, non-traditional processes, machine tools, manufacturing systems, robotics, and related controls. All papers presented at the conference are con­tained in the bound conference Proceedings and document the research and development activities conducted in many of the important manufacturing research centers around the world.

The conference will consist of three paper tracks: forming (F), machining (M), and manufacturing systems (S). The paper ses­sions will consist of the formal presentation of the papers plus a discussion period that encourages interaction with the attendees. We urge you to attend and actively contribute.

CONFERENCE LOCATION
The conference will be located in Neville Hall on the main campus of Lehigh Univer­sity, located in the south side of Bethlehem, Pennsylvania. The campus is a ten minute drive from the Allentown-Bethlehem-Easton (A-B-E) Airport, the principal airport serving the Lehigh Valley.

REGISTRATION AND CANCELLATION FEES
The registration fee for NAMRC XV is $275 (U.S. dollars) for advance registration, and $250 (U.S.) for at-the-door registration on May 27, 28, and 29. The fee includes entrance to all technical sessions, refresh­ments, three luncheons, the conference banquet, and a bound copy of the conference proceedings. There will be no one-day registration fees. For cancellations, there will be no refunds for authors or session chairs.

Graduate student registration fee is $100 (U.S.) or $125 (U.S.) at the door. This fee is a special rate to encourage attendance by graduate students, and includes all technical sessions, refreshments, three luncheons, the conference banquet, and a bound copy of the conference proceedings. Students can register to attend only the paper ses­sions for $50.

Advanced registration should be confirmed in writing. Refunds, minus a $75 cancella­tion fee, will be made to those cancelling their registration at least five working days prior to the conference. No refunds will be granted after May 19, 1987. Substitutions will be accepted after this time. For additional information, contact Prof. J. D. Groover at (215) 798-4030 or Mrs. Fern Satzinger at (215) 798-4114.

TO REGISTER
Complete and return the registration form at the end of this announcement with proper fee. Checks, money orders, or purchase orders should be made payable to Lehigh University and mailed to Mrs. Fern Satzinger, Mohler Building 200, Lehigh University, Bethlehem, PA 18015. Sorry, credit cards cannot be accepted.

TRANSPORTATION TO CONFERENCE
For those intending to drive to the confer­ence, the major highways passing through the Lehigh Valley are Interstate 78 and the Northeast Extension of the Pennsylvania Turnpike.

Air service to Bethlehem and the Lehigh Val­ley is provided by Allegheny Commuter, Continental Express, Eastern, Eastern Express, Hessilk/Paidmont, Northwest Uni­ted, and U.S. Air through the Allentown­Bethlehem-Easton (A-B-E) Airport. There are daily direct flights between A-B-E and Philadelphia, Pittsburgh, Chicago, Washing­ton, and other cities. In addition, Newark International Airport is approximately 1.5 hours by car. And Philadelphia International Airport is about 2.5 hours by car.
LODGING
The official hotel for the conference is the Bethlehem Hotel, located in downtown Bethlehem, about a half-mile from the Lehigh University campus. A block of 75 rooms has been reserved for conference participants at the Bethlehem Hotel. This block will be released after May 8, 1987. Other lodging is also available to meet the individual needs of registrants. The following is a listing of available lodging alternatives. Conference attendees are urged to make their own reservations as early as possible.

To receive the special conference room rates (where applicable), be sure to mention that you will be attending the North American Manufacturing Research Conference at Lehigh University.

Bethlehem Hotel
437 Main Street, Bethlehem, PA 18018.
Telephone (215) 967-3771.
Rates: $50/ single, $60/ double, plus tax. Approximately 0.5 mile to campus, 5 miles from A-B-E Airport. Airport limousine service available for hotel guests.

The following are lodging alternatives to the Bethlehem Hotel:

On-campus: Taylor Hall (a Lehigh University residence hall), air-conditioned common bathroom, full maid service, continental breakfast available. Rate: $22.25/ single, $34/ double (twin beds). Telephone (215) 758-3510. (5 minute walk to conference).

Bethlehem Holliday Inn
Rt. 22 and 512, Bethlehem, PA 18017.
Telephone (215) 866-8800.
Rates: $64/ single, $80/ double, plus tax. Approximately 5 miles from campus, 4 miles from A-B-E Airport. Airport limousine service available for hotel guests. Direct phone line from baggage area at airport.

Comfort Inn
Rt. 22 and 191, Bethlehem, PA 18017.
Telephone (215) 865-6300.
Rates: $29.95/ single, $32.95/ double, plus tax. Approximately 6 miles to campus, 5 miles from A-B-E Airport. No airport limousine service available.

AIRPORT/HOTEL TRANSPORTATION
Information on airport limousine service for hotel guests is indicated for each of the above hotels. Taxi service is available from the airport by calling the Lehigh Valley Taxi Company at 867-9885. One-way taxi fare to campus from A-B-E Airport is about $10.00 for one passenger and $4.00 for each additional passenger. The major car rental companies are available at the A-B-E Airport.

TRANSPORTATION
Complimentary van shuttle service will be available between the individual hotels and the conference location. Contact the hotel desk or the conference registration desk for more information.

PARKING
Parking on the Lehigh University campus should be no problem in late May. However, it is required that you display a Visitor's Parking Pass on your vehicle to use the University Parking Lots. Please indicate on the Registration Form if you will need a Visitor's Parking Pass.

WEATHER AND DRESS
Lehigh University is located in Bethlehem in eastern Pennsylvania. The weather should be pleasant in late May—usually sunny with an average temperature around 66 degrees. However, there can be periods of rain, so bring an umbrella. Walking shoes and a light jacket will be appropriate for this environment.

CONFERENCE INFORMATION CENTER AND INCOMING MESSAGES
General conference information can be obtained by calling Fern Setzring at (215) 758-4114 during regular business hours, or by calling the Lehigh University Conference Services Desk at (215) 758-4398 from 7:00 a.m. to 9:00 p.m. Incoming messages for conference attendees will be accepted at (215) 758-4114 and posted on a bulletin board near the conference registration area. Sessions will not be interrupted to relay messages.
Spouse's Program
A Spouse's Program will be available for those interested. The program will include a tour of the beautiful Lehigh Valley (Wednesday), a day trip to Bucks County for shopping and a play (Thursday), and a special breakfast (Friday). The fee for this program is $50.00, plus $25.00 for the Wednesday evening NAMRI Banquet.

Proceedings
All registered conference participants will receive one bound copy of the NAMRC XV Proceedings at conference registration. Additional copies may be purchased at the conference or, after June 1, by mail order through the Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, Michigan 48121 USA. Phone (313) 271-1500, Ext. 418. The cost per copy is $55 for NAMRI/SME and SME members, $63 for non-members.

Related Conferences
- CIRP International Seminar on Manufacturing Systems (Major Theme: Computer Automated Process Planning) to be held June 1-2, 1987, at Pennsylvania State University, University Park, PA.
- International Conference on the Manufacturing Science and Technology of the Future (sponsored by Massachusetts Institute of Technology) to be held June 3-5, 1987 at MIT, Cambridge, MA.

These two conferences are being scheduled immediately following NAMRC XV for the convenience of our international visitors.
TECHNICAL SESSIONS AND PROGRAM

TUESDAY, MAY 26
5:00-8:00 p.m.
Registration and Reception
6:30 10:00 p.m.
NAMRI/ SAE Board of Directors Dinner and Meeting
Hotel Bethlehem, Lehigh Valley Suite East

WEDNESDAY, MAY 27
9:00-9:15 a.m.
Registration
Lobby, Neville Hall, Lehigh University Campus
(Coffee and donuts served)
9:10-9:15 a.m.
General Session
Room: Neville 1

Introductions
Marti P. Groover
Professor of Industrial Engineering
Lehigh University

Welcoming Remarks:
Donald M. Bolle
Dean, College of Engineering and Physical Sciences
Lehigh University

Co-Chairmen: R. F. van der Velden
President, NAMRI/SME
Chairman of Mechanical Engineering
University of Vermont

Keynote Address:
"Automated Manufacturing Research Facility at NBS as a Test Bed for Manufacturing Research"
John A. Simpson
Director, Center for Manufacturing Engineering
National Bureau of Standards
10:15-10:30 a.m.
Coffee Break
Lobby, Neville Hall
10:30-12:00 noon
Three Parallel Sessions
Session: S-Wed1 (Systems)—Management, GT, and CAM
Room: Neville 1

Co-Chairmen: W. G. Odrey, Lehigh University,
Bartholem, PA; and D. Koren, University of Michigan,
Ann Arbor, MI


3. "An integrated CADP and Environment System," L. Zhai and L. Kuo, McGill University, Montreal, Canada

Session: M-Wed1 (Machining)—Non-Traditional Machining
Room: Neville 2

Co-Chairmen: K. Weinmann, Michigan Technological University, Houghton, MI, and G. Sathyapavanam, Lehigh University, Bethlehem, PA

1. "A Study on the Profil Reproduction in Ultrasonic Machining," V. Soundaranjan,
Engineering College, Pondicherry, India, and
V. Radhakrishnan, IIT, Madras, India

2. "A Study of Characteristics of Corona Discharges in EDM," K. P. Raju and J. S. Singaper, University of Nebraska, Lincoln, NE

3. "A Contribution to the Monitoring and Control of EDM Based on High Frequency Methods," K. K. Nair and E. Zettari, University of Birmingham, Birmingham, AL

Session: I-Wed (Forming)—Analytical Methods
Room: Neville 3

Co-Chairmen: T. Allan, Ohio State University, Columbus, OH; and M. Koshi, University of Tokyo, Japan

1. "Application of the Force Balance Method to Several Metal Forming Problems," F. Avdour, Lehigh University, Bethlehem, PA; and C. Choi, Pusan National University, Pusan, S. Korea; and J. M. Kim, University of Ulsan, S. Korea
9:55-10:00 a.m.
Coffee Break
Lobby, Neville Hall
10:00-12:00 noon
Three Parallel Sessions
Session: S/Thr/I (Systems)—Flexible Systems for Design and Production
Room: Novia 1
Co-Chairmen: E. N. Nagel, Lehigh University, Bethlehem, PA; and P. Cohen, Pennsylvania State University, University Park, PA.
Session: M/Thr/1 (Machining)—Sensors and Tool Monitoring
Room: Neville 2
Co-Chairmen: J. E. Kake, Lehigh University, Bethlehem, PA; and D. A. Dornfeld, University of California, Berkeley, CA.
Session: S/Thr/1 (Sheet Forming-1)
Room: Neville 3
Co-Chairmen: K. N. Nagel, Lehigh University, Bethlehem, PA; and D. G. McDonnell, MFS Industries Corp., Dayton, OH.
12:00-1:00 p.m.
NARIT / SME Luncheon
Asa Packer Room, University Center, Lehigh University Campus
1:30-2:30 p.m.
Three Parallel Sessions
Session: S/Thr/2 (Systems)—Reprated Surfaces and Solid Modelling
Room: Neville 1
Co-Chairmen: T. Ojima, Lehigh University, Bethlehem, PA; and S. Kapur, University of Illinois, Urbana, IL.
Co-Chairman: S. Ramalingam, University of Minnesota, Minneapolis, MN, and W. Zimmers, Jr., Lehigh University, Bethlehem, PA.


Session: F/F/1 (Forming)—Failure, Instability, and Surface Temperature
Room: Neville 3
Co-Chairmen: R. Lane and M. Bauer, University of Storgart, FRG, and H. Kudo, National University, Yokohama, Japan.


Coffee Break

Lobby, Neville Hall
10:30-12:00 noon
Three Parallel Sessions

Session: S/F/1 (Symposium)—Robot Accuracy
Room: Neville 1
Co-Chairmen: K. D. Fennig, Lehigh University, Bethlehem, PA, and W. B. Dehner, Rensselaer Polytechnic Institute, Troy, NY.


2. "Robot Accuracy and its Improvement—An Experimental Investigation," M. C. Leu, Cornell University, Ithaca, NY, and V. Dubevski, University of Skopje, Skopje, Yugoslavia.

3. "Improvement of Accuracy in Robotic Contouring Using a Pre-Gain Control Factor," D. W. Wu and S. Nebergall, University of Illinois at Chicago, Chicago, IL.

Session: F/F/2 (Machining)—Panel: Research Issues in Metal Machining
Room: Neville 2
Co-Chairmen: G. E. Kane and G. Sathyanarayanan, Lehigh University, Bethlehem, PA.

Panel Discussion: Research Issues in Metal Forming
Room: Neville 3
Co-Chairmen: R. Aoi, Lehigh University, Bethlehem, PA, and C. Van Tyne, Lafayette College, Easton, PA.

Session: F/F/3 (Forming)—Panel: Research Issues in Metal Machining
Room: Neville 1

Lunchroom

Phase Room, University Center, Lehigh University Campus
Conference Area
1:15-3:30 p.m.
Laboratories open for informal visits.
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<table>
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<tr>
<th>Description</th>
<th>Amount</th>
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<tr>
<td>Conference Registrations at $25 U.S. per person</td>
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</tr>
<tr>
<td>Additional banquet tickets at $25 U.S. per person</td>
<td>$</td>
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<tr>
<td>Spouse's Program at $50—details in announcement</td>
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<td>(Spouse's Program does not include banquet)</td>
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<tr>
<td>Graduate student registration at $100 U.S.</td>
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<td>(Full conference)</td>
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<td>Graduate student registration at $10 U.S. (Technical sessions only)</td>
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Total Payment: $__________

Check here if you will have a car and will need a Visitor's Parking Pass for University parking.

Please check if you have any special dietary requirements, and indicate the nature of these requirements below.

Please check here if you are a handicapped person requiring special considerations, and indicate the nature of these considerations below.

Checks, money orders, or purchase orders should be made payable to Lehigh University and mailed to Mrs. Fern Sotzing, Mohler Building 200, Lehigh University, Bethlehem, PA 18015. Sorry, credit cards not accepted.

For additional information, contact Prof. Mikell Groover at (215) 758-4030 or Mrs. Fern Sotzing at (215) 758-4114.