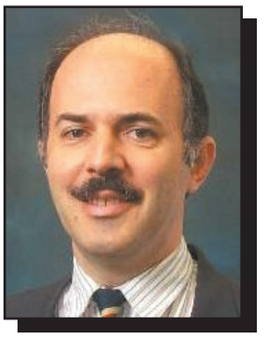
ASME
SETTING THE STANDARD
1880 2005

Fluids Engineering

The Fluids Engineering Division is involved in all areas of fluid mechanics, encompassing both fundamental as well as applications

Message from the Division Chair



by Stathis Michaelides

I am delighted to report to you that the Fluids Engineering division of the ASME has had an excellent year. In July 2004, we had a very successful meeting in Charlotte, NC, in collaboration with the Heat Transfer Division of the ASME, where more than 500 scientists and engineers attended. There were several excellent presentations and good camaraderie. In the last fifteen years our summer annual meetings have attracted a great number of attendees, were the venues for hundreds of challenging symposia and saw the presentations of thousands of excellent scientific and engineering papers. Our summer annual meeting is now recognized as one of the premier world events in the applications of Fluid Mechanics and, every year, attracts a great number of papers and attendees. This was accomplished without loosing any ground in our presence at the ASME winter meeting, the International Mechanical Engineering Conference and Exhibition: in the last Conference, which took place in Anaheim during the third week of November 2004, our Division has contributed thirty five sessions with more than one hundred papers. This is another indication that our events are of the high quality as to continue to attract scientists and engineers who work with fluids.

Our next big event is the Summer Meeting of 2005, to be held in Houston, TX, from June 20 to June 23, 2005. The meeting is shaping very well, with eleven symposia and fifteen fora scheduled. In addition, we are planning to have four plenary lectures and six tutorial sessions for practicing engineers in the topics: Experimental measurements and diagnostics in Fluids, Measurements in Multiphase Fluids, CFD in multiphase flows, CFD codes for single-phase flow, Nano- and micro- fluid dynamics, and, Pumps-CFD and applications. We will also have a small group of ICONE (nuclear engineering members) who will join us by holding their workshop during our meeting. I expect that the Houston Meeting will become a memorable event and I invite you to participate.

In the past couple of years the ASME has undergone significant administrative changes. With Virgil R. Carter being appointed as the new Executive Director, the ASME is looking more closely at its administrative structure and the role of the divisions. Presentations about the proposed structures were made to the membership at our meeting in Charlotte (July 2004). You will be able to find news on this subject at the website of the ASME's Council of Engineering: http://www.asme.org/coe/ The position of the FED executive committee on this subject is, in any future re-organization, to remain close with the other Divisions of the Basic Engineering Group, where we have belonged for years and with whom we have collaborated extnsively. Regardless of the administrative changes, the Division will continue to support our excellent meetings and bring forth scientific events that are valuable to the scientist as well as to the practicing engineer. Our future plans include a joint American-European meeting in the summer of 2006 in Miami, Fl and a joint American-Japanese meeting in the summer of 2007 at a location in the West Coast.

Among the other activities underway, Dr. Sam Martin's "FED Magazine" is coming to completion and will soon be available to all of us. Sam has captured the history of our Division and the accomplishments and contribution of our members to the profession and the society. The *Journal of Fluids Engineering (JFE)* continues to grow in the number of

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Spring 2005 Newsletter
Dr. James C. S. Meng, *Editor*

Fluids Engineering Honors and Award Committee

by M. H. Hosni, Chair

Fluids Engineering Award

The Fluids Engineering Award is conferred upon an individual for outstanding contributions over a period of years to the engineering profession and in particular to the field of fluids engineering through research, practice or teaching. The recipient of the **2004 Fluids Engineering Award** is ***Dr. Joseph Katz,*** the Whiting School Mechanical Engineering Distinguished Professor at The Johns Hopkins University. Dr. Katz selected for the development and implementation of innovative quantitative flow visualization techniques, and for the use of these techniques in advancing our understanding of complex phenomena in cavitation inception, turbulent shear flows, turbomachinery flows, and ocean small-scale dynamics. His research extends over a wide range of fields, with a common theme involving experimental fluid mechanics and development of advanced diagnostics techniques, including Particle Image Velocimetry (PIV) and holography. He has received several recognitions including the National Science Foundation Presidential Young Investigator Award in 1985 and the Moody Best Paper Award from ASME Fluids Engingeering Division in 1992.

The 2004 Fluids Engineering Award was presented to Professor Katz at the Joint Heat Transfer/Fluids Engineering Summer Meeting, which was held July 11–15, 2004 in Charlotte, North Carolina. ■

Robert T. Knapp Award:

This award is given to the authors of the best paper presented to the Fluids Engineering Division dealing with analytical, numerical and laboratory research. The **2004 Knapp Award** was awarded to ***Dr. Michael P. Schultz,*** Naval Architecture & Ocean Engineering Department, and Dr. Karen A. Flack, Mechanical Engineering Department, at the United States Naval Academy for their paper entitled "Turbulent Boundary Layers Over Surfaces Smoothed by Sanding." This paper is published in the ASME *Journal of Fluids Engineering,* Vol. 125, 2003. ■

Lewis F. Moody Award:

The Lewis F. Moody Award is given to the authors of the best paper presented to the Fluids Engineering Division dealing with a topic useful to in mechanical engineering practice. The **2004 Moody Award** was presented to ***Dr. M. T. Schobeiri*** and ***Mr. K. Read*** of Texas A&M University and ***Dr. J. Lewalle*** of Syracuse University for their paper entitled "Effect of Unsteady Wake Passing Frequency on Boundary Layer Transition, Experimental Investigation, and Wavelet Analysis." This paper is published in the ASME *Journal of Fluids Engineering,* Vol. 125, 2003. ■

Fluid Machinery Design Award:

Dr. Jinkook Lee

The Fluid Machinery Design Award is presented biennially to recognize excellence in the design of machinery involving significant fluid mechanics principles, which benefits mankind as exemplified by product use within the past decade. The recipient of the **2004 Fluid Machinery Design Award** was ***Dr. Jinkook Lee***. Dr. Lee is Director, Advanced Technology, at the Argo-Tech Corporation. In this position, his 26 years of hands-on turbomachinery experience have culminated in the fluid dynamical design of a new generation of fuel pumps that successfully operate at the extreme flow conditions demanded by today's civilian and military aircraft. His inducers and centrifugal pumps, which are found on most of the world's modern aircraft, receive fuel that is barely above the vapor pressure; can ingest equal volumes of liquid and gas; and yet can pump successfully at the nearly zero output flow coefficient now demanded at the reduced power settings of the latest generation of large, high-thrust turbojet aircraft engines. Dr. Lee is currently Vice-Chair of the Fluid Applications and Systems Technical Committee of the Fluids Engineering Division and has been Lead Organizer and Session Chair of the Fluid Machinery Forum since 1996. He is also a member of the Turbomachinery Technical Committee of the International Gas Turbine Institute and serves as an Associate Technical Editor of the *Journal of Fluids Engineering*. ■

Message from the Division Chair

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papers submitted and accepted and in the number of pages, while its price to the members of the Division remains the same. It is a *Journal* that provides a unique forum for the Fluid Engineers to communicate new findings, techniques, and applications. All authors of papers presented at FED meetings are strongly encouraged to submit their contributions to this *Journal*.

If you have not participated in the activities of the Division, I would like to invite you to do so. You may wish to become involved in the program planning of the FED. There are a number of opportunities to do so and to contribute by participating in the activities of the Technical Committees (they are open to all the members of the Division) or by helping organize future Symposia and Fora. The ASME is your professional society, and the FED is the Division that is closest to your professional interests. Come to the meetings and see all the other folks who share the same professional interests with you. I sincerely hope to see you in Houston on June 20th.

With best wishes,
Stathis Michaelides ■

Fluids Engineering Technical Committee's Report

MNFDTC Technical Committee

The Micro and Nano Fluid Dynamics Technical Committee (MNFDTC) is now in its second full year since its creating by the Fluids Engineering Division, and it is thriving. Our committee serves the fluids engineering division by promoting and coordinating activities associated with fluid dynamics at the micron and nanometer scale. Examples of activities include fluid transport based on phenomena useful in small-scale devices such as electro-kinetic forces and microbubbles, devices utilized to control fluid transport in microdevices such as pumps, valves and sensors, and fundamental phenomena of fluids in micro- and nano-scale domains, such as mixing, viscous damping and filtering and manipulation of particles such as those used in bead chemistry or individual cells. Our most important activity has historically been the organization of forums and symposia at the annual Fluids Engineering Division Summer Meeting (FEDSM) and the International Mechanical Engineering Congress and Exposition (IMECE), the latter meeting seeing significant activity in this area since 1994 due to its highly interdisciplinary nature and the close collaboration we enjoy with other division of ASME such as the MEMS subdivision and the Nanotechnology track.. In the November 2004 IMECE meeting in November in Anaheim CA, 50 papers and two Keynote lectures were presented in 10 sessions, including a poster session. This meeting was expertly organized by Channy Wong of Sandia National Laboratories and Kendra Sharp of Pennsylvania State University. They were ably assisted by a broad group of researchers in both academia and industry from around the world, who helped with the paper reviews and selection of the schedule. The IMECE 2005 in Orlando will be chaired by Kendra Sharpe (Penn State) and Steve Wereley (Purdue), and should continue to highlight the exciting research areas in this rapidly growing technical area. Last yearís summer meeting in Charlotte, NC featured symposia on fluid visualization in Microsystems and on Fluidics.

The committee maintains a web site http://microfluidics.engin.brown.edu/ASME which contains the current call for papers as well as the programs from previous MNFDTC symposia. There is also an email list that you can join to be informed of upcoming conferences and other important announcements in the micron and nanometer scale fluid dynamics community. You can also contact the current chair, Kenny Breuer at Brown University (kbreuer@brown.edu), or the vice chair, Channy Wong at Sandia National Laboratories (ccwong@sandia.gov). ■

Fluid Applications and Systems Technical Committee (FASTC)

The Fluid Applications and Systems Technical Committee (FASTC) is charged with the responsibility of promoting advancement of fluid engineering technologies related to fluid mechanics applications. The committeeís primary function is to organize quality technical programs and provide a forum for presentation and exposure to recent advances in the area of fluid machinery, fluid transients, and industry & environmental applications for the semi-annual meetings of the Fluids Engineering Division. In addition, we seek to provide an interface between designers, developers, and researchers. These activities also include programs focused on learning and discussion including tutorial lectures and panel discussions.

The major activities of the Committee occur during the semi-annual meetings of the Fluids Engineering Division. Specially, FASTC meetings occur at the IMECE (November) and at the FED Summer Meeting (June or July). At the Committee meetings, the primary activity is the planning of future technical programs. FASTC members cooperate to organize symposia and forums in theses area. The FASTC occasionally cooperates with other technical committee and coordinating groups to promote activities of mutual interest. The FASTC cordially invites your participation in committee activities such as planning, organization, and presentation of symposia and forums at the ASME Fluids Engineering Division. We are very interested in new ideas to further improve our programs. Like most of ASME, the committee operates because of the efforts of volunteers. To become a member of FASTC, an individual should have a strong interest in fluid mechanics, be willing to perform volunteer activities like paper reviewing, and be willing to attend Committee meetings at least once every several years. If you would like to volunteer, or if you have any questions or suggestions for the committee, please contact the Chair, Dr. Jinkook Lee of the Argo-Tech Corporation at Cleveland, Ohio [phone: (216) 692-5084 or email: leej@argo-tech.com] or the Vice Chair, Dr. Yu-Tai Lee of David Taylor Model Basin at NSWCCD [phone: (301) 227-1328 or email: LeeYT@nswccd.navy.mil].

■

Annual Report on the Status of *JFE*

by J. Katz

After five years of service as a Technical Editor, my appointment has been extended by another five years, and I would like to start this article by thanking the Executive Committee for their continued trust in my ability to manage the journal. The truth is that my most important contribution to *JFE* has been to appoint Mrs. Laurel Murphy as an Editorial Coordinator. As any person that has had any association with *JFE* already knows, Laurel has been the primary facilitator of the smooth operation of the journal, and I would like to use this opportunity to acknowledge her enormous contribution. She has affected our operation at all levels, from making sure that accepted manuscripts are submitted properly to the editorial staff at ASME headquarters, to following up on subsequent progress of the papers, to helping Associate editors find and nag reviewers, to correcting the English

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Fluids Engineering Technical Committee's Report:

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Fluid Measurement & Instrumentation Technical Committee

by Judith A. Bamberger, FMITC Chair and Joel T. Park, FMITC Vice Chair

The Fluids Measurement and Instrumentation Technical Committee (FMITC) is the ASME Fluids Engineering Division committee devoted to measurement techniques and their application to fluid flows. The scope of the Committee's goals includes both industrial applications and experimental development. The activities of the Committee include development and organization of technical sessions at ASME conferences, the organization of workshops and tutorials as well as acting as a liaison between ASME and industry for fluid flow measurements. The Committee membership represents a broad spectrum of backgrounds including industry, government laboratories and academia. There are currently over 75 members. Due to the wide array of applications of fluid measurements the Committee must effectively collaborate with other technical committees within ASME in general and the Fluid Mechanics Division in particular. The types of measurements and instrumentation include those applicable to subsonic and supersonic flows, multiphase flows, flows pertaining to environmental concerns, large scale industrial flows, microscale fluidic systems, and many others. The Committee's goal is to be at the for front of new measurement techniques and to act to provide a means to bring new research and development advances to the professional community.

The FMITC meets twice per year, once at the ASME IMECE and once at the FED Summer Meeting. Non- members are encouraged to come to these meetings, which are announced in the program of the specific conference. We invite individuals interested in participating in the development of new technical sessions, workshops and tutorials to join our committee. In particular we encourage those in other divisions of ASME to attend to develop collaborative symposia or fora which extend the applications of fluid flows to other disciplines such as heat transfer, bioengineering, energy systems, etc. Examples of some of the recent symposia and fora sponsored or co-sponsored by this Committee include: noninvasive measurement techniques, measurements in environmental flows, MEMS for Fluid Measurements, chemical and biochemical sensing, global flow measurements, microfluidic flow systems, and others. The Committee encourages new members to join from all backgrounds and also encourages students and new engineers to attend meetings and become involved. If there are any questions please contact the Chair, Judith A. Bamberger at Judith.Bamberger@pnl.gov 509 375-3898, or the Vice-Chair, Joel T. Park at ParkJT@nswccd.navy.mil or Past Chair James A. Liburdy at liburdy@engr.orst.edu . Committee minutes are available on the web site: http://divisions.asme.org/fed/committees/fmitc.html . ■

Annual Report on the Status of *JFE*

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in some of the manuscripts, to making sure that arriving papers are immediately forwarded to Associate Editors, to assisting authors in numerous issues, etc.

Like any other year, we unfortunately have to say goodbye to some of the Associate Editors who have completed their tenure. I would like to express my gratitude for their effort and contribution to the Journal. Dr. William Copenhaver has been our expert in compressible flow, especially in flows within turbomachines; Dr. Thomas Gatski, who completed a four-year appointment, has handled a wide range of papers involving development and implementation of turbulence models in RANS simulations; Professor Michael Plesniak has provided expertise in turbulent shear flows, but has also been bombarded with papers involving sprays and droplet dynamics; Professor Volkan Ötügen has handled a wide variety of papers dealing with turbulent shear flows near and away from boundaries; and Professor Steven Ceccio has dealt with papers concerning cavitation, bubble dynamics, and from time to time also boundary layers. The voids created as such experts depart from the editorial board are not easy to fill.

A new group of Associate Editors has graciously agreed to join us, and I would like to introduce them. Three Associate Editors have joined us last November. Professor James Liburdy from Oregon State University is an accomplished experimentalist, and will provide expertise in development and applications of optical diagnostics techniques to analyze various single and multiphase, fundamental flow problems. He is also an active researcher in micro-fluidic systems and controls. Professor Theodore Heindel from Iowa State University is an experienced experimentalist in complex multiphase flows, and conducts research on implementation of non-invasive measurement techniques, such as MRI. Professor Subrata Roy from Kettering University is an expert in theoretical modeling of compressible flows, including plasma dynamics, and has been involved in development of numerical techniques. His industrial experience will also be beneficial.

Three additional Associate Editors have joined us this spring. Professor Phillip Ligrani from the University of Utah is an experimentalist with substantial experience in complex flows related to turbumachines, including convective heat transfer, transonic flows, flows within turbine passages, and associated issues in transitional flows. Professor Ali Beskok from Texas A & M University is an expert in numerical modeling, especially in the areas of micro- and nanoscale thermal fluidic transport, electrokinetic transport, and rarefied gas dynamics. His contribution is essential for handling the increasing number of papers dealing with micro-scale flow. Dr. Timothy O'Hern, from Sandia National Laboratory, is an accomplished experimentalist and has utilized a wide variety of diagnostics techniques to probe complex multi-phase flows, including industrial applications.

The transition of the *JFE* to a web-based system, along with all the other ASME journals, has been completed. Authors are now encouraged to submit their papers through the web, which enables them to monitor the progress of the review process. The Internet address for paper submission is http://journaltool.asme.org. The authors are also encouraged to examine the new editorial policy on numerical accuracy for JFE, available on the JFE web page: http://ww2.asme.org/techpubs/template.cfm?title=Journal%20of%20Fluids%20Engineering. Comments and suggestions are welcomed. ■

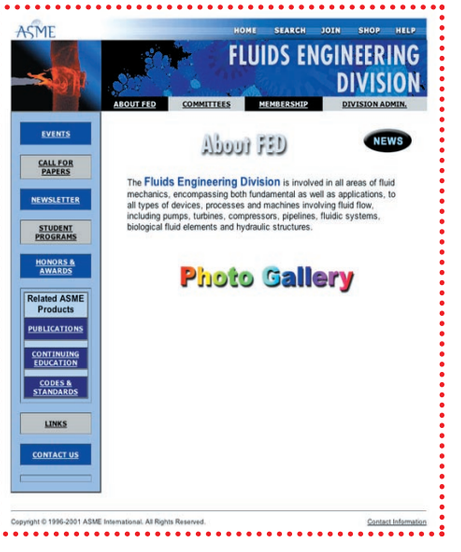
2005 ASME Fluids Engineering Division Summer Meeting
June 19 – 23, 2005 Houston, Texas

DAY	TIME	COMMITTEE	Location/Comm.
Sunday, June 19			
5 People	5:30- 6:30 PM	Executive Committee	
15 People	6:30 -8:30 PM	Executive Committee, TC/CG Chairs and Vice Chairs	
10 People	8:30-10:00 PM	Micro and Nano Fluid Dynamics Technical Committee	
15 People	8:30-10:00 PM	Fluid Measurements and Instrumentation Technical Committee	
Monday, June 20			
10 People	8:30-11:00 AM	Executive Committee/FED Staff/FED committee reports	
	10:00 AM-12:00 PM	JFE Editorial Board	
8 People	2:00-4:00 PM	Honors and Awards Committee	
	6:30-8:00 PM	FED Reception	
25 People	7:30-9:00 PM	Multiphase Flow Technical Committee	
15 People	7:30-9:00PM	Fluid Applications and Systems Technical Committee	
15 People	8:30-10:00 PM	CFD Technical Committee	
15 People	9:00-10:30 PM	Fluid Mechanics Technical Committee	
Tuesday, June 21			
15 People	8:00-10:30 AM	Executive Committee	
	1:00-2:30 PM	Awards Luncheon	
	3:00-4:00 PM	Young Engineerís Paper Committee	
Wednesday, June 22			
10 People	8:00-10:00 AM	Executive Committee/ASME Staff	
	2:00-3:00 PM	FED Advisory Board	
6 People	3:00-4:30 PM	Executive Committee-Calls Review	
	4:30-5:30 PM	Executive Committee/ Industrial Relations Committee Feedback	
	7:30-9:00 PM	Executive Committee, TC/CG Chairs and Vice Chairs	
Thursday June 23			
	8:30-10:00 AM	Breakfast-Meeting Wrap Up (if needed)	

Webmaster's Report

The FED homepage, with the URL http://www.asme.org/divisions/fed has become a focal point for communication with members of the division. It is a repository of current and historical information about division activities, such as conferences, honors and awards, technical committees, newsletters, etc. Topical issues of interest to members of the FED are discussed in various Technical Briefs. A new feature is the introduction of E-Newsletter which is a bi-monthly notice to Fluids Engineering Division members. It can be accessed by clicking on the "news" button in the FED homepage.

To the right is a screenshot of the homepage. The various navigation buttons lead to content which pertain solely to division affairs, as well as to the ASME at large. For further information or comments, please contact the webmaster: Deji Demuren, Tel: (757) 683-3727, Email: ademuren@odu.edu.



Technical & Administrative Committees

TECHNICAL COMMITTEES

Fluid Mechanics
Dr. George Papadopoulos (Chair)
Dantec Dynamics Inc.
T: 201-512-0037 Ext.121
george.papadopoulos@dantecdynamics.com

Brian E. Thompson, (Vice Chair)
Professor and NSERC-GM of Canada Chair of Engineering Design and Innovation
The University of Western Ontario
T: 519-850-2530 (Niloo)
thompson@eng.uwo.ca

Multiphase Flow
Prof. Gretar Tryggvason (Chair)
The University of Michigan
T: 734-763-1049
gretar@engin.umich.edu

S. Balachandar (Vice Chair)
University of Illinois
T: 217-244-4371
s-bala@uiuc.edu

Fluid Applications & Systems
Dr. Jinkook Lee (Chair)
Argo-Tech Corporation
T: 216-692-5084
leej@argo-tech.com

Micro and Nano Fluid Dynamics
Prof. Kenneth S. Breuer (Chair)
Brown University
T: 401-863-2870
kbreuer@brown.edu

Computational Fluid Dynamics
Prof. Peter E. Raad (Chair)
Southern Methodist University
T: 214-768-3043
praad@smu.edu

Ayodeji O. Demuren, Ph.D. (Vice Chair)
Old Dominion University
T: 757-683-6363
demuren@mem.odu.edu

Fluid Measurements and Instrumentation
Judith A. Bamberger, PE (Chair)
Battelle Pacific NW Natl Lab
T: 509-375-3898
Judith.Bamberger@pnl.gov

Joel T. Park (Vice Chair)
NSWCCD
parknj@nswccd.navy.mil

Prof. James Liburdy (Past Chair)
Oregon State University
T: 541-737-7017
liburdy@engr.orst.edu

ADMINISTRATIVE COMMITTEES

Honors & Awards
Mo Hosni, Ph.D.
Kansas State University
T: 785-532-2321
hosni@ksu.edu

Membership
Richard R. Schultz
Idaho National Engrg Lab
T: 208-526-9508
srr@inel.gov

Newsletter Editor
James C. Meng, Ph.D.
NAVSEA Warfare Centers Business & Technical Assignment Executive
T: 202-781-3403
mengjc@kpt.nuwc.navy.mil

Professional Development
Philip A. Pfund, Ph.D.
Fermilab
T: 630-840-4784
pfund@cannet.com

Technical Editor of the *Journal of Fluids Engineering*
Joseph Katz, Ph.D.
Johns Hopkins Univ
T: 410-516-5470
katz@titan.me.jhu.edu

Webmaster
Ayodeji O. Demuren, Ph.D.
Old Dominion University
T: 757-683-6363
demuren@mem.odu.edu

Advisory Board Chair
Dr. Christopher J. Freitas, P.E.
Program Manager
Southwest Research Institute
T: 210-522-2137

ASME Staff
Richard Ulvila
Manager, Engineering Programs
ASME
Three Park Avenue, MS22W3
New York, NY 10016
T: 212-591-7863
F: 212-591-7671
ulvilar@asme.org

Jacinta McComie-Cates
ASME
T: 212-591-7052
mccomiej@asme.org

FLUIDS ENGINEERING AWARD COMMITTEE

Chair
M. H. Hosni, Ph.D.
Kansas State University
T: 785-532-2321
hosni@ksu.edu

Volkan Otugen
Polytechnic University
T: 718-260-3217
votugen@poly.edu

FREEMAN SCHOLAR STANDING COMMITTEE

Chair
Dr. Christopher J. Freitas, P.E.
Program Manager
Southwest Research Institute
T: 210-522-2137

Senior Member
Mike Billet
The Pennsylvania State University
mlb7@psu.edu

Junior Member
David Stock
School of Mechanical and Materials Engineering
T: 509-335-3223
stock@wsu.edu

COMMUNICATIONS COMMITTEE

Dr. George Papadopoulos
Dantec Dynamics Inc.
T: 201-512-0037 Ext.121
george.papadopoulos@dantecdynamics.com

PROFESSIONAL DEVELOPMENT COMMITTEE

Philip A. Pfund, Chairman
Fermilab
T: 630-840-4784
pfund@cannet.com

PUBLICATIONS COMMITTEE

Joseph Katz
Journal of Fluids Engineering
The Johns Hopkins University
katz@titan.me.jhu.edu

INDUSTRY RELATIONS COMMITTEE

David Halt, Chair
Visteon Climate Control Systems
T: 734-451-9181
dhalt@visteon.com

GOVERNMENT RELATIONS COMMITTEE

Richard S. Meyer, Ph.D., Chair
The Pennsylvania State University
T: 814-865-1741
richardmeyer@psu.edu

Fluids Engineering

The Fluids Engineering Division is involved in all areas of fluid mechanics, encompassing both fundamental as well as applications

Three Park Avenue, New York, NY 10016-5990

www.asme.org/divisions/fed