ASME
SETTING THE STANDARD

Fluids Engineering

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

Spring 2010 Newsletter
James C. Meng *Editor*

Chair's Message

by Joel T. Park, Ph.D.

Dear FED Members,

Welcome to our Spring 2010 Newsletter. This newsletter provides a broad spectrum of activities of the ASME Fluids Engineering Division (FED). Some highlights are provided here with additional details by other FED volunteers. The primary activities of the Division are its participation in the International Mechanical Engineering Congress and Exposition (IMECE) and the Fluids Engineering Summer Meeting (FEDSM). FEDSM is currently on a four year cycle as follows: year 1 solely sponsored by FED, year 2 co-sponsored with the European societies, year 3 co-sponsored with Japan (JSME), and year 4 co-sponsored with the ASME Heat Transfer Division. Sponsored only by FED, FEDSM2009 was held in Vail, Colorado, on August 2–6, 2009. The conference had 360 registrants from 31 foreign countries. This conference continues with its tradition of high foreign participation in our meetings. The next conference is in Montreal on August 1–5, 2010. Prof. Mo Hosni is the Conference Chair, and Dr. Dave Halt is the Technical Program Chair. Currently, about 1,086 abstracts have been accepted for this conference. This conference is co-sponsored by the European mechanical engineering societies. In addition, the International Conference on Nano-, Micro- and Mini-Channels chaired by Prof. Satish Kandlikar of Rochester Institute of Technology and the International Conference on Fluid Structure Interactions chaired by Prof. Michael Paidoussis of McGill University in Canada are participating in this conference. In 2011, the conference will be hosted by JSME in Hamamatsu, Japan, in July 24–29, 2011. Korea (KSME) is also a co-sponsor of this conference. Dr. Dave Halt is our Conference Co-Chair. In addition to being FEDSM2011, the abbreviated conference name is AJK2011. This will be the 6th joint conference with JSME. To complete our conference cycle, Dr. Jinkook Lee will be the Conference Chair for FEDSM2012 with Dr. Roy Hogan of the Heat Transfer Division as the Co-Chair. The date and location of the 2012 conference are yet to be selected.

FED continues to maintain a significant presence at IMECE. Our last meeting was in Lake Buena Vista, Florida, at Disney World on November 13–19, 2009. Prof. Mo Hosni was our representative to IMECE2009 as the Organizer of Track 10, Heat Transfer, Fluid Flows, and Thermal Systems. Track 10 contained 12 topics sponsored by FED including a panel session and the Young Engineers Paper Contest. The next IMECE will be in Vancouver on November 12–18, 2010. Dr. David Halt of FED will be the Track 10 Organizer.

FED participated in the Leadership Training Conference 2010 (LTC10) and the Congress of Divisions (COD) in Dallas on March 11–14, 2010. The Division was represented by Prof. Mo Hosni, Dr. Dave Halt, and Dr. Jinkook Lee, members of the Executive Committee.

This year, FED is experiencing a major turnover in our volunteer leaders. The success of the FED is highly dependent on its

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Chair's Message (continued from page 1)

volunteer organizers, who are highly dedicated. Our volunteers include the many organizers for our symposia, fora, and panel sessions at our conferences. For example, a total of about 70 organizers were responsible for the Vail conference.

At the conclusion of our summer meeting in Montreal, the tenure of the chairs of our technical committees (TC) will conclude, and new chairs will be elected in Montreal. The Division has 6 technical committees (TC) as follows: Computational Fluid Dynamics chaired by Dr. Richard Johnson, Fluid Applications and Systems chaired by Prof. S. A. Serif, Fluid Measurements and Instrumentation chaired by Prof. Ted Heindel, Fluid Mechanics chaired by Prof. Francine Battaglia, Multiphase Flow Chaired by Dr. Malcolm Andrews, and Micro and Nano Fluid Dynamics chaired by Prof. Kendra Sharp. Dr. William B. Morgan, FED Chair 1981–82, has written a special article for this issue on the history of FED and its technical committees. Prof. Jim Liburdy and the TC chairs are in the process of updating the committee bylaws and operating instructions. The FED bylaws and operating instructions were last revised in April 1994.

Dr. Malcolm Andrews of Los Alamos National Laboratory is to be congratulated on his selection as our new editor for the ASME *Journal of Fluids Engineering* (JFE). Special thanks go to Prof. Joe Katz of Johns Hopkins University as the retiring editor. Joe has been JFE editor for 10 years beginning in 2001. Under his leadership, JFE has become one of the top 2 ASME journals in revenue. JFE has expanded to a monthly journal. As with our summer conference, foreign authors account for a significant number of articles in JFE.

FED is now receiving some of funds from JFE. Consequently, our Custodial Fund has grown. Some of those funds are now being directed to an improved plenary speaker program for our summer meeting. Dr. George Papadopoulos, FED Chair 2007–08, as the Senior Member of the Executive Committee was responsible for the development of the new plenary speaker initiative, which was first implemented for our meeting in Vail last summer.

Dr. Adiel Guinzburg is finishing her tenure as chair of the Honors and Awards Committee. Under her leadership, this committee has produced many outstanding awards for the Moody and Knapp paper awards and our premier Fluids Engineering Award. These awards are annual and are presented at our summer conference. Two bi-annual awards are also managed by this committee: Gopal-Flowserve Pump Technology Award in odd numbered years and Fluids Machinery Design Award in even numbered years. Adiel has been serving on this committee since 2004. A new chair and 3 new committee members will be announced in the near future.

The Freeman Scholar Award is another ASME level award given in even numbered years. The Freeman Scholar Committee is a standing committee for this award. Prof. Stathis Michaelides, FED Chair 2004–06, is the chair. The other 2 committee members are Dr. Tim O'Hern, FED Chair 2001–02, and Prof. Dave Stock, FED Chair 2000–01.

Dr. James C. Meng deserves special mention as the editor of this newsletter. He has been serving as editor since 2002 when Dr. Tim O'Hern was FED Chair, and this is his 10th newsletter. His dedication, persistence, and organization of a high quality newsletter is much appreciated. We are seeking a volunteer as the new editor and will be announcing a new editor in Montreal.

Finally, the success of FED is dependent on a highly dedicated staff at ASME Headquarters. Leading the list is Erin Dolan, our FEDSM Conference Manager for 2007, 2009, and 2010. Other staff members are Jacinta McComie-Cates, Administrator, Lee Hawkins, Senior Program Manager, Gloribeth Carrero, Visa Invitation Letters, and Stacey Cooper, Nhora Cortes-Comerer, and Angeline Mendez, Publications.

All members including student members are encouraged to become in FED activities. Success in our Division operations is highly dependent on dedicated volunteers at all levels. More information on our Division and past Newsletters are located on the following ASME web page: http://divisions.asme.org/FED/ ■

Joel T. Park, Ph.D.
Executive Committee Chair
Fluids Engineering Division

Basic Engineering Technical Group

by Professor Jim Liburdy

The organizational structure within ASME has been going through some changes over the last several years. In this process there has been a push to provide convenient and helpful mechanisms and opportunities within the Basic Engineering Technical Group (BETG) of ASME. What does this mean for the Fluids Engineering Division? The BETG consists of six technical divisions (fluids, heat transfer, materials, tribology, bioengineering, and applied mechanics) and as you can imagine there is significant overlap in basic areas of interest and their applications. Consequently, the BETG has organized a Operating Board (BETGOB) with the goal of providing an avenue of continued contact among divisions to help address a number of common issues and to move forward with new ideas and actions that are multidisciplinary in nature. The FED representatives to BEGOB are James Liburdy and David Halt. The organization of BETGOB also includes representatives from ASME dealing with honors and awards, publications, strategic planning, and conferences, and is lead by the Technical Group Leader Russel Skocypec.

Several outcomes have occurred through this organizational effort that directly impact FED and its members. For instance, recently the International Conference on Nanochannels, Microchannels and Minichannels has been reorganized under the sponsorship of Heat Transfer and Fluids Engineering divisions. This conference will be co-located with the FEDSM in 2010 in Montreal and is planning to be held in Edmonton, Canada in 2011. Also, the FED is now a sponsoring division, along with Bioengineering, Materials and Heat Transfer, of a new journal entitled Journal of Nanotechnology in Engineering and Medicine. Other recent outcomes include helping to promote the use of an electronic web based copyright form to provide a more convenient method for publication submissison to conferences. The By-Laws for the divisions are being updated to reflect the continued development of new efforts and new initiatives. Within FED this also means that the technical committees are also rewriting their bylaws to provide clear and efficient operations in the organization of conferences and developing new technical programs. We welcome any and all comments concerning our activities as well as encourage participation in future conferences, and also invite all to become involved in the Technical Committees of FED. ■

FEDSM2009 Post Conference Report

by Joel T. Park, Ph.D., Conference Chair

FEDSM2009 was held in Vail, Colorado, at the Vail Cascade Resort and Spa on August 2–6, 2009. Many of the attendees were delighted with the location. As usual, the conference had a large number of attendees. The conference had 360 registrants from 31 foreign countries. The number of foreign registrants was 183 or 51 %. Some of the countries represented included Japan (28 attendees), France (22), China (21), Korea (17), Canada (15), Germany (12). United Kingdom (7), and Spain (7). In spite of significant visa obstacles, Iran had 4 attendees. The conference had the largest number (8) of former FED Chairs in memory. The former Chairs included George Papadopoulos 2007–2008, Urmila Ghia 2006–07, Stathis Michaelides 2005–06, Ali Ogut 2003–04, Kumar Rohatgi 2002–03, Tim O'Hern 2001–02, Clayton Crowe 1990–91, and Paul Cooper 1985–86.

Originally, about 500 abstracts were submitted to the conference. The final number of submitted papers was 322. Initially, some concern existed about the financial success due to the bad economy. ASME requires that the conference be self-supporting. A 15 % contingency was included in the initial budget as required by ASME policy. The final conference surplus was 20 %. The following is the summary of the final budget:

Paid Registrants:	$182,630	
Total Revenue:	**$183,826**	
Direct Conference Expenses:	$103,024	
ASME Support Services:	$43,846	
Total Conference Expenses:	**$146,870**	
Conference Surplus:	**$36,956**	**(20%)**

Erin Dolan, Conference Manager, is to be commended for the financial success of this conference. She was also able to accommodate many last minute requests that did not adversely impact the budget.

Dr. Papadopoulos's plenary speech initiative was implemented for the first time at this meeting. One speaker was sponsored by each of the 6 technical committees. The following is a list of the speakers by TC:

Computational Fluid Dynamics (CFDTC)
William L. Oberkampf, Sandia National Laboratories
"Verification, Validation, and Uncertainty Qualification for Engineering Applications"

Fluid Applications and Systems (FASTC)
Phillipe R. Spalart, The Boeing Company
"Reflections on RANS Modeling"

Fluid Measurements and Instrumentation (FMITC)
Darius Modarress, Measurement Science Enterprise, Inc.
"Mini and Micro Optical Flow Sensors"

Fluid Mechanics (FMTC)
Morteza (Mory) Gharib, California Institute of Technoloby
"Lessons for Bio-Inspired Design: Fluid Dynamics of Embryonic Heart"

Micro and Nano Fluid Dynamics (MNFDTC)
Robert H. Davis, University of Colorado, Boulder
"Simulations of Flows Containing Deformable Drops in Porous Media and Microfluidic Devices"

Multiphase Flow (MFTC)
Clayton T. Crowe, Washington State University
"Carrier-Phase Turbulence in Fluid-Particle Flows" Prof. Crowe's full paper is published in the proceedings.

Additionally, two more plenary speakers were award winners:

Fluids Engineering Award
Ronald J. Adrian, Arizona State University
"The Eddies and Scales of Wall Turbulence"

2008 Freeman Scholar Lecture
Joseph C. Klewicki, University of New Hampshire
"Reynolds Number Dependence, Scaling and Dynamics of Turbulent Boundary Layers"

In 2008, FED had 2 award winners for the Freeman Scholar Lecture. William George presented his lecture at FEDSM2008 in Jacksonville, Florida. Their lectures will be published in JFE. In addition to the Plenary Speakers, the conference had 19 Keynote Presentations.

As stated previously, the conference had 322 published papers, while the total number of presentations was about 400. The technical program included at total of 25 symposia and fora. Approximately 70 individuals were responsible for organization of the technical program. The conference was organized into 11 segments with 8 parallel paper sessions each for a total of 86 paper sessions over a 4-day period. The Sixth International Symposium on Pumping Machinery organized by Bruno Schiavello and Paul Cooper was the most impressive in its size. This symposium had a total of 14 sessions. A total of 52 final papers were submitted or 16 % of the conference total.

For this conference, an awards banquet was held on Wednesday evening rather than our traditional luncheon. Prof. Jim Liburdy, Chair of FED, was the master of ceremonies for the event. Dr. Yu-Tai Lee of the Honors and Awards Committee presented the awards in the absence of the Chair, Dr. Adiel Guinzberg. The following awards were presented:

2009 Lewis F. Moody Award
Srinidhi V. Murali, Xinggao Xia, Ashish V. Jagtiani, Joan E. Carletta, and Jiang Zhe
IMECE2008-66768: A Microfluidic Device for Wear Detection in Lubricants

2009 Sankaraiyer Gopalakrishnan-Flowserve Pump Technology Award
Edward M. Bennett
Mechanical Solutions, Inc.

***Journal of Fluids Engineering* Associate Editors by Yu-Tai Lee for Joe Katz**
Ye Zhou, Denis Siginer, Malcolm Andrews, Juergen Kompenhans, and Hamid Johari
(Only Dr. Andrews was present to receive his award certificate)

The following awards were presented by Dr. Jim Liburdy, FED Chair

2009 ASME Fellow Awards (These were previously presented and only acknowledged)
Bogdan V. Antohe, Conrad J. Bazylewshadecki, Sheldon I. Green, Mahadevan Padmanabhan, Siamack A. Shirazi, Timothy Wei, and Chao Zhu

Past FED Chair: Dr. George Papadopoulos 2007–08

Conference Chair: Dr. Joel T. Park

Technical Program Chair: Prof. Mo Hosni

The Fluids Engineering Award to Prof. Ron Adrian and the

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FEDSM2009 Post Conference Report (continued from page 3)

Photographs from FEDSM2009 at Vail, Colorado: PlenarySpeakers

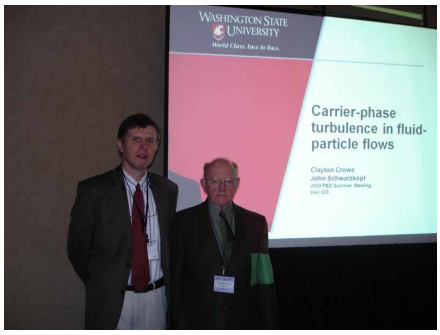
Robert H. Davis (University of Colorado)

Charlie Zheng, William L. Oberkampf (Sandia National Lab.), and Rich Johnson

Phillippe R. Spalart (Boeing), S. A. Sherif, and Keith Walters

Francine Battaglia, Mory Gharib (Cal Tech), and Javid Bayandor

Pavlos Vlachos, Darius Modarress (Measurement Science), and Ted Heindel

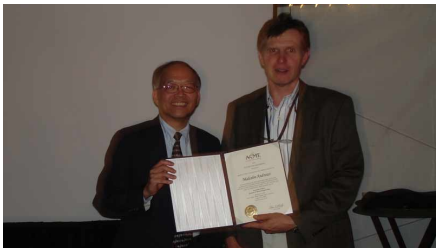


Malcolm Andrews and Clay Crowe (Washington State University)

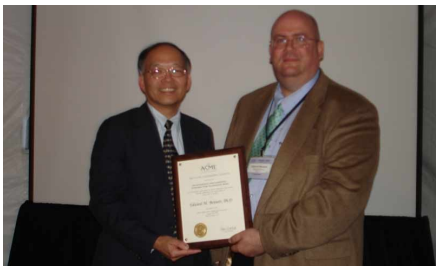
Stathis Michaelides, Joe Klewicki (Freeman Scholar from U. of New Hampshire) and Tim O'Hern

Judith Bamberger, Ron Adrian (Fluids Engineering Award from Arizona State), and Yu-Tai Lee

Honors and Awards



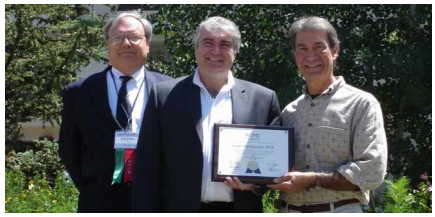
Yu-Tai Lee and Malcolm Andrews (JFE Associate Editor from Los Alamos)



Yu-Tai Lee and Edward M. Bennett (Gopalakrishnan-Flowserve Pump Technology Award)

Lewis F. Moody Award: Ashish V. Jagtiani and Srinidhi V. Murali from U. of Akron

Joel Park and Leighton S. Cochran (Banquet Keynote Speaker from Cermak, Peterka Peterson, Inc.)



Joel Park, George Papadopoulos (FED Chair 2007-08 Award) from Jim Liburdy, FED Chair 2008-09.

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FEDSM2009 Post Conference Report (continued from page 4)

Freeman Scholar Lecture Award to Prof. Joe Klewicki were acknowledged at the banquet, but the awards were given at their Plenary Lectures since they were unable to attend the banquet. The Keynote Address for the banquet was given by Dr. Leighton S. Cochran of Cermak Peterka Peterson, Inc. The title of his address was "Architectural Aerodynamics: Wind Engineering and Tapering, Tilting, Twisting Towers." Special thanks go to the ASME Colorado and Centennial Sections for their support of this conference. Prof. Fred Smith of the Centennial Section and Colorado State University was instrumental in the selection of Dr. Cochran as our banquet speaker. Annette Lynch represented the Centennial Section at the banquet and introduced Dr. Cochran. Jeet Hunjan attended the banquet as the representative of the ASME Colorado Section. ■

Conference Attendees

Chao Liu and Li Cheng from Yangzhou University in China

Mrs. Watmuff, Jon Watmuff (RMIT U., Melbourne, Australia), and John Foss (Michigan State)

Javid Bayandor and Francine Battaglia of Virginia Tech, and Dave Halt

S. A. Sherif (U. of Florida), Mick Brzoska (Eastern Washington U.), and Mike Reeks (U. of Newcastle, UK)

Jon Watmuff and wife, Mike Plesniak (George Washington U.), and Francine Battaglia (Virginia Tech)

Goodarz Ahmadi (Clarkson U.), Mazyar Salmanzadeh (Kerman, Iran), unidentified, Darius Modarress, Zohreh Mansoori (Amirkabir U. of Technology, Tehran, Iran), Joel Park, Reza Sadr (Texas A&M U. at Qatar), and Behtash Tavakoli (Clarkson U.)

Erin Dolan (ASME Conference Manager) and Joel Park (Conference Chair)

2008-09 Executive Committee: Joel Park, Dave Halt, Jim Liburdy, George Papadopoulos, and Mo Hosni

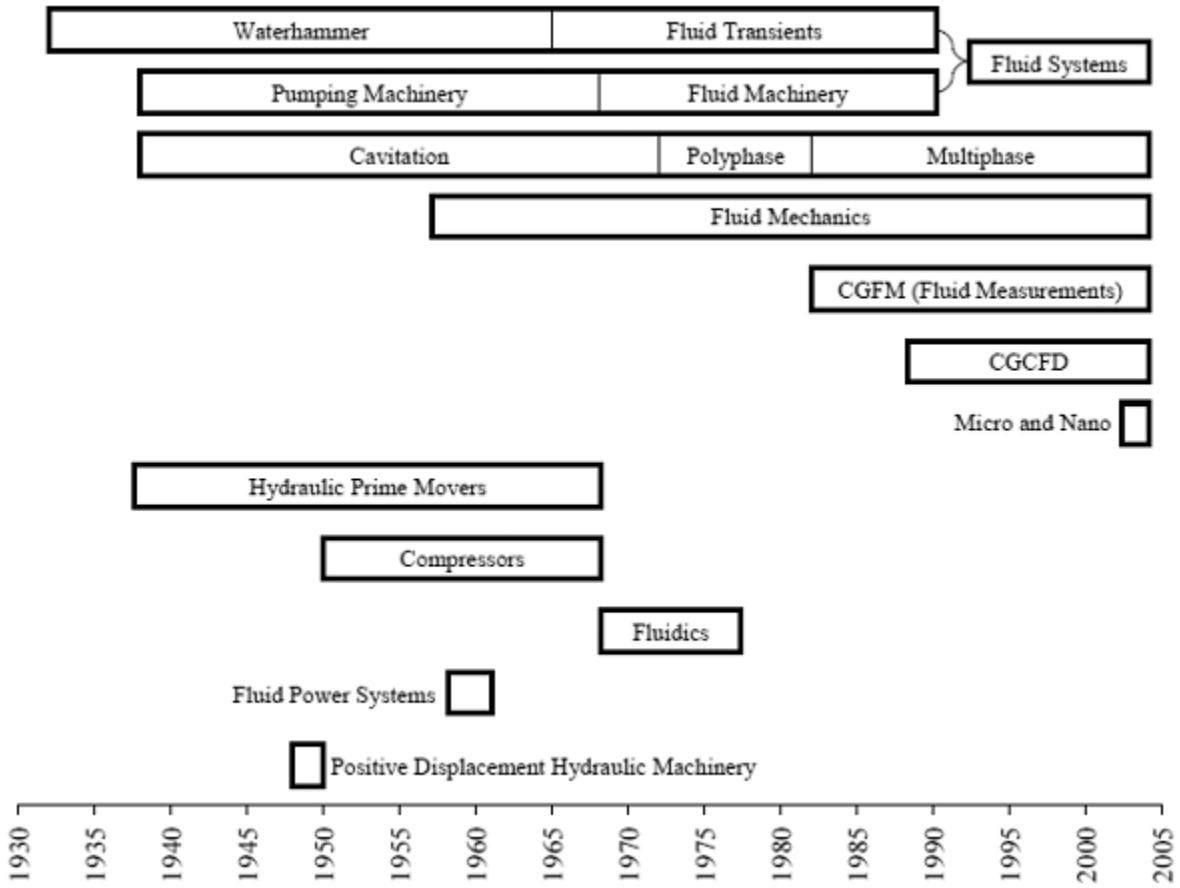
2009-10 Executive Committee: Mo Hosni, Jinkook Lee, Dave Halt, Joel Park, and Jim Liburdy

Brief History of ASME's Hydraulic/Fluids Engineering Division

William B. Morgan, Dr. Eng.,
FED Chair 1981 – 82
Retired, U. S. Navy David Taylor Model Basin

The Fluids Engineering Division originated as the Hydraulic Division in 1926 with Ely Hutchinson as chair. The origin of the establishment of the Hydraulic Division seems to be lost in antiquity. Apparently, the Hydraulic Division came out of the Power Division, which was one of 12 divisions established in 1920. The Hydraulic Division originally consisted of members interested in traditional hydraulics; specifically the subjects of flow measurements, losses in ducts, water hammer, and the design of hydraulic turbines and pumps. As the science of fluid flow progressed from ad hoc hydraulics to the theory of fluid dynamics, the need for a name change to express the changing science of fluid engineering become apparent. Although strongly opposed by the old hydraulic traditionalists, through the efforts of a number of individuals; including James Daily, Robert Dean, Howard Emmons, Stephen Kline, and George Wislicenus; a name change was authorized by the Board on Technology in September 1963. The name of the Division was changed to the Fluids Engineering Division sometime thereafter. Also, at that time, the need became apparent for a scientific journal of fluid engineering. As a result, the *Journal of Fluids Engineering* was first published in 1973 with Robert Dean as the first editor. The attached table lists the Division chairs over the years.

Committee structure for the Division started in 1931 with establishment of the Waterhammer Committee. This committee was following in 1937/38 by the Pumping Machinery, Cavitation and Hydraulic Prime Movers Committees. The first committees were called subcommittees and with no change in function, "sub" in the titles was dropped. The various committees with name changes are shown in the attached chart. The Fluidics Committee was joint with another Division that took over function of that committee in 1978. FED now has 6 Technical Committees



CGFM: Coordinating Group on Fluid Measurements, renamed Fluid Measurements and Instrumentation Technical Committee (FMITC) in 2002
CGCFD: Coordinating Group on Computational Fluid Dynamics, renamed CFD Technical Committee (CFDTC) in 2002

Chart of FED Committees History

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Brief History of ASME's Hydraulic/Fluids Engineering Division (continued from page 6)

as follows: Computational Fluid Dynamics (CFDTC), Fluid Applications and Systems (FASTC), Fluid Mechanics (FMTC), Multiphase Flow (MFTC), and Micro and Nano Fluid Dynamics (MNFDTC).

The Division has established a number of awards over the years. These are listed as follows with the year they were established.

1927 — Freeman Scholar Award
1965 – Robert T. Knapp Award
1965 – Lewis F. Moody Award
1968 – Fluids Engineering Award (This award was elevated to a Society Level Award in 1979)
1981 – Fluid Machinery Design Award
2006 – Sankaraiyer Gopalakrishnan—Flowserve Pump Technology Award ■

*Table of ASME Hydraulic/Fluids Engineering Division Executive Committee Chairs**

Year	Chair	Year	Chair	Year	Chair
1926–29	Ely C. Hutchinson	1960–61	Howard W. Emmons	1986–87	Charles Dalton
1929–30	L. F. Moody	1961–62	W. C. Osborne	1987–88	Walter Swift
1930–31	William M. White	1962–63	R. C. Dean, Jr.	1988–89	Blaine R. Parkin
1931–32	E. M. Breed	1963–64	A. M. G. Moody	1989–90	Thomas Morel
1932–33	Blake van Leer	1964–65	Robert S. Sproule	1990–91	Clayton Crowe
1933–34	D. J. McCormack	1965–66	Stephen J. Kline	1991–92	Warren Wade
1934–35	Paul Diserens	1966–67	W. G. Cornell	1992–93	Richard Bajura
1935–36	C. F. Merriam	1967–68	J. William Holl	1993–94	Donald R. Webb
1936–39	S. Logan Kerr	1968–69	Gino Sovran	1994–95	Michael L. Billet
1939–40	Forrest Nagler	1969–70	Warren G. Whippen	1995–96	Edwin P. Rood
1940–41	F. G. Switzer	1970–71	Glenn W. Wood	1996–97	Hugh W. Coleman
1941–44	E. B. Strowger	1971–72	Milton S. Plesset	1997–98	Thomas B. Morrow
1944–47	L. J. Hooper	1972–73	Jackson E. Fowler	1998–99	Christopher J. Freitas
1947–48	R. E. B. Sharp	1973–74	Forbes T. Brown	1999–00	Philip A. Pfund
1948–49	J. F. Roberts	1974–75	George Rudinger	2000–01	David E. Stock
1949–50	George R. Rich	1975–76	William E. Thompson	2001–02	Timothy J. O'Hern
1950–51	G. T. Abernathy	1976–77	Turgut Sarpkaya	2002–03	Upendra S. Rohatgi
1951–52	R. T. Knapp	1977–78	Kenneth E. Hickman	2003–04	Ali Ogut
1952–53	H. S. Van Patter	1978–79	Jules Dussourd	2004–05	S. Gopalakrishnan**
1953–54	R. G. Folsom	1979–80	Allan Acosta	2005–06	Stathis Michaelides
1954–55	R. S. Quick	1980–81	C. Samuel Martin	2006–07	Urmila Ghia
1955–56	J. W. Daily	1981–82	William B. Morgan	2007–08	George Papadopoulos
1956–57	H. L. Ross	1982–83	Peter W. Runstadler	2008–09	James A. Liburdy
1957–58	G. F. Wislicenus	1983–84	Robert Hickling	2009–10	Joel T. Park
1958–59	G. D. Johnson	1984–85	Christopher Brennen		
1959–60	John Parmakian	1985–86	Paul Cooper		

*Renamed Fluids Engineering Division 1964
**Sankaraiyer Gopalakrishnan became ill and died in September 5, 2005. His term was completed by Stathis Michaelides beginning March 2005.

From the Technical Editor

It is my pleasure, and honor, to take over the position of Technical Editor from Professor Joe Katz for the ASME Journal of Fluids Engineering (JFE), the flagship of the Fluids Engineering Division. For the past ten years Joe has faithfully steered the JFE through various turbulent times, and difficult changes. Perhaps the biggest single change occurred about 7 years ago when the "Journal Web Tool" (JWT) was introduced, an efficiency we Associate Editors had an opinion about! However, persistence and patience has allowed the JWT to evolve into what is now a useful device for handling journal papers. Furthermore, the JFE has evolved under Joe's watch from a quarterly journal with 800 pages per year, to a monthly with 1500 pages a year, a testament to the broad appeal of the journal and Joe's energy and guidance. Those of you who have submitted papers to the journal will know that the foundation for the operating success of the journal lies with its Editors Assistant Mrs. Laurel Murphy, and my thanks go to her for all the help I received as an Associate Editor (AE) for six years, and all the help given to the other AE's and authors. Finally, I pass on my thanks to all the work done by the past and present AE's without whom the journal could not operate.

Looking to the future, I am pleased to report that Laurel agreed to work with me over the first three months of 2010 while we transition, and I am equally pleased to announce that we have identified a replacement for Laurel, namely Mrs. Amber Grady-Fuller. Like Laurel, Amber has extensive experience as an Editors Assistant, and will become fully installed around the end of March 2010. As the new editor I don't plan any immediate changes to the journal, but in the short term I do plan to provide more help to authors and AE's, so that we might continue to shorten the turn-around time from submission to acceptance and publication, and continue to increase the reputation and standing of the journal. I will take this opportunity to encourage potential authors to visit the journal web page at http://journaltool.asme.org/Content/JournalDescriptions.cfm?journalId=9&Journal=FE, and to recognize that the journal seeks to publish high quality archival experimental, analytical, or numerical results in the field of Fluids Engineering. Moreover, we seek to serve not just the Fluids Engineering Division of the ASME but all ASME members, and the international community of fluid dynamics R&D. The JFE receives around 400 submissions per year, and publishes around 30% of those through a peer review process. As one of the top three ASME Journals, the JFE has an international recognition and reputation as one of the premier journals for dissemination of technical information in fluid mechanics of interest to researchers and designers in mechanical engineering throughout the world. I look forward to continuing Professor Joe Katz's legacy by keeping the journal vibrant and responsive to new fluids R&D.

I wish you an exciting and enjoyable 2010, and please feel free to stop and visit with me at the FEDSM2010 in Montreal or the IMECE2010 in Vancouver. ■

Dr. Malcolm J. Andrews, malcolmjandrews@gmail.com
Technical Editor, ASME Journal of Fluids Engineering

2010 Leadership Training Conference (LTC)

by Jinkook Lee, Ph. D.
Member, Executive Committee
March 22, 2010

The 2010 ASME sponsored Leadership Training Conference (LTC) was held at the Hyatt Regency DFW Airport hotel at Dallas, Texas from March 11 through March 14, 2010. Three Executive Committee (EC) members of the Fluids Engineering Division (FED) participated in this LTC as delegates from FED: David Halt (Secretary of EC) and Jinkook Lee (Member of EC) as new Leaders, and Mo Hosni (Incoming Chair of EC) as an experienced Leader.

This training event was designed to provide a unique opportunity for the ASME leadership and staff to meet face-to-face and chart a course for the future with vision and purpose. Additional conference objectives for both new and experienced ASME leaders were better management of the activities of the Society and more effective leadership in their workforce.

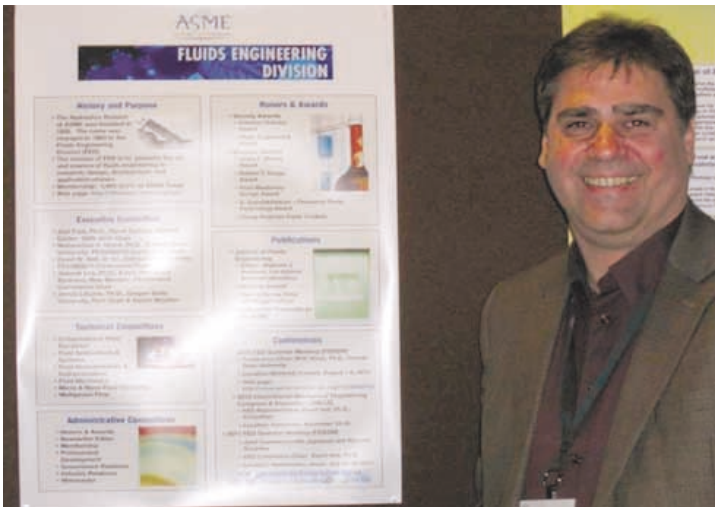
The LTC offered for the attendees, Section Leaders as well as Technical Division Leaders, the opportunity to witness ASME in action, to have dialog with its leadership including ASME President, Dr. Amos Holt and President-Elect, Dr. Robert Simmons, to access its resources, to learn interactively, and to network.

For new ASME leaders, ASME 101 course was offered with following subjects;

1. Principles of Unit Leadership
2. Operations 1 – "Nuts and Bolts"
3. Tool and Fundamentals – Part 1 (Ethics for Professionals' Leadership, Diversity, Communications, ASME Resources, Leadership Development, Finance for Divisions, Institutes, Sections and Affinity Groups)
4. Operations 2 – "How TO'S" – Applications and Scenarios, Solutions to Real Unit Issues.

For experienced ASME Leaders, Advanced Leadership Forum offered below subjects,

1. Introduction to Strategic Planning
2. Retooling (Project and Resource Management, Advanced Communications)
3. Case Studies: Looking for the Solutions to Real Unit Issues.



FED Poster for 2010 LTC and Dr. David Halt, Secretary of the Executive Committee

Author, Dr. Jinkook Lee (center), with ASME President Dr. Amos Holt with glasses and black hat (right-side of the author) and Executive Director, Dr. Thomas Loughlin

2010 LTC Participants Group photo

Throughout the Leadership Training, one of hot topics discussed as a real issue was "How to prevent authors from NO SHOW during ASME Conferences". The clear and wise solutions are still needed to be answered.

In parallel to the classroom lectures and discussions, poster sessions were held in the main hall ways. Each different division including young engineers and young woman engineers displayed their posters which demonstrated their technical activities. Our Fluids Engineering Division poster was prepared by David Halt, which is displayed next to him in the top photo. Author's photo above with ASME President Dr. Amos Holt and Executive Director, Dr. Thomas Loughlin. The 2010 LTC participant group photo is also shown at left. Additional information on LTC10 as well as previous conferences may be found on the conference web page: http://www.asmeconferences.org/ltc10/. ■

FED Committee Reports

Computational Fluid Dynamics Technical Committee

Prof. Z C Zheng

The Computational Fluid Dynamics Technical Committee (CFDTC) serves as a focal point for technical activities in the areas of computational methods (finite-difference, finite-volume, finite-element) for solving various approximate governing equations of fluid flow, novel algorithms for solving flow problems on advanced computer architectures (massively parallel and cluster of workstations), benchmarking of public domain and commercially available software, numerical simulation of flow problems in industry, and application of CFD techniques to other related disciplines, for example, multiphase flows, hydrodynamics, acoustics, etc.

At the coming 2010 FED Summer Meeting (3rd Joint US-European Fluids Summer Meeting), in addition to the continuing symposia organized by the CFDTC, there will be a new symposium, "Development and Applications of Immersed Boundary Methods," organized by both US and European organizers: Z. Charlie Zheng, Jianming Yang, Wim-Paul Breugem, and Yassin Hassan.

In recent two decades, there has seen a tremendous rise in the popularity of immersed boundary (IB) methods. IB methods for fluid-structure interaction problems typically discretize the equations of motion for the fluid on a Cartesian grid, and such methods generally do not require that the geometry of the structure conform in any way to this Cartesian grid. Instead, the equations of motion for the fluid are augmented by an appropriately defined forcing term that typically is nonzero only in the vicinity of the structure. Therefore, IB methods have provided powerful new tools for simulating fluid-structure interactions involving moving and/or morphing bodies.

We have invited two world-renown experts in this area as the keynote speakers for the symposium: Prof. Rajat Mittal from Johns Hopkins University, and Prof. Elias Balaras from University of Maryland. Prof. Mittal's speech is "A Versatile Sharp-Interface Immersed Boundary Method for Flow and Sound Computation with Application to Biological Flows." Prof. Balaras' speech is "Advancements in Adaptive Mesh Refinement for Immersed-Boundary Methods."

We warmly welcome you to join us in Montreal!

Fluid Applications and Systems Technical Committee

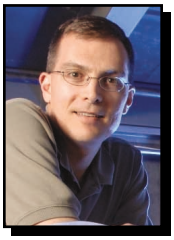
Prof S.A. Sherif

The mission of the Fluid Applications and Systems Technical Committee (FASTC) is to promote the advancement and dissemination of fluids engineering research and technology in several wide-ranging single- and multidisciplinary topical areas. These include such traditional disciplines as fluid power systems, turbomachinery, automotive flows, and industrial fluid mechanics, and can include less traditional topics such as environmental engineering, chemical processing, or fluid vibrations and acoustics. The primary function of the Committee is to coordinate and organize research symposia at two major venues for fluids engineering—the annual ASME Fluids Engineering Division Summer Meeting (FEDSM) and the ASME International Mechanical Engineering Congress and Exposition (IMECE)—as well as other FED-sponsored meetings and events. Researchers and engineers from academia, industry and government are encouraged to meet and exchange information on these and other topics through their participation in FASTC.

We will sponsor two recurring symposia at the 3rd Joint US-European Fluids Engineering Summer Meeting in Montreal, August 1–4, 2010. These include the 22nd Symposium on Fluid Machinery and the 17th Symposium on Industrial and Environmental Applications in Fluid Mechanics. In addition, FASTC will co-sponsor the Symposium on Issues and Perspectives in Ground Vehicle Flows along with our European colleagues. For the 2010 IMECE meeting in Vancouver, November 12–18, FASTC will sponsor the 19th Symposium on Industrial Flows and once again co-sponsor the Symposium on Turbomachinery Noise with the Aero/Hydro Acoustics Committee of the Noise Control and Acoustics Division (NCAD). In addition, we are excited to introduce a new event, the Symposium on Fluid Applications in Clean Energy Systems, focused on "green" fluid mechanics applications such as wind turbines, tidal turbines, solar power systems, and combined heat and power (CHP) systems. Also new this year at IMECE, FASTC members will be contributing to the organization of the Numerical and Experimental Heat Transfer Topic in Track 10—Fluid Flow, Heat Transfer, and Thermal Systems.

We were pleased to have new members attend the FASTC meetings at FEDSM and IMECE in 2009. We continue to encourage all interested individuals from academia and industry to participate in the FASTC activities, and especially to attend our symposia and technical committee meetings. If you are interested in volunteering with the committee, or if you have any questions or concerns, please don't hesitate to contact the Chair, S.A. Sherif at the University of Florida (sasherif@ufl.edu) or the Vice Chair, Keith Walters at Mississippi State University (walters@me.msstate.edu).

Fluid Measurement and Instrumentation Technical Committee



Ted Heindel, FMITC Chair, and Pavlos Vlachos, 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 include both experimental technique development and application in academia and industry. The primary activity of the

(continued on page 10)

FED Committee Reports: (continued from page 9)

FMITC includes development and organization of technical sessions at the Fluids Engineering Division summer meetings and the fall IMECE meetings. Since fluid measurements are common to all experimentalist, the FMITC also collaborates with other FED technical committees in co-sponsoring technical sessions. The committee's membership represents a broad spectrum of backgrounds, including industry, government laboratories, and academia. The types of measurements and instrumentation include those applicable to subsonic and supersonic flows, multiphase flows, large-scale flows, microfluidic flows, and many others. The FMITC goal is to be at the forefront of new measurement techniques and to provide a forum to exchange measurement and instrumentation ideas, developments, and applications.

The FMITC meets at the ASME FED Summer Meeting and at the ASME IMECE meeting. Non-members from students to seasoned professionals are encouraged to attend these meetings, which are announced in the respective conference program. We are continually looking for new members to assist in, as well as develop new, technical sessions addressing measurement and instrumentation issues. We also encourage those from other ASME divisions and technical committees to attend to develop collaborative technical sessions which extend the applications of fluid flow measurement and instrumentation to other disciplines, such as heat transfer, bioengineering, energy systems, etc. Examples of recent technical sessions sponsored or co-sponsored by the FMITC include: Forum on Fluid Measurement Validation and Verification, Panel on CFD/EFD Choice – A Dilemma for Industries, Symposium on Non-Invasive Measurements in Single and Multiphase Flow, Forum on Fluid Measurements and Instrumentation, and Forum on Automotive Flows. We also hosted at FEDSM09 a very successful keynote address by Dr. Darius Modarress from Measurement Science Enterprise, Inc. entitled "Mini and Micro Optical Flow Sensors".

If you have any questions or suggestions for the FMITC, please contact the chair, Ted Heindel at theindel@iastate.edu, or the vice-chair, Pavlos Vlachos at pvlachos@vt.edu.

Fluid Mechanics Technical Committee (FMTC)

Francine Battaglia, Chair
Javid Bayandor, Vice-Chair

The Fluid Mechanics Technical Committee is dedicated to organizing and promoting technical activities within ASME related to fluid mechanics. Members of the FMTC volunteer their services to develop, organize and promote symposia and panel discussions on fundamental and contemporary topics relevant to the research community. These platforms are held twice per year at the Fluids Engineering Division (FED) Summer Meeting and the International Mechanical Engineering Congress & Exposition (IMECE).

Last summer, the FMTC hosted its first annual plenary speaker, the Hans W. Liepmann Professor of Aeronautics and Bioengineering, Prof. Mory Gharib of Caltech, who gave a talk entitled "Lessons for Bio-Inspired Design: Fluid Dynamics of Embryonic Heart". Prof. Gharib's cutting-edge research filled the seats as the audience learned about in vivo experiments of the embryonic zebrafish heart, where studies indicated that an elastic wave resonance mechanism is responsible for the heart pumping. Inspired by this design, Prof. Gharib's research group succeeded in constructing a series of mechanical counterparts to this biological pump on a range of size scale including scales comparable to that of embryonic zebrafish heart (e.g. ~400 microns).

The FMTC is pleased to announce that Prof. Parviz Moin, the Franklin P. and Caroline M. Johnson Professor of Mechanical Engineering at Stanford University, will be a plenary speaker at the 2010 Fluids Engineering Division Summer Meeting. The 2010 summer meeting is the 3rd Joint US–European Fluids Engineering Meeting and will be held in Montreal, Canada during August 1–5. For further information about the meeting and plenary speakers, please visit www.asmeconferences.org/FEDSM2010/.

To coincide with the annual conferences, the FMTC holds a business meeting at the IMECE and FED events. Elections for the FMTC officers will be held at the 2010 FED Summer Meeting in Montreal, after which the officers serve a two-year term (2010–2012). The FMTC chair and vice-chair terms end at the conclusion of the meeting. Nominations will be considered for both positions and the nominees must be present at the meeting so that they can give a short address on why they want the position. As a candidate, the vice-chair can be nominated to run in the election to serve as chair for the upcoming term. If you are interested in running for one of the positions or would like additional information, please contact one of the current FMTC officers.

During the last few years, we have watched the membership of the FMTC grow to include involvement from graduate students, postdoctoral research associates, and junior faculty members. Involvement of colleagues from industry is strongly encouraged as the infusion of new members helps the FMTC sustain and further our professional activities. Without the support and dedication of the FMTC members, we would not be able to offer the variety of technical sessions held at the annual conferences.

We cordially invite you to join the FMTC. If you are interested in joining, please either come to one of the annual business meetings or contact either Francine Battaglia (fbattaglia@vt.edu) or Javid Bayandor (bayandor@vt.edu). We hope to see you in Montreal this summer.

Freeman Scholar Committee:

Stathis Michaelides, Ph.D., P.E.

The Freeman Scholar standing committee is composed of Dr. Timothy O'Hern, Dr. David Stock and Dr. Stathis Michaelides (chair). The Committee, in collaboration with the ASME Headquarters, conducted the competition for the 2010 Freeman Scholar. After reading several very interesting applications and nominations from very well-qualified candidates, the Committee recommended that Professor Michael Reeks of New Castle University, England be the 2010 ASME Freeman Scholar. This recommendation was approved by the ASME Honors and Awards Committee. Dr. Reeks is well-known in the Fluids Engineering Division. Profession Reeks was an Associated Editor for JFE for 4 years, 1993-97. He has been in the organizing com-

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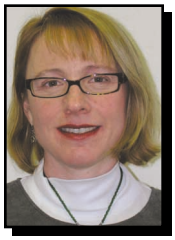
FED Committee Reports: (continued from page 10)

mittee of a number of symposia, most notably the International Symposium of Gas-Solid Flows to which he has been a frequent contributor and keynote lecturer since the 1980's. We will all look forward to his Lecture in this summer's meeting.

Micro/Nano Fluid Dynamics Technical Committee



Kendra Sharp, MNFDTC Chair, and Prashanta Dutta, MNFDTC co-chair

The Micro/Nano Fluid Dynamics community continues to have a strong presence at the IMECE meetings. This year 51 papers were accepted in the micro/nano fluid dynamics sessions, with 6 papers presented in the Fluids/Heat Transfer Track 10 and 45 in the Micro/Nano Track 13. These sessions were generally well attended, in some cases with 40+ attendees. Thank you to MinJun Kim, David Erickson, and Peter Huang for organizing the submissions and reviews for IMECE 2009. Peter Huang and Chang-Hwan Choi are taking the lead for IMECE 2010 in Vancouver, with Sushanta Mitra helping recruit Canadian participants.

One of the highlights of the annual IMECE meeting for our community are the keynotes. In 2009, the invited keynotes were given by Prof. Hang Lu, from Georgia Institute of Technology speaking on "Probing worm brains and manipulating cells with microfluidics" and Prof. Adela Ben-Yakar, from University of Texas at Austin speaking on "Laser axotomy-on-a-chip for encrypting the genetic makeup of axonal regeneration". The keynote committee of David Sinton, David Erickson, Hao Lin and Prashanta Dutta has been instrumental in identifying excellent speakers addressing topics of interest to the attendees. In 2010, we are pleased to announce that the following keynotes will be presented: "Point-of-Care Diagnostics for Global Health," by Prof. Paul Yager of the University of Washington, and "Microfluidic Tools for Studying Single Cell Responses," by Prof. Carl Hansen of the University of British Columbia.

This past years' best presentation award went to Christopher Church of Prof. Xiangchun Xuan's group at Clemson University. Chris did one presentation for his work and one for a colleague and both were excellent. Of the many excellent papers this year, the best paper award went to Anmiv Prabhu, Talukder Jubery, Keven Freedman, Rafael Mulero, Prashanta Dutta, and Min Jun Kim for their work, "High throughput nanofluidic architectures for nanoparticle separation". A number of volunteers have been involved in the MNFDTC awards subcommittee, including David Sinton, Channy Wong, Steve Wereley, and Derek Tretheway.

In addition to the oral sessions at IMECE 2009, many micro/nano fluidics posters were presented at the Micro/Nano Society-Wide Forum. This forum, organized by Tony Jun Huang, has become a popular society-wide forum with 145 posters in 2009 and is expected to continue in 2010.

In 2010, the Fluids Engineering Summer Meeting is being jointly sponsored with European Mechanical Engineering Societies and the International Conference on Nanochannels, Microchannels, and Minichannels in Montreal, Canada. A number of the MNFDTC committee members and community are participating either by presenting keynotes or presenting oral or poster submissions.

ASME's Nano Engineering Council has been very active in organizing some new conferences, including NanoEngineering for Medicine and Biology Conference which was held in Houston, TX in February 2010. Tony Jun Huang organized several successful sessions at NEMB2010, and Kendra Sharp has been representing FED interests in interactions with the NanoEngineering Council. The Council is also planning a NanoEngineering for Energy Meeting in the future.

Multiphase Flow Technical Committee

Malcolm J. Andrews

The main goals of the Multiphase Flow Technical Committee are to broaden the participation in the ASME activities of engineers and scientists from different fields of multiphase flow and particle technology, particularly young professionals, and to increase the interaction with other professional societies from the US and abroad. Another important objective is to maintain the high quality of the papers presented and published in the ASME Proceedings and the Journal of Fluids Engineering. A special emphasis is given to symposia on emerging areas of research. For more complete information, visit http://divisions.asme.org/FED/Multiphase_Flow.cfm

The MFTC committee takes an active role in the FED summer fluids (FEDSM10: August 1–5) and ASME winter meetings (IEMCE10: November 12–18). This summer there will be four significant MFTC sponsored symposia or fora: the "45th Cavitation and Multiphase Flow Forum" – Organizer – William Straka; the "Open Forum on Multiphase Flows: Work in Progress" – Organizers – Malcolm Andrews and Mark Duignan; the "Open Forum on Fluid-Particle Interactions in Turbulence" – Organizers – Alfredo Soldati, Mike Reeks, and Lance Collins; and, the. "10th International Symposium on Numerical Methods for Multiphase Flow" – Organizers – Malcolm Andrews and Francine Battaglia. As with previous summer meetings this will be an exciting opportunity to meet old friends and make new ones, especially since it will be held in the beautiful city of Montreal. Finally, the intellectual exchange should be vigorous due to the participation by the European Mechanical Engineering Societies, the International Conference on Nanochanne ls, Microchannels, and Minichannels (ICNMM), and the International Symposium on Fluid-Structure Interactions, Flow-Sound Interactions, and Flow-Induced Vibration & Noise (FSI2 & FIV+N)

Although we might be the oldest FED Technical Committee, we are always pleased to welcome new and active members. Please feel free to contact the chair, Malcolm Andrews at mandrews@lanl.gov, or the vice-chair, Mark Duignan at mark.duignan@srnl.doe.gov.

We look forward to seeing you in Montreal. ■

FED Awards

Detailed descriptions of the ASME Society and FED Division Awards presented by the Honors and Awards Committee can be found at http://divisions.asme.org/fed/Honors_Awards.cfm.

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 2009 Fluids Engineering Award is Ronald J. Adrian, Ira A. Fulton Professor of Mechanical and Aerospace Engineering, Arizona State University–Tempe. Professor Ronald J. Adrian was educated at the University of Minnesota (B.M.E. 1967, M.S. 1969) and at the University of Cambridge, where he received his Ph.D. degree in physics in 1972. His research interests are the space-time structure of turbulent fluid motion, especially wall turbulence and thermal convection, and the development of techniques, both experimental and analytical, to explore these structures. Methods to which he has made fundamental contributions are the laser Doppler velocimeter technique, particle image velocimetry, and the stochastic estimation method. He is a fellow of the ASME, the American Academy of Mechanics, the APS, and a member of the United States National Academy of Engineering. Recently, he received the Nusselt–Reynolds Prize for 2001 for experimental research in fluid mechanics and the AIAA Measurement Technology for 2002.

Fluids Machinery Design Award

The Award, presented biennially, honors excellence in the design of fluid machinery.

Robert T. Knapp Award

This award is given for the best paper presented at the Fluids Engineering Division sponsored sessions dealing with analytical, numerical and laboratory research.

Lewis F. Moody Award

The Lewis F. Moody Award is given for the best paper presented at the Fluids Engineering Division sponsored sessions dealing with a topic useful in mechanical engineering practice. The 2009 Moody Award was presented to Srinidhi V. Murali, Xinggao Xia, Ashish V. Jagtiani, Joan Carletta, and Jiang Zhe for their paper entitled "A Microfluidic Device for Wear Detection in Lubricants." This paper is published in the Proceedings of the 2008 International Mechanical Engineering Congress & Exposition (IMECE2008-66768). **Srinidhi Murali, M.S.,** has graduated with a M.S. degree in mechanical engineering from the University of Akron in 2009. She obtained her bachelor's degree in instrumentation & control engineering with a minor in biomedical engineering from Anna University in 2005. Her research interests include MEMS, microfluidics, sensors and actuators, and electronics with applications in biomedical engineering. **Xinggao Xia, M.S.,** is a graduate student of the Electrical and Computer Engineering Department at the University of Akron. Xinggao obtained his bachelor's degree in information engineering from Beijing Institute of Technology in 2002. His graduate research is microfluidic capacitive motor oil debris sensor with a focus on modeling and theory research by finite element analysis software. He is now interning at Spectra Quest, Inc., in Richmond, Virgina, and is working on embedded system design for stepper motor torsional vibration control. **Ashish V. Jagtiani, M.S.,** is currently pursuing a doctoral degree in mechanical engineering at the University of Akron. He obtained his master's degree in mechanical engineering from the University of Akron in 2007. His research interests include MEMS sensors and actuators and microfluidics. He has authored or co-authored seven peer reviewed journal articles. **Joan E. Carletta, Ph.D.,** is an associate professor of electrical and computer engineering at the University of Akron. Carletta earned a Ph.D. from Case Western Reserve University in 1996. Her research interests include real-time digital signal processing, embedded systems design, and analog integrated circuits, particularly for sensors and instrumentation. **Jiang Zhe, Ph.D.,** is an associate professor of mechanical engineering at the University of Akron. Zhe obtained his Ph.D. degree in mechanical engineering from Columbia University in 2002. His research interests include MEMS, microfluidics lab-on-a-chip devices, smart materials and structures. Prior to joining the University of Akron, he was a research and development engineer in advanced microsensors and fitel technologies. He has authored or co-authored 47 peer-reviewed technical papers and has two US patents.

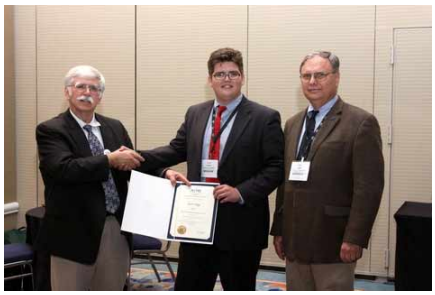
Sankaraiyer Gopalakrishnan Flowserve Pump Technology Award

The Award was established in July 2006, with funding generously provided by the Flowserve Corporation, in honor of the late Dr. Sankaraiyer Gopalakrishnan, "Gopal". The award is presented biennially in recognition of outstanding achievement in pump technology, documented through publications and testimonials of peers and coworkers and in keeping with Gopal's dedication to the education of the next generation of expert pump engineers. The recipient of the 2009 Sankaraiyer Gopalakrishnan—Flowserve Pump Technology Award is **Edward Bennett.** Mr. Bennett began his career designing steam turbine and axial fan blades for Coppus Murray. He subsequently worked for CONMEC (now a division of GE Oil and Gas), where he served as turbomachinery aerodynamicist. He then joined Concepts ETI, where he led the development of advanced turbomachinery pre-processors and postprocessors for advanced CFD software. He additionally worked on the design of advanced axial and radial turbomachinery. In 1995, Bennett founded ASC Turbo, where he performed the design and analysis of numerous pumps for aerospace, biomedical, chemical, environmental, and petrochemical applications. He was the technical development lead for the BladeGen software product. In 2003, Bennett was named director of Turbopump Assembly Design and Analysis by Gencorp Aerojet. He developed the formation of the newly created department, and developed the internal pump design methodology. In 2007, Bennett joined Mechanical Solutions, Inc. as the director of fluids engineering, and has been the program manager for many advanced fluids projects. During his career, Bennett has developed and led numerous training courses in advanced turbomachinery design and analysis. He is an associate editor of the ASME Journal of Fluids Engineering. ■

IMECE2009 FED Reception Photos, Lake Buena Vista, FL

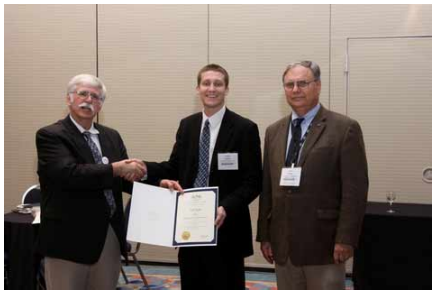
Awards

Young Engineers Paper Contest



Presentations by Terry Beck (Kansas State U.) with Joel Park (FED Chair). Jason Gregg (Baylor U.) 3rd Place

Joy Pathak (U. Windsor) FINALIST Honorable Mention



Todd Reedy (U. Illinois Urbana-Champaign) 2nd Place

Saeed Merza (Arizona State U.) FINALIST Honorable Mention

Jesse Kelly (U. Central Florida) 1st Place

Mo Hosni (Kansas State U.), Award as Technical Program Chair for FEDSM2009, Presentation by Joel Park (FED Chair)

Joel Park, ASME Chair Award 2009-10, Presentation by Jim Liburdy, Chair 2008-09

Khalid Hammad (Dantec Dynamics)

Informal Photos

Karman Ghia (U. Cincinnati), Mo Hosni (Kansas State), Urmila Ghia (U. Cincinnati), and Malcolm Andrews (Los Alamos)

Bahram Khalighi (General Motors) and Dennis Siginer (Petroleum Institute, UAE)

Joel Park and Kendra Sharp (Oregon State U.)

S. A. Sherif (U. Florida)

(continued on page 14)

IMECE2009 FED Reception Photos, Lake Buena Vista, FL (continued from page 13)

Jim Meng (U. S. Navy)

Karman Ghia (U. Cincinnati) and Don McEligot (Idaho National Eng. Lab)

Selected Plenary and Freeman Scholar Speakers for FEDSM2010

Representing ASME FED (2 speakers)

Prof. Parviz Moin, Department of Mechanical Engineering, Stanford University. Professor Moin pioneered the use of direct and Large Eddy Simulation techniques for the study of turbulence physics, control and modeling concepts and has written widely on the structure of turbulent shear flows. His research has focused on the development of advanced numerical tools and computational frameworks to predict the physics of turbulent flows in engineering systems. Through pioneering use of direct and large eddy simulation in complex geometries on massively parallel computers, Professor Moin conducts fundamental research on multiscale, multiphysics turbulence phenomena including shock-turbulence interactions, aerodynamic noise, hydro-acoustics, aero-optics, turbulent combustion, multiphase flows, and optimal control.

Dr. Paul Cooper — Dr. Paul Cooper has been an active and important contributor to ASME for decades, is a lifetime ASME Fellow, and has received the ASME Fluid Machinery Design Award and the Henry R. Worthington medal. He is a world-renowned expert in pumping systems, author of numerous papers in the field, and co-editor of McGraw-Hill's Pump Handbook.

Representing European FED (2 speakers)

Christophe Bailly, Professor of Fluid Mechanics and Acoustics at the Ecole Centrale de Lyon (ECL, engineering school, France). Progress in noise source identification using large-eddy simulations, or Key requirements to simulate high-Reynolds number turbulent shear flows with Fidelity.

Kemal Hanjalic, Professor, University of Rome, Italy, RANS, LES and combined approaches in CFD: prospects, niches, limitations and snares, or Complementarity of Experiments and Computer Simulations in Research of Turbulent Convection.

Representing ICNMM (1 speaker)

Harry Goldsmith — Dr. Goldsmith's research was first concerned with the microrheology of human blood, in particular that of the red cell (RBC) using a travelling microtube to track and photograph the cells in flow through microtubes using high resolution microscopy. RBC are subjected to shear stress and considerable particle crowding, and are continually distorted from the biconcave resting shape. The striking deformation of RBC at normal hematocrits is the microscopic correlate of the macroscopic low viscosity of blood. Continuous interactions between RBC produce a mixing flow and an increased rate of cell-wall collisions, important for normal vessel wall repair as well as in the genesis of atherosclerosis and thrombosis. This led to a study of the growth of platelet aggregates as a function of the applied shear stress, and to distinguish the separate roles of fibrinogen and von Willebrand factor, the latter increasingly important at high shear stress. Subsequent work led from micro- to molecular rheology in studies of the forces at play in the formation of non-covalent receptor-ligand bonds between white cells and the endothelium, important in inflammation. Since the bonds are formed under force, the force dependence of bond rupture (at the level of picoNewtons) was extensively studied for neutrophil-neutrophil and neutrophil-platelet aggregation. Fluid mechanical factors also play an important role in the localization of sites of atherosclerosis and the focal deposition of platelets resulting in thrombosis. Such sites mainly occur in regions of geometrical irregularity where vessels branch, curve and change diameter and where blood is subjected to sudden changes in velocity and/or direction. Therefore, in collaboration with Dr. Takeshi Karino, the flow behavior of red cells and platelets in such regions was studied and the connection made between the flow patterns (recirculation zones or eddies) and the increased deposition of cells on the vessel wall, as well as the formation of aggregates in regions of flow separation.

Freeman Scholar (1 speaker)

Prof. Mike Reeks, Professor of Multiphase Flow at the University of Newcastle. He is a member of ASME and has been an active participant in the ASME FED International Symposium in Gas-Particle Flows since about 1984 and is a co-organizer for the 12th Symposium for FEDSM2009 in Vail. He received his Ph. D. in Theoretical Physics from the University of Birmingham in 1971. ■

Executive Committee (EC) 2009–2010

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FEDSM2010 Conference Chair
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Professor
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Vice Chair:
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