



Editorial

Special Issue in Commemoration of the 90th Anniversary of the ASME Fluids Engineering Division

It is with great pleasure that we present the Special Issue of the ASME *Journal of Fluids Engineering* to celebrate the 90th Anniversary of the ASME Fluids Engineering Division (FED). With support of the FED Executive Committee, plans were conceived to commemorate and preserve the history of the division, including production of this special edition. A steering committee was formed in May 2015 that included Dr. Paul Cooper, Dr. Bahram Khalighi, Dr. Yu-Tai Lee, Dr. C. Samuel Martin, Dr. Efstathios (Stathis) Michaelides, Dr. William B. Morgan, Dr. Timothy J. O'Hern, Dr. George Papadopoulos, Dr. Joel Park, Dr. S. A. Sherif, and ASME staff Nick Ferrari, Norma Johnston, Jimmy Le, Christine Reilley, and Greg Valero. The committee organized activities to be held in conjunction with the summer 2016 annual meeting of the FED. Thus, a complementary effort ensued during the joint ASME meetings of the Summer Heat Transfer Conference (SHTC), the Fluids Engineering Division Summer Meeting (FEDSM), and the International Conference on Nanochannels and Microchannels (ICNMM) held on July 10–14, 2016 in Washington, DC. The conference provided an ideal opportunity to celebrate and recognize the achievements of our colleagues. Highlights of the conference activities include:

- Plenary by Professor Mohamed Gad-el-Hak (Virginia Commonwealth University, Richmond, VA) on “Nine Decades of Fluid Mechanics”;
- Lecture by Dr. William B. Morgan (Retired from the David Taylor Model Basin, W. Bethesda, MD) on “Events in FED History”;
- FED Banquet honoring previous Division Chairs, and winners of the Fluids Engineering Award, the Fluids Machinery Design Award, the Freeman Scholar Award, the Sankaraiyer Gopalakrishnan-Flowerserve Pump Technology Award, and the Henry R. Worthington Medal;
- Additional plenary talks by Dr. Patrick J. Roache (Consultant), Dr. Joseph T. Arcano (Naval Surface Warfare Center, Carderock Division, W. Bethesda, MD), Professor C. D. Mote, Jr. (National Academy of Engineering, Washington, DC), and the Freeman Scholar Lecture by Professor Goodarz Ahmadi (Clarkson University, Potsdam, NY); and
- Symposium in honor of Professor Richard H. Pletcher and Memorial Session in honor of Professor Shin-Hyoung Kang.

The special edition of the journal presents an extensive history of the origins of the FED, a look at the progress in fluid mechanics, and manuscripts covering a range of topics prepared by influential researchers in mechanical engineering, including articles capturing end-of-career research by retired faculty. In 1926, the Hydraulic Division (HYD) was established, and in 1963, the name was changed to the Fluids Engineering Division. A thorough compilation on the division history leads the special edition to capture the remarkable efforts of our predecessors. The article is written

by past division chairs, Dr. P. Cooper (1985–1986 FED chair, 1993 Worthington Medal, and 2002 Fluids Engineering awardee), Professor Emeritus C. S. Martin (1970 Freeman Scholar and 1980–1981 FED chair), and Dr. T. J. O'Hern (2001–2002 FED chair), who collected names and photographs of individuals that had a role in the evolution of the division. Two review articles appear herein: a written version of the plenary talk by Professor M. Gad-el-Hak (1998 Freeman Scholar) on the progress in the field of fluid mechanics during the last 90 years, and a review on the stability of two-immiscible-fluid systems co-authored by Professor Alexander Smits (2007 Fluids Engineering Awardee). A written version of the plenary lecture by Dr. P. J. Roache (1994 Knapp and 2016 Fluids Engineering awardee) on verification and validation in fluids engineering also appears herein.

Contributed articles based on experimental research are included, for example, the work co-authored by Professor Emeritus Gary Settles (2004 Freeman Scholar) and the work co-authored by Professor James Liburdy (2008–2009 FED chair). Computational studies have been contributed by Professor Urmila Ghia (2006–2007 FED chair), Professor Paul Durbin (Iowa State University), and Professor Haecheon Choi (Seoul National University, Seoul, South Korea). The applications of fluid dynamics in biological flows have been discussed in papers co-authored by Professor Michael Plesniak (George Washington University, Washington, DC) and Professor G. Ahmadi (2016 Freeman Scholar). Finally, Professor Emeritus Christopher Brennen (1977 and 1980 Knapp awardee, 1984–1985 FED chair, and 1992 Fluids Engineering awardee) has contributed a special article on the extreme sport of canyoneering as it relates to fluids engineering.

Together, these contributions represent works from prominent colleagues and friends who have helped advance fluids engineering over the past 90 years, and who have supported the efforts of the FED.

In closing, I would like to acknowledge those individuals whose invaluable service helped to create the special edition. I am grateful for the efforts of co-editors, Professor D. Keith Walters and Dr. Jinkook Lee, who shared in the responsibilities. I would also like to thank our journal editor Dr. Malcolm Andrews, and the assistance of the journal editorial staff, especially Ms. Amber Grady-Fuller. A final thanks as no journal is possible without the assistance of our colleagues who serve as reviewers, and of course the authors. It has been my privilege to participate in this endeavor to share and disseminate the contributions of the fluids engineering community.

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