

A Division of the American Physical Society

THE 65TH ANNUAL DFD MEETING

San Diego, California November 18–20, 2012



San Diego Convention Center and Marriott Marquis Hotel on San Diego Bay

We are quickly approaching the 65th Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD) which takes place in San Diego, California, from Sunday, November 18 to Tuesday, November 20, 2012. The meeting is hosted by the University of California, San Diego, with participation of the University of San Diego and San Diego State University.

Meeting Venue

The meeting convenes at the San Diego Convention Center (SDCC) located next to the San Diego Marriott Marquis and Marina Hotel and within easy walking distance from several downtown and harbor-side hotels. All events, including plenary talks and reception, will take place on the Upper Level of the SDCC.

San Diego

San Diego is a vibrant coastal city at the southern-most border of California. As a result of its ideal geographic location, San Diego is a gateway for global interactions. The city is home to telecommunications industry leader Qualcomm as well as leading-edge biotechnology start-ups. The highly-ranked University of California is located in the coastal community of La Jolla and is easily reached by freeway in 15-20 minutes

from downtown San Diego. The meeting facilities and hotel overlook San Diego Bay, are within a five-minute drive of the airport and within walking distance to the historic Gaslamp Quarter where you will find entertainment and dining. San Diego is an activity-oriented city where you can golf, surf, bike, hike, sail, or enjoy a walk through Balboa Park or the harbor-side. Seaport Village, with its many shops and restaurants, is adjacent to the meeting and hotel site, as is the USS Midway Museum.

Housing and Meeting Registration

Registration for the meeting and housing information are available through the meeting web site <http://apsdfd2012.ucsd.edu/> (also accessible from <http://www.aps.org/units/dfd/meetings/>). Links to registration and the conference hotel (San Diego Marriott Marquis & Marina) are provided together with instructions on how to make reservations at the discounted conference rate (\$169). Participants are urged to book their stay as early as possible. Rooms can be reserved at the reduced rate, as long as space is available, or until October 17th.

IN THIS ISSUE

- 1** 65th Annual DFD Meeting: San Diego, CA
- 3** Candidates for APS/DFD Officers and Executive Committees
- 8** PS/DFD Prizes and Awards for 2012
- 10** APS/DFD 2011-2012 Officers

The articles in this issue represent the views of the Division of Fluid Dynamics (DFD) publication committee and are not necessarily those of individual DFD members or the APS.

Key Dates and Registration fees:

Registration is available at
<http://www.apsdfd2012.ucsd.edu>

	Regular (9/17–10/21)	Late & On-Site (10/22–11/18)
APS Member	\$460	\$540
Non-APS Member	\$705	\$785
Graduate Student	\$212	\$295
Retired	\$212	\$295
Undergraduate	\$40	\$75

Cancellation deadline (no refunds after this date):
November 7

Video submission deadline:
October 10

Scientific Program

The scientific program will include four award lectures, eight invited lectures, minisymposia and focused sessions, contributed papers, poster sessions, exhibits and the Gallery of Fluid Motion poster and video entries. Over 2200 contributed abstracts, divided into 32 concurrent sessions, are planned.

Awards Program

Each year the APS Division of Fluid Dynamics presents the Fluid Dynamics Prize, the Francois Frenkiel Award, the Andreas Acrivos Dissertation Award, and the recently instituted Stanley Corrsin Award. The 2012 award winners are listed below and each awardee will give a lecture at the meeting.

Professor John Brady, CalTech – Fluid Dynamics Prize
 Professor Thomas Cubaud, SUNY Stonybrook – Francois Frenkiel Award
 Dr. William Durham, Oxford University – Andreas Acrivos Dissertation Award
 Professor Daniel Lathrop, University of Maryland – Stanley Corrsin Award

Invited Lectures

Eight invited lectures on topics of broad interest to the DFD community will be given by experts in each field:

Professor Shelley Anna, Carnegie Mellon University
 Professor Raymond Goldstein, Cambridge University

Professor Javier Jimenez, E.T.S. Ingenieros Aeronauticos - Madrid

Professor Alison Marsden, UC San Diego

Professor Eckart Meiburg, UC Santa Barbara

Professor Steve Monismith, Stanford University

Professor Ugo Piomelli, Queens University - Ontario

Professor Peter Schmid, CNRS Ecole Polytechnique

Focus Sessions

Interfacial Engineering in Thermal-Fluids. Chaired by Kripa K. Varanasi, MIT, and Neelesh Patankar, Northwestern University

Vortex Dynamics in Fluid-structure Interactions. Chaired by Stefan Llewellyn Smith, UCSD, and Darren Crowdy, Imperial College

Mini Symposia

High-Speed, High-Energy, Multi-Material Flows. Chaired by Gustaaf Jacobs, San Diego State University.

Complex fluid flows in memory of Daniel D. Joseph. Chaired by Howard Hu, University of Pennsylvania.

Gallery of Fluid Motion

The Gallery of Fluid Motion consists of posters or videos submitted by attendees illustrating the science - and very often also the beauty - of fluid motion. Both computational and experimental entries are encouraged. Poster and video entries must not duplicate one another.

Posters

The number of poster research contributions to the Annual DFD Meeting has doubled in the past three years (from 27 posters in 2009 to 54 posters in 2011) and we expect 120 this year. In order to better showcase this growing section, the 65th Annual DFD Meeting will launch the first **Student Poster Competition**. The poster session will be held during a dedicated time slot prior to the reception. Student posters will be judged and awarded 1st and 2nd Prize for "Best Poster" in several categories. Winners in each category will receive award certificates on Sunday evening and will be highlighted in the DFD Newsletter. While the Poster Session of the DFD Meeting is open to all participants, the Poster Competition will constitute a specific opportunity for graduate and undergraduate students to enhance their presentation skills and to build their professional network.

Audiovisual Equipment

All rooms will be equipped with an LCD projector, screen, microphone, and pointer. Speakers must provide their own laptop computer to use with the projector. A Speaker Ready Room with technicians will be available to help attendees ensure that their presentations work smoothly with the LCD projection equipment.

Exhibitor and Sponsorship Opportunities

Exhibits will be located on the Upper Level of the SDCC. Sponsorship opportunities are listed on the meeting website <http://apsdfd2012.ucsd.edu/>

For more information on sponsorship, please contact Harriet Kounaves, Planned Meeting Consultants at planmeetconsult@gmail.com

Conference Reception

The Conference Reception/Dinner will be held in the Sails Pavilion on the Upper Level of the San Diego Convention Center on Sunday evening, November 18, 2012. The reception is included in the registration fee for those who register as APS Members, non-members, graduate students and retired members. Additional tickets may be purchased for \$80 each.

Registration

Orchid Events Solution

Nick Taylor

nick@orchideventsolutions.com

Meeting Hosts

Hosted by the University of California, San Diego

with participation from:

San Diego State University

University of San Diego

Meeting Chair

Professor Juan C. Lasheras, Meeting Chair
jlasheras@eng.ucsd.edu

Professor Sutanu Sarkar, Meeting Co-Chair
sarkar@ucsd.edu
UC San Diego

Meeting Information

Planned Meeting Consultants

Harriet Kounaves

Francesco Carusi

planmeetconsult@gmail.com

2012 Meeting Website

<http://apsdfd2012.ucsd.edu>

Future APS/DFD Meetings:

2013 Pittsburgh, PA

Prof. Nadine Aubry, Meeting Chair

Carnegie Mellon University,

Peyman Givi, Meeting Chair

University of Pittsburgh

2014 San Francisco, CA

Prof. Sanjiva Lele, Meeting Chair

Stanford University

2015 Boston, MA

Prof. Kenny Breuer, Meeting Chair
Brown University

Candidates for APS/DFD Officers and Executive Committee Positions

The following individuals are nominees for APS/DFD Officer and Executive Committee positions. Please remember to vote by October 19th 2012. Look for an APS/DFD email with complete online voting instructions.

Candidates for Vice-Chair (vote for one)



James H. Duncan

University of Maryland

Jim Duncan is a Professor of Mechanical Engineering at the University of Maryland at College Park. He received a Bachelor of Science in Mechanical Engineering from Brown University in 1971 and a Doctor of Philosophy in

Geophysical Fluid Dynamics from The Johns Hopkins University in 1979. He worked as a research scientist at Hydronautics, Inc. and Flow Research Company until he joined the faculty of the University of Maryland in 1987. Jim's research has included studies of fundamental aspects of breaking waves, cavitation bubbles, fluid-structure interactions and computer vision. Jim has served in a number of roles in the administration of the Division of Fluid Dynamics. He was a member of the local organizing committee of the 2000 Annual Meeting, the Division Coordinator of the Gallery of Fluid Motion from 2001 to 2011, the Secretary-Treasurer from 2004-2006, the chair of the local Media Relations Committee for the annual DFD meetings from 2008 to 2010, a member of the local organizing committee for the 2011 Annual Meeting and a Member-at-Large of the Executive Committee from 2010 to present. Jim became a Fellow of the American Physical Society in 1999. He is an Associate Editor of the Journal of Fluid Mechanics and was a Guest Member of the Editorial Committee of the Annual Review of Fluid Mechanics in 2011. He was awarded the Poole and Kent Senior Faculty Teaching Award in the College of Engineering at the University of Maryland in 2003, and received the Distinguished Scholar-Teacher Award from the University of Maryland in 2004. In addition to his research and teaching duties, he was the Director of the College Park Scholars Science, Technology and Society program for undergraduates at the University of Maryland from 2002 to 2007.

Statement: I believe the Division of Fluid Dynamics is the premiere organization for the advancement of research

in fluid dynamics, and I am honored to have been nominated for vice-chair of the Executive Committee. If elected, I would strive to ensure that the Executive Committee of the DFD continues to perform its major functions well, including arranging for and overseeing the annual meeting; representing the division within the APS; promoting DFD members through nominations of APS Fellows and DFD/APS prizes and awards; promoting the subject of fluid dynamics (and DFD members) to the public, lawmakers, funding agencies and the wider scientific community; and facilitating the creation of a diverse membership. As mentioned in my biography above, I have been involved with the governance of the DFD for more than a decade and feel that the Executive Committee has done excellent work in all areas while maintaining only modest annual increases in meeting registration fees. I support our continuing efforts to incorporate new research trends in our meetings through both the inclusion of new session topics and the selection of appropriate invited talks. Our travel-grant program has enabled many students and foreign scientists to attend our meetings, and I support its continuation. Over the past few years, I helped to create and implemented a program to publicize the research presented at our meetings. These efforts have resulted in a number of articles in prominent newspapers, magazines and websites and have also, I believe, strengthened our relationship with NSF. I support the continuation and expansion of these public relations efforts. I also believe we should increase our efforts to form relationships with funding agencies. As Vice Chair of the Executive Committee, I would pursue all of the above goals and also respond to any additional issues brought up by the membership.



Robert D. Moser
University of Texas

Robert Moser is the Deputy Director of the Institute for Computational Engineering and Sciences, Director of the Center for Predictive Engineering and Computational Sciences, the W. A. "Tex" Moncrief Chair of Computational Engineering and Sciences and Professor of Mechanical Engineering at the University of Texas at Austin. He studied mechanical engineering at the Massachusetts Institute of Technology, where he received a B.S. degree in 1978, and at Stanford University where he earned a Ph.D. in 1984. Before coming to the University of Texas in 2005, Moser was a research scientist at the NASA-Ames Research Center (until 1995) where he worked in the Turbulence Physics Branch. He then joined the University of Illinois as a Professor of Theoretical and Applied Mechanics, and also directed the fluid dynamics group of the Center for Simulation of Advanced Rockets. His research is on the modeling and numerical simulation of turbulence and other complex fluid flow phenomena, which has included application to such diverse systems

as hypersonic reentry vehicles, solid propellant rockets, micro-air vehicles and the human cardiovascular system. He also is developing methods for validation and uncertainty quantification in fluid flow computations. Moser is a Fellow of the American Physical Society, and was awarded the NASA Medal for Exceptional Scientific Achievement. He is an active member of the Division of Fluid Dynamics and has served on the Executive Committee, the Frenkiel Award Selection Committee and the Fellowship Committee, and he co-organized (with Rich Lueptow and Hassan Nagib) the 58th Annual Meeting in Chicago.

Statement: It has been my pleasure and privilege to be part of the APS Division of Fluid Dynamics and to serve the community in small ways over the years. I am also honored to be considered for the Vice-Chair of the Division. As the premier society for the advancement of fluid dynamics, the Division and its leadership have important responsibilities to organize our annual meeting, recognize accomplishments through awards and prizes, and support and promote the membership. The Division also has an important role in communicating the interesting, exciting and important work that we do to the public and relevant government agencies. I would be pleased to advance these goals as Vice-Chair, if selected. It is important that we continue, and enhance where appropriate, our many successful activities and initiatives in these areas, while seeking new opportunities to support and promote the fluid dynamics community.

Candidates for Secretary/Treasurer (vote for one)



S. "Bala" Balachandar
University of Florida

S. "Bala" Balachandar got his MS and PhD in Applied Mathematics and Engineering at Brown University in 1985 and 1988. He then briefly worked at NASA Langley Research Center as a contractor. From 1990 to 2005 he was at the University of Illinois at Urbana-Champaign, in the Department of Theoretical and Applied Mechanics. Since 2005 he has been the William F. Powers Professor in the Department of Mechanical and Aerospace Engineering at the University of Florida. From 2005 to 2011 he was also the Chairman of the department and under his tenure the department expanded rapidly in strength. Bala's research focus has been large-scale simulations of transitional and turbulent flows. His current research interest includes multiscale, multimaterial modeling and simulation of multiphase and environmental flows. Bala received the Francois Naftali Frenkiel Award from the APS-DFD in 1996 and the Arnold O. Beckman Award and the University Scholar Award from the University of Illinois. In 2003, Bala's student Prosenjit Bagchi won the coveted Andreas Acrivos Dissertation Award for best Doctoral Thesis from the APS-DFD. In 2006 he was elected Fellow of the

American Physical Society and in 2008 fellow of the American Society of Mechanical Engineers. He served as an associate editor of the American Society of Mechanical Engineers (ASME) Journal of Fluids Engineering from 2002 to 2008 and from 2006 he has been an associate editor of the International Journal of Multiphase Flow. He was a member of the APS-DFD Fellowship committee from 2006 to 2008, and a member of the Acrivos Awards Committee from 2009 to 2011. In 2005 and 2006 he was part of the organizing committees of the 58th and 59th Annual Meetings of the APS-DFD.

Statement: APS-DFD has been part of my academic life ever since the second year of my PhD, when Brown University hosted ASP-DFD in 1984. It will be an honor to serve as the secretary-treasurer of APS-DFD. The Annual Meeting of DFD has steadily grown over the past decades and it has emerged as the most important meeting in fluid mechanics attracting top-notch researchers from around the world. As secretary-treasurer my primary goal will be to continue this rich tradition and further enhance the visibility and impact of APS-DFD through its annual meeting and other related activities.



Karen Flack
United States Naval Academy

Karen Flack has been a professor of Mechanical Engineering at the United States Naval Academy in Annapolis, Maryland for nineteen years. She received a bachelor's degree from Rice University, a master's degree from the University of California, Berkeley and a Ph.D. from Stanford University, all in Mechanical Engineering. Her research focuses on turbulent boundary layer physics with a concentration on rough wall boundary layers and frictional drag prediction. Recent work also includes performance characteristics of tidal turbines in unsteady flow conditions. Professor Flack is chair of the APS DFD Outreach and Mentoring committee and on the editorial board of the International Journal of Heat and Fluid Flow. She is the recipient of the ASME Robert T. Knapp award for best research paper in the Journal of Fluids Engineering, a Pi Tau Sigma teaching award and a United States government meritorious service medal.

Statement: I would be honored to serve in the position of Secretary/Treasurer for the APS DFD. I have been attending the APS DFD annual meetings since I was a graduate student and look forward each year to presenting my research, attending a wide range of sessions and meeting with colleagues. This meeting is vital for the fluids community and as I officer I would work to maintain its relevancy. I have been an active member of the APS DFD, serving on the Media and Relations Committee and I am currently chair of the Outreach and Mentoring Committee. As a member of these committees, I have organized and led a high school teacher's fluids workshop at

the previous four meetings. I have also helped in the development of a fluids outreach kit for high school physics teachers. In the role of Secretary/Treasurer, I will continue to provide service and leadership to the fluids community.

Candidates for Member at Large (vote for two)



Shelly Anna
Carnegie Mellon University

Shelley L. Anna is Associate Professor at Carnegie Mellon University, where she holds joint appointments in Mechanical Engineering and Chemical Engineering. She is affiliated faculty in the Department of Physics. Prior to joining the faculty at Carnegie Mellon in 2003, Dr. Anna received her B.S. in Physics from Carnegie Mellon in 1995, and M.S. and Ph.D. degrees in Engineering Science from Harvard University in 1996 and 2000, respectively. Her doctoral thesis work focused on the elongational viscosity of dilute polymer solutions. She worked as Senior Research Engineer at Solutia Inc., and then completed a Postdoctoral Fellowship in Fluid Dynamics and Complex Fluids at Harvard University from 2001 to 2003. Anna's research interests are in the areas of interfacial fluid mechanics and surfactant transport, and her work has included developing microscale experimental methods to probe and control liquid-fluid interfaces, such as surfactant-mediated tipstreaming and microscale droplet breakup. Her research approach uses experiments, scaling analysis, theory, and numerics to develop strategies to separate timescales for relevant processes. Anna received the Russel V. Trader Career Faculty Fellowship in Mechanical Engineering in 2011. She is the recipient of a 2005 NSF CAREER award, and the 2006 George Tallman Ladd Research Award from the College of Engineering at Carnegie Mellon. In 2012 she received Honorable Mention for a Carnegie Science Award in the category of Emerging Female Scientist. Anna has been an active member of the fluid dynamics community. For the APS Division of Fluid Dynamics, she was the Chair of the Acrivos Dissertation Award Selection Committee for 2012, and Vice Chair for 2011. She is currently the Vice Chair of the Fluid Mechanics (Area 1J) Programming Committee for the American Institute of Chemical Engineers. As the Meeting Program Coordinator for Fluid Mechanics for the 2010 AIChE Meeting, Anna worked to enhance the stature of the area poster session by raising sponsorship for a student poster competition. By running the session unopposed with an accompanying reception, attendance improved and our best students gained greater visibility. The format was well received and has continued. Anna is currently Member-at-Large for the Executive Committee of the Society of Rheology (SoR). As Chair of the Membership Committee of the SoR from 2008 to 2011, Anna proposed and implemented a program to reward graduating Ph.D. students with a small gift from the

Society, helping encourage students to remain active. She is currently serving as Technical Organizer of the SoR meeting in Pasadena in 2013 (w/C. Rinaldi, Univ. Florida) and Co-Chair of the Gordon Conference on Microfluidics in 2015 (w/J. Posner, Univ. Washington).

Statement: The APS DFD is a leader in the fluid dynamics research community. I have enjoyed being an active member of the division and a regular participant in annual meetings since I began attending during my postdoctoral fellowship in 2001. For me, these meetings and the talks and interactions that come along with them have played an important role in inspiring and shaping my own research. I would be honored to serve a greater role in the division as Member-At-Large. As in my previous activities with the broader fluid dynamics community, I am committed to maintaining a vibrant research community that drives leading edge research, and to bringing together young and established researchers from academia and industry to share progress in the most challenging outstanding research questions. I would strive to promote these goals while advancing the DFD mission.



Jonathan B. Freund
University of Illinois at Urbana-Champaign

Jonathan Freund received his degrees from Stanford University, working first on vehicle drag reduction and then on compressible turbulence. After completing his PhD, he became an assistant professor in Mechanical & Aerospace Engineering at the University of California, Los Angeles, where he stayed until 2001 when he joined the faculty of the Department of Theoretical & Applied Mechanics at the University of Illinois at Urbana-Champaign. In 2006, that department was merged with Mechanical Engineering to form Mechanical Science & Engineering, and at that time Prof. Freund took a joint appointment with Aerospace Engineering. His early work on compressible turbulence has led to a series of investigations, mostly simulation based, on the mechanics and control of jet noise. More recently, he has also studied the dynamics of atomically thin liquid films, cellular blood flow in the microcirculation, and the mechanics of tissue injury by strong pressure waves. He is the winner of the 2008 François Frenkiel Award and is an APS Fellow. He serves as an Associate Editor of Physics of Fluids and has served on the editorial board of Annual Reviews of Fluid Mechanics.

Statement: APS-DFD is without a doubt the principal societal home of my work---both at low and high

Reynolds numbers---and I seek to continue my service supporting it. I have served on the Acrivos Award and External Affairs committees, chairing the latter for two consecutive years. I also chaired the Technical Program Committee for the 2005 Chicago meeting. My goal is to further bolster the strength and vitality of the division, particularly our annual meeting, which I have enjoyed yearly without exception since Irvine. Maintaining the vitality we cherish in face of its ever growing size is the greatest challenge facing the division. Experiments with the program are planned, but continual analysis and discussion, reevaluation and revision of hypotheses, and further hard decisions will be necessary. In doing this, the DFD must remain inclusive of physicists, engineers, mathematicians, and all those with interest in foundational fluid dynamics and its myriad applications. As we grow, we should make directed efforts to engage the very best representatives of all our subdisciplines, both well established researchers and junior members with tremendous potential.



Beverley McKeon
California Institute of Technology

Beverley McKeon joined the Graduate Aerospace Laboratories at Caltech (GALCIT) in 2006 and currently holds the positions of Professor of Aeronautics and Associate Director of GALCIT. Her research interests include interdisciplinary approaches to manipulation of boundary layer flows using morphing surfaces and fundamental investigations of wall turbulence at high Reynolds number. Prior to joining GALCIT, she was a Royal Society Dorothy Hodgkin Research Fellow and postdoctoral scholar in the Department of Aeronautics at Imperial College London, after receiving a B.A. and M.Eng. from the University of Cambridge (1996) and Ph.D. in Mechanical and Aerospace Engineering from Princeton University (2003) under the guidance of Lex Smits. She was the recipient of an NSF CAREER award (2008) and a Presidential Early Career award (PECASE, 2009) in recognition of her contribution to understanding of wall turbulence, and serves as an editor of Experimental Thermal and Fluid Science. McKeon has been active in the APS-DFD since 1998, attending most DFD meetings and serving on the Program Committee (2008-10) and the Ad-Hoc Committee on Cyber Fluid Dynamics (2008-10). She has also served the fluid dynamics community through the AIAA Fluid Dynamics Technical Committee from 2008, and is coming to the end of a term chairing the AIAA Fluid Dynamics Award and Best Paper sub-committees.

Statement: I am honored to have been nominated as a candidate for the position of Member-at-Large of the

Executive Committee of the APS-DFD, our flagship organization for scientific fluid dynamics. I have attended the DFD meetings in capacities ranging from ringing the session bells as a graduate student to giving an invited lecture last year; the evolution and strength of the meeting during that period and beyond is a testament to both the actions of previous Executive Committees and the broad fluid dynamics community. However, burgeoning numbers of delegates associated with the success of the meeting, the counter-trend of current international fiscal realities and the broad public perception of fluid dynamics as a mature field all present distinct challenges for the APS-DFD of the future. As a Member-at-Large, I propose to work to balance the old and the new: to strengthen the opportunities for development and collaboration fostered through personal interactions during our annual meeting while broadening remote participation in the DFD by expanding use of new technologies and social media; to retain the broad excellence and promotion of fluid mechanics associated with the Division's current structure while developing new opportunities for recognition of young researchers; and to balance the DFD's expansion into exciting non-traditional areas with reporting of hard-fought progress on mature problems, both of which hold the potential for important societal impact. In short, if elected I propose to act as an additional advocate for the fluid dynamics community at large and to assist the Executive Committee in maintaining the Division's position as a vibrant, forward-looking, international forum for fluid dynamics.



Gareth H. McKinley
Massachusetts Institute of Technology

Gareth H. McKinley is the School of Engineering Professor of Teaching Innovation within the Department of Mechanical Engineering at MIT. He received his BA (1985) and M.Eng (1986) degrees from the University of Cambridge and his Ph.D (1991) from the Chemical Engineering department at MIT. He taught in the Division of Engineering and Applied Science at Harvard from 1991-1997 and was an NSF Presidential Faculty Fellow from 1995-1997. He won the Annual Award of the British Society of Rheology in 1995 and the Frenkiel Award from the APS Division of Fluid Dynamics in 2001. He served as Executive Editor of the Journal of Non-Newtonian Fluid Mechanics from 1999-2009 and as Associate Editor of Journal of Fluid Mechanics from 2007-2009. He is presently a member of the Editorial Board of Rheologica Acta, the Journal of Rheology and Applied Rheology. He is currently the Associate Head for Research of the Mechanical Engineering Department at

MIT, a Fellow of the American Physical Society and a Member-at-Large of the US National Committee of Theoretical and Applied Mechanics (USNC/TAM). He is a co-founder and member of the Board of Directors of Cambridge Polymer Group. His current research interests include extensional rheology of complex fluids, non-Newtonian fluid dynamics, microrheology & microfluidics, field-responsive fluids, superhydrophobicity and the development of nanocomposite materials. He has served in several capacities within the Division of Fluid Dynamics, including as a member of the APS Publications Committee and the APS Fluid Dynamics Prize committees.

Statement: The Division of Fluid Dynamics continues to grow in size and become ever-more encompassing and diverse. This brings with it both opportunities and challenges. As an example, there has been a large growth of interest over the past several decades in the fluid physics, nonlinear dynamics and engineering applications of complex fluids, soft matter and other microstructured materials – all of which are typically handled and processed in the fluid state. This interdisciplinary area remains one of potential future growth and societal impact for the Division of Fluid Dynamics. Communicating the unique fluid dynamical features and challenges of such systems to the broader physics community and educating the public on the technological importance of these fluid materials are topics of particular interest to me. My diverse experiences and service to the complex fluids, rheology and non-Newtonian fluid mechanics communities will help forge deeper and broader ties between the DFD and closely-related professional activities in the materials, chemistry and mechanics fields. As a member of the Executive Committee, I would also work to help ensure that the evolving structure and scope of our Annual Meeting interfaces optimally with other large annual fluids-related meetings, whilst reinforcing and expanding the Division of Fluid Dynamics' activities and impact in the emerging fields of complex fluids and soft matter.

APS/DFD Prizes and Awards for 2012

2012 Fluid Dynamics Prize Recipient



John F. Brady
California Institute of Technology

"For his seminal contributions to the rheology of "complex fluids", for creating the Stokesian Dynamics technique for predicting the macroscopic properties of concentrated suspensions under shear, and for his services to Fluid

Dynamics as Associate Editor and Editor, respectively, of two top journals."

Background: John F. Brady is the Chevron Professor of Chemical Engineering and Professor of Mechanical Engineering at the California Institute of Technology. He received his BS in chemical engineering from the University of Pennsylvania in 1975, which was followed by a year at Cambridge University as a Churchill Scholar. He received both an MS and PhD in chemical engineering from Stanford University, the latter in 1981. Following a postdoctoral year in Paris at ESPCI, he joined the Chemical Engineering department at MIT. Dr. Brady moved to Caltech in 1985.

Dr. Brady's research interests are in the mechanical and transport properties of two-phase materials, especially complex fluids such as biological liquids, colloid dispersions, suspensions, porous media, etc. His research combines statistical and continuum mechanics to understand how macroscopic behavior emerges from microscale physics. He is the co-inventor of the Stokesian Dynamics technique for simulating the behavior of particles dispersed in a viscous fluid under a wide range of conditions.

Dr. Brady has been recognized for his work by several awards, including a Presidential Young Investigator Award, the Professional Progress Award of the American Institute of Chemical Engineers and the Bingham Medal of the Society of Rheology. Dr. Brady served as an associate editor of the Journal of Fluid Mechanics and editor of the Journal of Rheology. He is a fellow of the American Physical Society and a member of the National Academy of Engineering.

2012 Stanley Corrsin Award Recipient



Daniel Lathrop
University of Maryland, College Park

"For his striking observations of flow in a quantum fluid, including detection of counter-flow that confirmed the two-fluid picture of quantum fluid, observation and characterization of reconnections of quantized vortices, and the discovery of an inverse-cube tail in the velocity distribution of superfluid turbulence."

Background: Daniel P. Lathrop is Professor of Physics, Professor of Geology, and Associate Dean for Research at the University of Maryland. He received a B.A. in physics from the University of California at Berkeley in 1987, and a Ph.D. in physics from the University of Texas at Austin in 1991. He served at Yale University as a postdoctoral fellow, research affiliate, and lecturer, and at Emory University as Assistant Professor. He joined the University of Maryland in 1997, the year he received a Presidential Early Career Award from the National Science Foundation. He was awarded a Cottrell Scholar Award in 1997 and the Farrell Fellowship in 2004. From 2006 to 2011 he served as Director of the University of Maryland's Institute for Research in Electronics and Applied Physics. He is a Fellow of the American Physical Society and the American Association for the Advancement of Science, and a member of the American Geophysical Union. His research focuses on nonlinear dynamics, rotating turbulent fluid flows, geomagnetism, and quantum turbulence.

Francois Frenkiel Award Recipient



Thomas Cubaud
State University of New York,
Stony Brook

"The paper was selected for its important contributions to microfluidics via careful and innovative measurements including viscous and surface-tension effects, providing a solid foundation for further theoretical developments."

Background: Thomas Cubaud of the State University of New York, Stony Brook, is the recipient of the Francois Frenkiel Award for his paper entitled "Folded microthreads: Role of viscosity and interfacial tension", Thomas Cubaud, Bibin M. Jose and Samira Darvishi, *Phys. Fluids* **23**, 042002 (April 2011). The award recognizes significant contributions to fluid mechanics that have been published in the *Physics of Fluids* during the preceding year by young investigators.

2012 Andreas Acrivos Dissertation Award



William (Mack) Durham
Oxford University

“For innovative work at the interface of fluid mechanics and environmental science, and specifically for demonstrating through a combination of original experiments and modeling that hydrodynamic effects can have a major impact on the spatial distribution of motile plankton in the ocean.”

Background: William Durham received the Andreas Acrivos Dissertation Award for his thesis entitled “Phytoplankton in Flow”. The award recognizes an exceptional young scientist for original, outstanding doctoral thesis work in fluid dynamics done in the United States. Dr. Durham did his doctoral thesis work at MIT under the direction of Prof. Roman Stocker, and is now at Oxford University.

APS/DFD 2011-2012 Leadership & Contact Information

DFD members are invited to contact the DFD Leadership with suggestions and concerns.

EXECUTIVE COMMITTEE

Chair

Kenny Breuer
(11/11–10/12)
Brown University

Chair-Elect

James Riley
(11/11–10/12)
University of Washington

Vice Chair

Nadine Aubry
(11/11–10/12)
Carnegie Mellon University

Past Chair

Ann Karagozian
(11/11–10/12)
*University of California-
Los Angeles*

Secretary/Treasurer

Eckart Meiburg
(11/09–10/12)
*University of California-
Santa Barbara*

Councillor

James Wallace
(01/11–12/14)
*University of Maryland-
College Park*

Member-at-Large

Timothy Colonius
(11/09–10/12)
Cal Inst of Tech (Caltech)

Member-at-Large

Elisabeth Guazzelli
(11/09–10/12)
CNRS Paris

Member-at-Large

Jim Duncan
(11/10–10/13)
*University of Maryland-
College Park*

Member-at-Large

Michael Plesniak
(11/10–10/13)
Purdue University

Member-at-Large

Sanjiva Lele
(11/11–10/14)
Stanford University

Member-at-Large

Detlef Lohse
(11/11–10/14)
University of Twente

NOMINATING COMMITTEE

8 MEMBERS, STAGGERED
2-YEAR TERMS

Ellen Longmire

(12/12)
Chair

Arne Perlstein

(12/13)
Vice Chair

Lance Collins

(12/12)

David Dowling

(12/12)

Joseph Powers

(12/12)

Kathleen Stebe

(12/12)

Mike Plesniak

(12/13)

Peter Schmid

(12/13)

PROGRAM COMMITTEE

8 MEMBERS, STAGGERED
3-YEAR TERMS

Nadine Aubry

(12/13)

Chair

James Riley

(12/12)

Vice Chair

Andrew Belmonte

(12/14)

Dan Bodony

(12/14)

Eric Lauga

(12/14)

Krishnan Mahesh

(12/12)

Sutanu Sarkar

(12/12)

Wendy Zhang

(12/13)

Ex-officio:

Juan Lasheras
(12/12)

FELLOWSHIP COMMITTEE

8 FELLOWS, STAGGERED
2-YEAR TERMS

James Riley

(12/12)

Chair

Nadine Aubry

(12/12)

Vice Chair

Haecheon Choi

(12/13)

Manoochehr

Koochesfahani
(12/12)

Richard Lueptow

(12/12)

Yuriko Renardy

(12/12)

Geoff Spedding

(12/13)

Laurette Tuckerman

(12/12)

EXTERNAL AFFAIRS COMMITTEE

8 MEMBERS, STAGGERED
3-YEAR TERMS

Aline Cotel

(12/12)

Chair

Alexandra Techet

(12/13)

Vice Chair

Alberto Aliseda

(12/12)

Tom Bewley

(12/12)

Charlie Henoach

(12/14)

Charles Meneveau

(12/13)

David Santillian

(12/14)

Larry Ukeiley

(12/14)

FLUID DYNAMICS PRIZE SELECTION COMMITTEE

8 MEMBERS, STAGGERED
2-YEAR TERMS

Tom Corke

(12/12)

Chair

Neelesh Patanker

(12/13)

Vice Chair

Henrik Alfredsson

(12/13)

Julian Andrzej

Domaradzki
(12/12)

Elisabeth Guazzelli

(12/12)

Pirouz Kavehpour

(12/13)

Tony Maxworthy

(12/12)

Serving a one year term as

recipient of prize in 2011

Sandra Troian

(12/12)

CORRSIN AWARD SELECTION COMMITTEE

8 MEMBERS, STAGGERED
2-YEAR TERMS

Martin Maxey

(12/12)

Chair

Gretar Tryggvason

(12/13)

Vice Chair

Mark Glauser

(12/13)

Philip Marcus

(12/12)

Charles Meneveau

(12/12)

Serving a one year term as

recipient of prize in 2011

Elaine Oran

(12/12)

Roman Stocker

(12/13)

Jane Wang

(12/13)

ACRIVOS AWARD SELECTION COMMITTEE

7 MEMBERS, STAGGERED
2-YEAR TERMS

Shelley Anna

(12/12)

Chair

Jonathan Rothstein

(12/13)

Vice Chair

Miki Amitay

(12/13)

Jacob Cohen

(12/13)

Lisa Fauci

(12/13)

Jeffrey Jacobs

(12/12)

John Torczynski

(12/12)

FRENKIEL AWARD SELECTION COMMITTEE

7 MEMBERS, STAGGERED
2-YEAR TERMS

P.-K. Yeung

(12/12)

Chair

Ali Beskok

(12/13)

Vice Chair

Triantaphyllos Akylas

(12/12)

Ken Christensen

(12/13)

Ching-Long Lin

(12/12)

Helen Reed

(12/13)

Michael Shelley

(12/12)

AE from POF

AD HOC COMMITTEE ON MEDIA & SCIENCE RELATIONS

5 MEMBERS, STAGGERED
2-YEAR TERMS

Anette (Peko) Hosoi

(12/12)

Chair

William Schultz

(12/13)

Vice Chair

James Brousseau

(12/12)

Timothy Wei

(12/12)

Rajat Mittal

(12/13)

AD HOC COMMITTEE ON EDUCATIONAL & CAREER OUTREACH

6 MEMBERS, STAGGERED
2-YEAR TERMS

Karen Flack

(12/12)

Chair

Jean Hertzberg

(12/13)

Vice Chair

Meredith Metzger

(12/12)

Andrew Pollard

(12/13)

Kathy Prestridge

(12/12)

Patrick Underhill

(12/13)

DIVISION WEBSITE DEVELOPMENT OFFICER

Jeff Eldredge

GALLERY OF FLUID MOTION COORDINATOR

Ken Kiger