

A Division of the American Physical Society

THE 62ND ANNUAL DFD MEETING

November 22-24, 2009 Minneapolis, MN

The 62nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD) will be held in Minneapolis, Minnesota from November 22nd to 24th, 2009. The meeting will be hosted by the University of Minnesota and will be held at the Minneapolis Convention Center in downtown Minneapolis.

Meeting Venue

The Minneapolis Convention Center is conveniently located close to hotels, retailers, entertainment and dining facilities, and is connected by an enclosed, climate controlled skyway system. "Eat Street" and downtown Minneapolis provide a wide variety of eating options within walking distance of the Convention Center. Additionally, concession stands are located throughout the Convention Center.

Oral presentations will be held in rooms on the first and second levels of the Convention Center. Exhibits, the Gallery of Fluid Motion, and refreshment breaks will be held in one large ballroom, and the Main Auditorium will be used for the awards ceremony.

Minneapolis

Minneapolis is compact and easy to navigate. Known as the "City of Lakes", Minneapolis has a vibrant downtown with easy access to theater, museums and fine dining. Please visit the Minneapolis Convention and Visitors Center at <http://www.minneapolis.org> for more information.

Housing and Meeting Registration

Registration for the meeting and housing is now open and can be accessed through the meeting website: <http://dfd2009.umn.edu>. Two hotels will be used for the 2009 APS/DFD meeting. To receive the special meeting room rate, please reference the APS room block if placing your reservation by phone.

Hilton Minneapolis

1-800-HILTONS, 1001 Marquette Ave., South
\$148 + tax, single/double
\$168 + tax, triple
\$188 + tax, quad

Doubletree Minneapolis

1-800-245-8011, 1101 LaSalle Ave.
\$119 + tax, single/double/triple/quad

Key Dates

October 12th

Early meeting registration ends

November 9th

Cancellation deadline (no refunds after this date)

November 9th

Onsite meeting registration required after this date

Hotels

October 20th

Hilton reduced rate ends

October 30th

Doubletree reduced rate ends

Gallery of Fluid Motion

Past due

Email intent to submit poster or video

October 16th

Video submission deadline

Scientific Program

This year's scientific program will include three award lectures, invited lectures, minisymposia, contributed papers, poster sessions, exhibits, and the Gallery of Fluid Motion. More than 1600 contributed abstracts, divided into 21 concurrent sessions, are anticipated.

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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.

Awards Program

Each year the APS Division of Fluid Dynamics presents several awards. The 2009 award winners are as follows:

Fluid Dynamics Prize

Stephen B. Pope, *Cornell University*

Francois Frenkiel Award

Aditya S. Khair and Todd M. Squires,
University of California, Santa Barbara

Andreas Acrivos Dissertation Award

Xiaoyi Li, *United Technologies Research Center*
Advisor: Kausik Sarkar, *University of Delaware*

Each award winner will give a lecture at the meeting.

Invited Lectures

The 2009 Annual DFD Meeting will have eight invited lectures. Each invited lecture will be thirty minutes long, followed by five minutes for questions. The lectures are (in alphabetical order by presenter):

Cavitation Inception and Bubble Dynamics in Vortical Flows

Steven Ceccio, *University of Michigan*

Bio-Mimetic Flow Control

Haecheon Choi, *Seoul National University, Korea*

Unsteadiness of Shock Wave / Boundary Layer Interactions

Noel Clemens, *University of Texas, Austin*

Particle Entrainment Under Turbulent Flow Conditions

Panayiotis Diplas, *Virginia Tech*

The Fluid Mechanics Inside a Volcano

Michael Manga, *University of California, Berkeley*

Ocean Surface Waves and Turbulence: Air-Sea Fluxes and Climate Variability

W. Kendall Melville, *University of California, San Diego*

Tumor Blood Vessel Dynamics

Lance L. Munn, *Harvard University*

Patterns and Dynamics in Transitional Shear Flows

Laurette S. Tuckerman, *PMMH-ESPCI-CNRS, France*

Minisymposia

The 2009 Annual Meeting will have four minisymposia. Each minisymposium will consist of five talks, each twice as long as a regular contributed talk. The minisymposia and their organizers are:

Intracellular Fluid Dynamics, Juan Carlos del Álamo

Uncertainty Quantification in Simulations of Fluid Flow, Gianluca Iaccarino

The Fluid Dynamics of Sports, Kyle D. Squires

Fluid Dynamics at Super-repellent Surfaces,

Constantine Megaridis, Eric Lauga, Lyderic Bocquet

Gallery of Fluid Motion

The 27th annual Gallery of Fluid Motion will be held as part of the meeting. The Gallery consists of aesthetically pleasing and insightful posters or videos of fluid motion submitted by attendees. Both computational and experimental entries are encouraged. Poster and video entries must not duplicate one another. Outstanding posters, selected by a panel of referees, will be recognized during the meeting, will also be displayed at the annual APS meeting in March, 2010, and will appear in the September 2010 issue of the *Physics of Fluids*.

Please see the meeting website for information on Gallery of Fluid Motion entries.

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.

Conference Reception

Always a highlight of the meeting, the Conference Reception will be held at the Hilton Minneapolis on Sunday evening, November 22, 2009. The reception is included in the registration fee for those who register as APS Members, Nonmembers, Graduate Students, and Retired Members. Additional tickets may be purchased for \$75 each.

Exhibitors

The Convention Center Ballroom will host staffed booths belonging to various vendors and exhibitors. Attendees are very welcome to stop by, and interact with the exhibitors. For more information on exhibits or sponsorship, please contact Professor Krishnan Mahesh (mahesh@aem.umn.edu) or Meetings and More (301 641-4150, mtgs911@aol.com).

Meeting Host

The meeting is hosted by the University of Minnesota

Meeting Chair

Prof. Krishnan Mahesh
University of Minnesota
mahesh@aem.umn.edu

Meeting Information:**Contact Meetings and More**

General Information (Monica Malouf)

Phone: (301) 526-8129

Exhibiting and Sponsorship Information (Peggy Holland)

Phone: (301) 641-4150

Fax: (301) 240-396-5900

Email: mtgs911@aol.com

2009 Conference Website<http://dfd2009.umn.edu>**Future APS/DFD Meetings**

2010 Long Beach, CA;

Prof. Julian A. Domaradzki, Meeting Chair

University of Southern California

2011 Baltimore, MD;

Prof. Andrea Prosperetti, Meeting Chair

Johns Hopkins University

New NSF Fluid Dynamics Program Manager

Prof. H. Henning Winter is the new Program Manager for the Fluid Dynamics program at the National Science Foundation. He succeeds Prof. Bill Schultz, who is returning from his leave at NSF to his home institution, the University of Michigan's Department of Mechanical

Engineering. The Fluid Dynamics program lies within the Chemical, Bioengineering, Environmental, and Transport (CBET) Division at the National Science Foundation.

Henning comes to NSF on leave from the University of Massachusetts, Amherst, where he is a Distinguished University Professor of Chemical Engineering, an Adjunct Professor of Polymer Science and Engineering, and Director of the Laboratory for Experimental Rheology. Recent research projects include breaking and healing of associative network polymers, development of solvent-free, open-pore polymers from gel processing, and development of a Cyber Infrastructure Initiative for Rheology. Henning is the 2004 recipient of the Samuel F. Conti Faculty Fellowship Award, and received an Alexander von Humboldt Senior Scientist Award in 1999.

Henning will join Mark Ingber (NSF PM for Particulate and Multiphase Processes) to host the traditional NSF CAREER Award workshop for junior faculty at the APS/DFD Meeting in Minneapolis. The Division offers a warm welcome to Henning, as well as its grateful thanks to Bill Schultz for his leadership of the NSF Fluid Dynamics program!

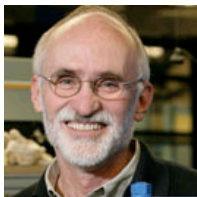
Candidates for APS/DFD Officers and Executive Committee Positions

The following individuals are nominees for APS/DFD Officer and Executive Committee positions. Please remember to vote online by Friday, October 16, 2009 (see an email from ellen@aem.umn.edu sent on 3 Sept 2009 for instructions).

Candidates for Vice-Chair (subsequently Chair-Elect and Chair)—vote for one of these two:**Prof. Kenny Breuer****Institution:** *Brown University***Background:** Kenny Breuer received his Sc.B. from Brown University in Mechanical Engineering (1982) and his Ph.D. from MIT in Aeronautics and Astronautics (1988). He spent two years

back at Brown as a Post Doctoral Fellow in Applied Mathematics and nine years as Assistant and Associate professor at MIT, before finally returning to Brown in 1999, where he is currently Professor of Engineering. He has served as associate editor of the *Journal of Fluids Engineering*, *Microfluidics and Nanofluidics* and the *International Journal of Heat Transfer and Fluid Flow*. He has served as Chair of the ASME Committee on Micro- and Nanoscale Fluids, and as a member of the AIAA Aerodynamic Measurement Technology Technical Committee. Within the APS/DFD, he has served on the Publications Committee and the Nominations Committee. Over his career, Kenny's research interests have covered a broad range of Reynolds numbers and length scales. At the micron-scale, he has been active in the development of diagnostic techniques for micron-scale and near-surface velocimetry, in the characterization of slip flows, hindered diffusion and the mechanics of bacterial motility. At the macro-scale, he has worked on the control of turbulent shear flows and the mechanics of animal flight (particularly bat flight) and, motivated by that, in fluid interactions with compliant structures. Kenny has also been active in fluid dynamics education and outreach, serving as a co-author on the DVD Multimedia Fluid Mechanics, and as a co-editor of the compilation: *A Gallery of Fluid Motion*. He has also appeared on programs such as PBS's *NOVA* and Discovery Channel's *Weird Connections*. **Statement:** The diversity and vibrancy of Fluid Dynamics is reflected in the continued growth of the APS/DFD November meeting, and in the continued development of the principles of fluid mechanics both in the classical areas of research, as well as in newer multi-disciplinary areas that are experiencing an explosive growth. As always, research funding, particularly for fundamental work, remains a concern. One focus of the DFD must be to continue to build support

in the national funding agencies for our work, and to reinforce and extend connections and collaborations between our community and researchers in other fields who can apply the results of our research to advance their own disciplines. A second major challenge is to make fluid mechanics educational resources accessible to students at every level of education and income. Projects like Multimedia Fluid Mechanics and eFluids.com have demonstrated how we can leverage technology to enhance Physics and Engineering education. I hope to establish a framework to encourage more projects like this, including open-source textbooks, problem set banks and other resources to enable outreach and education both to the privileged "G8" countries, but also to students in the developing world. Lastly, the annual APS/DFD meeting is for many of us both an exhilarating and exhausting event. We must strive to sustain and improve the quality of the meeting, to organize and manage the breadth of the conference, and to continue to develop resources to support attendance of students, young researchers, and colleagues from throughout the world.



Prof. James Duncan

Institution: *University of Maryland*

Background: 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 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. Jim became a Fellow of the American Physical Society in 1999. He 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 present, the Secretary-Treasurer from 2004-2006, and the chair of the local Media Relations Committee for the annual DFD meetings from 2008 to present. **Statement:** The main functions of the DFD executive committee are to arrange for and oversee the annual meeting; represent the division within the APS; promote DFD members through nominations of APS Fellows, DFD awards and research

advertisements; and promote the subject of fluid dynamics (and DFD members) to the public, lawmakers, funding agencies and the wider scientific community. The committee has done excellent work in all of these areas while maintaining only modest annual increases in meeting registration fees. In the future, as in the past, we must be sure that the Division continues to incorporate new research trends in its 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 should be continued. Our organized efforts to publicize the research presented at our meetings began only last year and has resulted in a number of articles in well-known newspapers, magazines and websites and has also, I believe, strengthened our relationship with NSF. I support these public relations efforts. I believe we should increase our efforts to form relationships with funding agencies. As Vice Chair of the Division, I would pursue all of the above goals and also respond to the additional issues brought up by the membership.

**Candidates for Secretary-Treasurer—
vote for one of these two:**



Prof. Richard Lueptow

Institution: *Northwestern University*

Background: Richard M. Lueptow received a BS in Engineering from Michigan Technological University in 1978 and SM and ScD degrees in Mechanical Engineering from MIT in

1980 and 1986. Early in his career, he worked for five years as a research engineer for Haemonetics Corporation, a biomedical products company. In 1988 he joined the faculty at Northwestern University, where he is now a Professor of Mechanical Engineering, formerly holding the chaired position of Charles Deering McCormick Professor of Teaching Excellence. Dr. Lueptow has investigated fundamental physics of turbulent boundary layers, Taylor-Couette flow, and granular flow. He has also studied applications of fluid flow including flows in blood processing devices, rotating filtration, reverse osmosis, and fire suppression sprays. In 2005, he was the lead organizer of the American Physical Society-Division of Fluid Dynamics annual meeting in Chicago and he currently serves on the Program Committee. Beyond fluid dynamics, his interests extend to filtration systems, physical acoustics, photocatalysis, and product development. He has published over 90 journal papers on his research, two books on engineering graphics, and five patents. Dr. Lueptow teaches fluid mechanics, spectral analysis, and design. He is currently Senior Associate Dean for Research and Administration and Co-Director of the Master of Product Development Program in the McCormick School of Engineering and Applied Science at Northwestern. He has ongoing collaborations with researchers at several

European universities and is a Fellow of the American Physical Society. **Statement:** The APS Division of Fluid Dynamics is the preeminent organization for fluid dynamics researchers, not only in the US but world-wide. The DFD Annual Meeting has emerged as the prime international venue for reporting advances in fluid dynamics research, and with strong leadership over the past several years, the Division has grown in membership. My goal as Secretary-Treasurer will be to build upon the already solid foundation of the Division in terms of financial stewardship and organizational structure. My experience as the lead organizer of the 2005 DFD Annual Meeting in Chicago and on the DFD Program Committee has given me insight into many management aspects of the Division's operations as well as its interaction with the APS headquarters. I will utilize that knowledge to provide the sound financial and organizational leadership necessary to serve the fluid dynamics research community. In addition, I am eager to maintain and improve the position of the DFD within the APS and the international physics community.



Prof. Eckart Meiburg

Institution: *University of California, Santa Barbara*

Background: Eckart Meiburg received his Diplom degree in Mechanical Engineering from the University of Karlsruhe, Germany, in 1981. He was a DAAD fellow in Chemical Engineering at Stanford during 1981-1982, before completing his Ph.D. degree at the DLR in Goettingen in 1985. After returning to Stanford as a postdoc from 1986 to 1987, he served on the faculties of Brown University and the University of Southern California. Since 2000, he has been a member of the Mechanical Engineering department at the University of California, Santa Barbara, where he served as department chair from 2003-2007. His current research focuses on gravity and turbidity currents, as well as particle-laden and interfacial flows. Professor Meiburg has held visiting positions at the Universite Joseph Fourier (Grenoble), ETH Zurich, Ecole Superieure de Physique et de Chimie Industrielles (Paris), the Max Planck Institute for Dynamics and Self-Organization (Goettingen), and the University of Western Australia (Perth). He has received the Presidential Young Investigator Award, the Humboldt Research Award, and the Senior Gledden Fellowship, and he is a Fellow of the American Physical Society. In addition, he holds memberships in ASME, SIAM and Euromech. He is Associate Editor for the European Journal of Mechanics B/Fluids, and on the Editorial Board of the Journal of Turbulence. Furthermore, he has served on the Frenkiel and Acrivos Award Committees. **Statement:** I am honored to stand for election as Secretary/Treasurer of the APS Division of Fluid Dynamics. The annual DFD meetings, with their representation from all areas of fluid dynamics, represent the premier conference in our field. As Secretary/Treasurer,

my goal would be to help ensure the future success of DFD meetings, and to promote fluid dynamics in a more general sense.

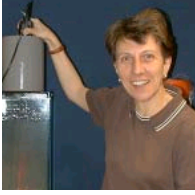
**Candidates for Executive Committee—
vote for two of these four:**



Tim Colonius

Institution: *California Institute of Technology*

Background: Tim Colonius is Professor of Mechanical Engineering at the California Institute of Technology, where he teaches and leads a research group in fluid dynamics. He joined the Caltech faculty first as assistant and then associate professor after receiving his Ph.D. from Stanford University in 1994. He has received an NSF CAREER award, the IUTAM Bureau prize, and an AIAA Best Paper Award. His research areas have included compressible flow, aeroacoustics, shock waves, cavitation, and biomedical ultrasound and lithotripsy. He and his students develop advanced numerical methods to simulate, understand, and develop reduced-order models and control of complex unsteady flows arising in these areas. **Statement:** Ever since my first meeting at Buffalo in 1988, the DFD meeting has been instrumental in my professional development; my primary goal as a member of the executive committee will be to ensure that the DFD continues to provide young researchers with the premier forum for networking and disseminating their ideas about the physics of fluids. To further those goals, especially for students who may have had the opportunity to attend the November meeting, I cofounded the SoCal Fluids meeting, which annually brings together young researchers and their mentors from 10 major research universities in Southern California in an APS-style forum on fluid dynamics. 65 graduate students and postdocs gave presentations in the most recent meeting. As a member of the DFD executive committee, I would like to encourage and help others to organize such activities in other regions. The DFD has recently taken important steps to enhance the visibility of fluid dynamics, for example with the virtual pressroom and opportunities to meet with press at meetings. It is important for DFD to maintain and broaden this effort, especially by focusing on the challenges associated with new media. Wikipedia, for example, is now the primary resource for the general public (and, like it or not, students) to learn about fluid dynamics. Our community needs to be closely involved to ensure that information on the web is accurate, unbiased, up to date, and broad enough to help people understand how fluid dynamics is relevant to pressing societal needs such as energy independence, climate change, and biological systems. I would thus like to help implement new ideas to enhance the visibility, relevance, and accuracy of information about fluid dynamics in new media.



Elisabeth Guazzelli

Institution: *Polytech Marseille*

Background: Elisabeth Guazzelli is Senior Researcher (Directeur de Recherche) at the CNRS (Centre National de la Recherche Scientifique) and affiliated with the IUSTI Laboratory of Polytech-

Marseille, of which she is Vice Director. A physicist by training, her research interests are in the field of particulate multiphase flows, such as granular media, fluidized beds, suspensions, and sedimentation. She is responsible for a very active and diversified research group in Marseille composed of ten people. Since 2005, she has been an Associate Editor of the *Journal of Fluid Mechanics*. She was elected Fellow of the American Physical Society in 2008. **Statement:** The APS Division of Fluid Dynamics is one of the premier academic and professional organizations devoted to fluid dynamics in the world. The DFD meetings give strong examples of the important role played by Fluid Mechanics in a wide range of engineering and science problems. It is important that the DFD maintains a great visibility of Fluid Mechanics while showing a diverse and international perspective.



Robert Krasny

Institution: *University of Michigan*

Background: Robert Krasny received the B.S. and M.A. degrees in Mathematics at the State University of New York at Stony Brook, in 1973 and 1975, respectively. During 1977-1979 he

worked at Brookhaven National Lab as a computer programmer. He received the Ph.D. degree in Applied Mathematics at the University of California, Berkeley in 1983. He was an NSF Postdoctoral Fellow at the Courant Institute during 1984-1987. He started as Assistant Professor of Mathematics at the University of Michigan in 1987 and was promoted to Associate Professor in 1990 and Professor in 1996. Krasny's research focuses on developing Lagrangian particle methods for simulating vortex-dominated flows, especially vortex sheets and vortex rings. He gave an invited lecture at the International Congress of Mathematicians in Kyoto, 1990. In 2000 he was appointed Arthur F. Thurnau Professor at the University of Michigan for contributions to undergraduate education. He was elected Fellow of the American Physical Society in the DFD in 2007. **Statement:** The APS Division of Fluid Dynamics plays a key role in advancing the field of fluid dynamics. The DFD is extraordinarily broad. Its members include specialists in experiment, theory, and computation, with backgrounds in engineering, science, and mathematics, from academia, industry and the national labs, and from many regions in the U.S. and around the globe. The scope of fluid dynamics has grown in recent years, driven by new applications in areas such as biology and nanoscience. Fluid dynamics research

will be essential in solving many of society's pressing problems involving energy, health, and the environment. The DFD annual meeting is the place to be to learn of recent developments in the field. The annual meeting has grown in size, and recent meetings have included sessions on education. The DFD pays increasing attention to outreach in order to strengthen support for fluid dynamics at the funding agencies as well as to increase public understanding of the importance of the field. A critical issue is training the younger generation and attracting them to join the DFD. The work of the DFD is carried out by members serving on various committees. The Executive Committee is entrusted to ensure the continued vitality of the DFD. If elected as a member-at-large I will work to promote that goal.



Sanjiva Lele

Institution: *Stanford University*

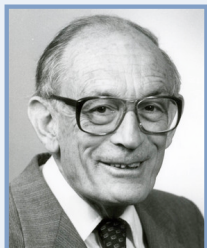
Background: Sanjiva K. Lele is a Professor with joint appointments in the Department of Aeronautics and Astronautics, and Mechanical Engineering at Stanford University. He received a

B. Tech. from IIT, Kanpur, India, in 1980 and a Ph D. from Cornell University in 1985, both in Mechanical Engineering. After working at the NASA/Stanford Center for Turbulence Research at NASA Ames as a postdoctoral fellow and a senior research associate he joined the faculty at Stanford University in 1990. His research interests include diverse unsteady flow phenomena, flow instabilities, turbulence, and aerodynamic noise. He is also interested in developing high-fidelity numerical methods for flow simulations. He teaches undergraduate and graduate level courses in fluid mechanics, turbulence, acoustics, aeroacoustics and engineering mathematics. He received the F. N. Frenkiel award in 1986, from the American Physical Society, Division of Fluid Dynamics, and the NSF Presidential Young Investigator award in 1991. He was elected a Fellow of the American Physical Society in 2001 "for his seminal contributions to the understanding of compressible turbulent flows and for his pioneering work in computational acoustics." He served as an Associate Editor of the *Journal of Fluid Mechanics* from 1994-2004. During the year 2000 he received best paper awards from both ASME and the AIAA. He has played an active role in the American Physical Society's Division of Fluid Dynamics to which he got introduced as a graduate student at Cornell. He has previously served on the APS-DFD's Executive Committee during 1998-2001 and continued on the Program Committee during 2001-2003. He serves on the Technical Committee for Aeroacoustics within the AIAA, and is currently a member of the Acivos Prize Committee of APS-DFD. **Statement:** I have benefited tremendously from APS-DFD throughout my career and the APS-DFD annual meeting has been a steady source of inspiration

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and learning, and an anchor point of scientific collaborations and friendships. The diverse science and engineering communities which APS-DFD bridges across bring fresh new problems, application perspectives and research tools to fluid mechanics and transport sciences. In future

this diversity will continue to grow as new problems of transport in living systems, in our global environment and in new energy technologies are addressed. I am ready to serve the APS-DFD community by re-engaging more deeply in our professional society.



IN MEMORIAM

Hans Wolfgang Liepmann 1914 - 2009

Hans Wolfgang Liepmann, a pioneering researcher and passionate educator in fluid mechanics, passed away on June 24, 2009 at his home in La Canada Flintridge at the age of 94.

Liepmann, the Theodore von Kármán Professor of Aeronautics, Emeritus, at the California Institute of Technology (Caltech), was widely honored for his contributions to aeronautics.

Liepmann, known for his sharp wit and distinctive accent, was a noted teacher who mentored more than 60 PhD students and hundreds of undergraduates during his career at Caltech. He came to the Institute in 1939 and was the third director of Caltech's Graduate Aeronautical Laboratories (GALCIT), from 1972 to 1985. He had a profound impact on the field of fluid dynamics, and was the academic father, grandfather, and great-grandfather to many in the APS/DFD community.

Liepmann was born in Berlin and grew up surrounded by the political turmoil and liberal Berlin society of the 1920s. He joined his family in Turkey in 1934, and later traveled to Switzerland, finding academic success in the physics department at the University of Zürich. His talent as an experimentalist was immediately recognized, leading to an invitation to pursue his doctoral studies on low-temperature physics under Richard Bar. Liepmann's scientific temperament was strongly influenced by the exciting physics scene of 1930s Zürich and the teaching style of Gregor Wentzel, a student of Arnold Sommerfeld, whom many consider the father of modern physics.

Liepmann came to the U.S. in 1939 after impulsively expressing an interest in "hydrodynamics" during a drinking party at the successful conclusion of his PhD defense. An offer from Theodore von Kármán led to a research position in experimental fluid mechanics at GALCIT, where Kármán was the first director. Liepmann's first experiments, on boundary layer instability and transition to turbulence, were followed by investigations of various turbulent flows that are relevant to engineering application—a recurring theme throughout his career. With the entry of the U.S. into World War II, he began research on problems associated with high-speed flight, including transonic flight phenomena and interaction of shock waves with boundary layers on aerodynamic surfaces. This also marked the

beginning of a longtime interaction with the Southern California aircraft industry. With Allen Puckett, he organized short wartime courses on high-speed aerodynamics for working engineers, resulting in their pioneering textbook, "The Aerodynamics of Compressible Flow." It was followed in 1956 by "Elements of Gasdynamics," written with Anatol Roshko, which impacted a much broader population of engineers and scientists, becoming a classic text for many generations of graduate students. The text was translated into Russian, Spanish, and Japanese.

In the rapid expansion of scientific and applied research that followed World War II, Liepmann emerged as a respected and influential contributor to the aeronautics scene and to physics of fluid flow. By 1949 he had advanced to professor of aeronautics at Caltech and had developed a vigorous program of research around his group of PhD students and visiting postdoctoral fellows as well as senior scientists, many of them seeking a change from their work in postwar Europe. The work of his group was distinguished by its innovation in experimental apparatus and instrumentation. Pioneering contributions were made to a wide range of topics that frequently anticipated future technology, including flow instability and transition, turbulent shear flow, transonic flow, shock wave-boundary layer interaction, turbulent skin friction at supersonic speeds, aircraft buffeting, rarefied gas flow, magnetohydrodynamics, plasma physics, fluid mechanics of liquid helium, chemistry of turbulent mixing, and flow control.

In recognition of his accomplishments, Liepmann was elected a member of both the National Academy of Engineering and the National Academy of Sciences. He was a recipient of the National Medal of Science in 1986 and of the National Medal of Technology in 1993, for "outstanding research contributions to the field of fluid mechanics". He was also a recipient of the Ludwig Prandtl Ring—the highest honor conferred by the German Society for Aeronautics and Astronautics. A Fellow of the American Physical Society, Liepmann was among the earliest members of the Division of Fluid Dynamics, serving as Division Chair in 1953 and receiving the Fluid Dynamics Prize in 1980 and the Otto Laporte Award/Lectureship in 1985.

Liepmann leaves behind sons Dorian, Till, Christopher, and Paul, and two grandchildren. A Memorial honoring the life and work of Hans Liepmann will be held on the Caltech campus in Pasadena, CA on Saturday, January 23, 2010. Information on the Memorial will be forthcoming at <http://www.galcit.caltech.edu/>.

APS/DFD 2009 LEADERSHIP & CONTACT INFORMATION

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

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(11/08-10/09)
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(11/08-10/09)
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(11/07-10/10)
LIMS

Member-at-Large

Lance Collins
(11/08-10/11)
Cornell University

Member-at-Large

Stefan Llewellyn Smith
(11/08-10/11)
University of California - San Diego

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9 members, staggered 2-year terms

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John Kim
(12/09)

Vice-Chair

Fazle Hussain
(12/10)

Council Member

James Rottman
(12/09)

Ron Adrian
(12/09)

Monika Nitsche
(12/09)

John Lister
(12/09)

Peter Schmid
(12/10)

Geoff Spedding
(12/10)

Leslie Smith
(2/10)

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9 members, staggered 3-year terms

Chair

Bud Homys
(12/10)

Vice-Chair

Zvi Rusak
(12/11)

Andy Cook
(12/09))

Jean Hertzberg
(12/09)

Eric Lauga
(12/10)

Giles Brereton
(12/11)

Hao Lin
(12/11)

Neelesh Patankar
(12/11)

David Kassoy
(12/11)

PROGRAM COMMITTEE

8 members, staggered 3-year terms

Chair

Juan Lasheras
(12/09)

Rich Lueptow
(12/09)

Andrew Belmonte
(12/09)

Beverley McKeon
(12/10)

Bob Behringer
(12/10)

Scott Stewart
(12/11)

Javier Jimenez
(12/11)

Colm Caulfield
(12/11)

FELLOWSHIP COMMITTEE

7 members, staggered 2-year terms

Chair

Ann Karagozian
(12/09)

Mory Gharib
(12/09)

Robert Krasny
(12/09)

Elizabeth Guazzelli
(12/10)

Jean-Marc Chomaz
(12/10)

Ari Glezer
(12/10)

Said Elghobashi
(12/10)

EXTERNAL AFFAIRS COMMITTEE

8 members, staggered 2-year terms

Chair

Mike Plesniak
(12/09)

Vice-Chair
Jon Freund
(12/10)

Jane Wang
(12/09)

John de Bruyn
(12/09)

Shiyi Chen
(12/09)

Gary Settles
(12/11)

Sivaram Gogineni
(12/11)

Aline Cotel
(12/11)

SELECTION FLUID DYNAMICS PRIZE COMMITTEE

9 members, staggered 2-year terms

Chair

Moshe Matalon
(12/09)

Vice-Chair

Robert Ecke
(12/09)

Charles Meneveau
(12/09)

Laurette Tuckerman
(12/09)

Detlef Lohse
(12/10)

Maria Pino Martin
(12/10)

Keiko Nomura
(12/10)

Julio Ottino
(12/10)

Wendy Zhang
(12/10)

ACRIVOS AWARD COMMITTEE

7 members, staggered 2-year terms

Chair

Rodney Fox
(12/09)

Vice-Chair

Patrice Le Gal
(12/10)

Thomas Peacock
(12/09)

Sanjiva Lele
(12/09)

Eckart Meiburg
(12/09)

S. Balachandar
(12/10)

Minami Yoda
(12/10)

FRENKIEL AWARD COMMITTEE

7 members, staggered 2-year terms

Chair

Omer Savas
(12/09)

Vice-Chair

Nicolas Hadjiconstantinou
(12/10)

Stavros Tavoularis
(12/09)

Jerzy Blawdziewicz
(12/09)

Stuart Dalziel
(12/10)

David Saintillan
(12/10)

Lance Collins
(12/10)

AD HOC COMMITTEE ON CYBER FLUID DYNAMICS

P.K. Yeung, **Chair**

James Brasseur
George Karniadakis
Beverley McKeon
Michael Plesniak

AD HOC COMMITTEE ON MEDIA AND PUBLIC RELATIONS

James Brasseur, **Chair**

James Duncan
Philip Marcus
Michael Plesniak
William Schultz
Alexander Smits

DIVISION WEBSITE DEVELOPMENT OFFICER

Ken Kiger

MEMBERSHIP COORDINATOR

Timothy Wei