

**Minutes of DFD Teleconference**  
Thursday, May 25<sup>th</sup>, 2006, 2:00 to 4:00 pm EDT

**Attendees:** Jerry Gollub, Howard Stone, Steve Pope, Lex Smits, Jim Duncan, Minami Yoda, John Foss, Gretar Tryggvason, Werner Dahm, Sandra Troian, Paul Steen, Monica Malouf, Rich Lueptow, Tony Ladd, Pat McMurtry, Sharath Girimaji, Ivan Marusic

**Decisions:**

- Keep the printed version of the APS Bulletin for the Tampa Bay meeting.
- It was decided to raise the registration fees by \$10 for all categories except students.

**Action Items:**

- Jim Duncan will send announcements out in September 2006 to encourage new nominations for the Fluid Dynamics Prize.
- Werner Dahm will explore methods of distributing the USNCTAM Report and report to the executive Committee at the November meeting of the Executive Committee.
- Tony Ladd will distribute a revised budget for the Tampa Bay meeting including changes discussed during the teleconference.
- The Program Committee is to develop guidelines for choosing mini-symposia topics.
- Monica Malouf will go to Minneapolis to meet with Ivan Marusic and assess the Minneapolis facilities as a site for the 2009 meeting. The Executive Committee will consider Monica's report and if interested ask Ivan for a more detailed proposal to be presented at the November, 2006 meeting.
- Steve Pope will discuss with Pat McMurtry broadening the scientific committee for the Salt Lake City meeting.
- Steve Pope will continue to discuss the possibility of meetings in Baltimore and Long Beach for 2010 and 2011 with the proposed local organizing committees.

**Minutes:**

- Opening Announcements. Howard Stone
  - The fluid dynamics part of the USNCTAM Report is finished. We have it in pdf format and in hardcopy. At this point, it has not been distributed to decision makers. John Foss said that the national committee may be planning to distribute it. Sandra said that the report has been circulated: it is on Efluids and she has seen it at professional societies. Werner Dahm, as chair of the External Affairs Committee is to look into ways to distribute the report.
- Treasurer's report. Jim Duncan
  - The Division is in excellent financial condition. Due to a net profit on the Chicago meeting and the interest that the Division earns from the APS, the Division's operating account has increased by approximately \$40,000 to a

total of about \$355,000. At this point, all expenses and income from the annual meetings have cleared. The American Physical Society recommends that each division's operating account have a balance equal to the typical cost of one of its Annual Meetings. Since the average expenses for the last three DFD meetings were about \$360,000, our account balance is within the APS guidelines.

- The accounts for the Acrivos Award and the Fluid Dynamics Prize (including the Laporte account) have both increased after paying all expenses for the year.
- Howard Stone added that the new Gallery of Fluid Motion book continues to bring money to the Division at this point in time.
- Report on the Chicago Meeting. Rich Lueptow. (see Appendix A)
  - About 1440 contributed papers (250 more than NJ and 330 more than Seattle).
  - 1800 people including exhibitors etc. There were 1619 regular registrants (25% from outside of the US, 40 attendees on travel grants). In Seattle, there were 1178 regular registrants.
  - 40% of registrants are students
  - The Gallery of Fluid Motions had 85 poster and 37 video entries (about 50% more than last year).
  - Net profit of \$20,000 due to large number of attendees.
  - Steve Pope asked about value of mini-symposia. Rich thought they were successful but didn't think they were important for attracting conference participants.
  - After the teleconference, Monica Malouf sent registration numbers for meetings from 1998 to 2005. This data is given in Appendix B.
- 2006 Tampa Bay Meeting. Tony Ladd
  - Discussed meeting budget.
    - Assuming 1450 registrants the meeting is projected to break even.
    - If we had 1250 registrants we would have a \$50,000 deficit if the registration fee does not change.
    - The cost of giving out the printed APS Bulletin was discussed. Jim Duncan got the following information from APS: \$180 per page with printed bulletin. \$156 per page without printed the bulletin. In Chicago, there were 338 pages so we would have saved about \$8,112 by not printing the bulletin. In Seattle, there were 255 pages so we would have saved \$6,120. It was decided to keep the printed bulletin at the Tampa meeting.
    - The idea of raising the registration rates for the meeting was discussed. It was decided to raise the registration fees by \$10 for all categories except students. The following data was supplied by Monica:

	2000	2001	2002	2003	2004	2005
<b>APS member</b>	250	260	270	270	290	300
<b>Non-member</b>	365	375	385	385	505*	520



the guidelines for choosing minisymposia would be developed by Steve Pope and the program committee, see Action Items above.

- Pat's budget is based partially on data from previous years. He decided to base the budget on 1200 registrants. Housing revenue of \$6 per room from hotel will be used to offset rent of Salt Palace, etc.
- 2008 San Antonio, Sharath Girimji
  - Sharath is following Rich Lueptow's guidelines.
  - The number of registrants to be used for budget estimates was discussed. It was decided to work with 1200 for now and update after the 2006 and 2007 meetings.
  - The idea of a student poster session was discussed. Rich Lueptow said that at the Chicago meeting 40% of attendees were students and that 70 to 80% of them gave talks. No action was taken but the committee seemed satisfied that there was substantial student participation at previous meetings.
  - Reception will held in the area of the hotel or the convention center. This is the top of the River Walk tourist area. Sharath and Monica will discuss this more.
- 2009 and beyond. Steve Pope
  - 2009 Ivan Marusic is offering to hold a meeting in Minneapolis.
    - Pre-proposal was submitted.
    - Minneapolis is hub for Northwest Airlines.
    - First choice for conference hotel and meeting space is Hyatt. Other hotels nearby.
    - Minneapolis Museum of Art is being considered for the reception.
    - Cold weather was discussed. Ivan pointed out that there is an extensive indoor skyway connecting the downtown area.
    - Monica will go to Minneapolis to look it over the area. She will give us her opinion and then the Executive Committee. If the Executive Committee is still interested after Monica's report, Ivan will be asked to have a detailed proposal for the November meeting of the Executive Committee.
  - 2010-2011
    - Long Beach is being proposed for 2010 by Andrzej Domaradzki.
    - Baltimore is being proposed for 2010 by Andrea Prosperetti.
    - Monica said that the Marriott facility at the Inner Harbor in Baltimore is a good facility for a meeting. She is not familiar with Long Beach facilities so needs to visit.
    - Sharath said that he went to an AIAA meeting recently at the Long Beach Convention Center and that it was an excellent facility.
    - Airport access was discussed and thought to be good at both Long Beach and Baltimore.
    - Jerry mentioned that we should make sure to have people outside of the main organizing university on the scientific committee for each meeting. Steve will discuss this issue with Pat McMurtry.

- Steve will ask Andrzej and Andrea for more detail on their proposals and ask if either of them can organize a meeting in 2011 instead of 2010.

## **Appendix A. Report on Chicago Meeting (Rich Lueptow)**

The November 2005 DFD meeting in Chicago was a great success. Highlights included three award lectures, eight invited lectures, 28 talks in five minisymposia, 1,410 additional contributed papers, and a reception at the Chicago Field Museum of Natural History. In honor of the World Year of Physics, the 100<sup>th</sup> anniversary of Einstein's "miracle year," the DFD meeting featured a special public lecture by Nobel laureate Leon Lederman on science education's "quiet crisis." His Saturday evening lecture was followed by a reception and exhibition of the 2005 Gallery of Fluid Motion.

Over 1,800 persons registered for the DFD meeting, making it the largest meeting in DFD history. About one-quarter of the registrants were affiliated with institutions from outside of the United States, mostly from Western Europe, but with significant contingents from East Asia, North and South America, and Australia. Forty persons, mostly young scientists or scientists from developing countries, were awarded travel grants enabling them to attend the meeting. The travel grant program was funded by the DFD, the Abdus Salam International Centre for Theoretical Physics, and Schlumberger Limited. Over 40% of the registrants were students, including 666 graduate students and 63 undergraduate students, demonstrating the strong support for the development of young scientists and engineers in the DFD community. Some of these students had the opportunity to have lunch with senior members of the fluid dynamics research community, a special event to further encourage their career development.

The technical sessions began early Sunday morning with the Awards Ceremony in the afternoon. The 2005 Fluid Dynamics Prize recipient was Ronald J. Adrian of Arizona State University "*For his advancement of experimental techniques and their integration into experiments that have led to new insight into complex flows.*" Professor Adrian presented the 2005 Otto Laporte Lecture on "Organization in Wall Turbulence." The 2005 Andreas Acrivos Dissertation Award was presented to Silas D. Alben of Harvard University, who worked under the direction of Michael J. Shelley, for his thesis entitled "Drag Reduction by Self-Similar Bending and a Transition to Forward Flight by a Symmetry-Breaking Instability." The 2005 Francois Frenkiel Award was presented to Roberto Verzicco of Politecnico di Bari, Italy for his Physics of Fluids paper "Effects of Nonperfect Thermal Sources in Turbulent Thermal Convection" [*Phys Fluids* 16, 1965 (2004)]. Several new DFD Fellows were named at the awards ceremony. They include Nadine N. Aubry, John Kelly Eaton, Jean Pierre Hulin, Martin R. Maxey, Eckart Heinz Meiburg, Wallace Kendall Melville, Thomas Mullin, Timothy John Pedley, Sandra Marina Troian, and Stephane Zaleski. Sunday evening was topped off with the conference reception in the expansive Stanley Field Hall at the Field Museum, where attendees could sample cuisine from Chicago's neighborhoods while browsing the many biological and anthropological exhibits, including Sue, the world's largest, most complete, and best preserved Tyrannosaurus Rex.

The remainder of the meeting included outstanding invited lectures by Howard Baum, Henk Dijkstra, James Grotberg, Elisabeth Guazzelli, Nicolas Hadjiconstantinou, Charles Meneveau, Charles Williamson, and Grae Worster. Most of the invited and award lectures will be available on the APS/DFD web site ([www.aps.org/units/dfd](http://www.aps.org/units/dfd)). In addition, the meeting included five minisymposia: *Fluid Transport in Nanotubes and Nanochannels*, *Foams: Linking the Mechanics of Fluids and Solids*, *Japan-US Minisymposium on Bio-Fluid Dynamics*, *Polymer Flow in Capillary*

*and Simple Shear: From Interfacial Slip to Constitutive Discontinuity, and Reduced-Order Modeling for Feedback Flow Control.*

The contributed sessions covered a wide range of topics. Bio-fluid dynamics sessions with session titles ranging from "Hemodynamics" to "Creep, Crawl, Slither, Slide" have grown in popularity from previous years. Other areas with increased attention compared to a few years ago include granular flows and microfluidics. Of course, there were many sessions in traditional areas of fluid dynamics research including turbulence, computational fluid dynamics, boundary layer flows, and many others.

The 23rd Annual Gallery of Fluid Motion included 85 poster entries and 37 video entries presenting research from the United States and many foreign countries. This year's entries exhibited an outstanding display of experimental and numerical results that combined artistic beauty with physical insight for a wide range of fluid mechanics phenomena. A panel of distinguished experts in the fluid dynamics community served as judges for the poster and video entries. Highlights from the winning poster and video entries will be published in a special Gallery of Fluid Motion article in the September 2006 issue of *Physics of Fluids* as well as being posted on the *Physics of Fluids* web site.

The winning poster entries were: *Vortex Interaction with a Moving Sphere*, Yann Jouanne and James J. Allen; *The Dynamics of a Flexible Loop in a High-Speed Flow*, Kathleen Mareck, Sunghwan Jung, Jun Zhang, and Michael Shelley; *Air Cavity Formation in the Wake of a Spinning Sphere Impacting a Free Surface*, Tadd Truscott and Alexandra H. Techet; *Flow Induced by Jellyfish*, Seiji Ichikawa, Osamu Mochizuki, and Yusuke Yazaki; *Laboratory Images of Breaking Internal Wave*, Erin L. Hult, Cary D. Troy, and Jeffrey R. Koseff; *Visualization of Steady Streaming at Moderate Reynolds Numbers*, Charlotte W. Kotas, Minami Yoda, and Peter H. Rogers; *Orbital Motion Of Bouncing Drops*, Suzie Protiere and Yves Couder; *From Turbulent Mixing to Gravity Currents in Tilted Tubes*, T. S'eon, J-P. Hulin, D. Salin, B. Perrin, and E. J. Hinch; *Impact, Puncturing and the Self-Healing of Soap Films*, Laurent Courbin and Howard A. Stone.

The video winners were: *Dancing Droplets onto Liquid Surfaces*, Nicolas Vandewalle, Denis Terwagne, Karen Mulleners, Tristan Gilet, and Stephane Dorbolo; *Water Bell and Sheet Instabilities*, Jeffrey M. Aristoff, Chad E. Lieberman, Erica Y. Chan, and John W. M. Bush; *Folding of Viscous Threads in Microfluidics*, Thomas Cubaud and Thomas G. Mason; *Crown Breakup by a Thousand Holes*, S. T. Thoroddsen, T. G. Etoh, and K. Takehara.

The local organizing committee for the meeting was composed of representatives from the Illinois Institute of Technology, Northwestern University, and the University of Illinois at Urbana-Champaign.

**Appendix B. Meeting Registration Data 1998 – 2005. (Monica Malouf)**

<u>INCOME</u>	Chicago	Seattle	NJ	DC	San Diego	DC	New O.	Phili.
	2005	2004	2003	2002	2001	2000	1999	1998
<b>Registration</b>								
Early-APS Member	597	467	459	394	418	387	441	283
Early-Non Member	97	97	99	75	61	73	90	57
Early Student	507	339	388	274	277	278	255	213
Other		2	11					
Early Retired	14	16	7	8				
Late-APS Member	175	115	117	129	142	156	114	236
Late-Non Member	66	53	37	33	46	38	43	50
Late Student	159	88	107	94	103	130	72	156
Late Retired	4	1	1	1				
Undergrads - 1 day		21		3				
Undergrads - 2 days		26		4				
Undergrads - 3 days		19		17				
Undergrads	63							
Comps	125		103	62				
<b>TOTAL</b>	<b>1,807</b>	<b>1,244</b>	<b>1,329</b>	<b>1,094</b>	<b>1,047</b>	<b>1,062</b>	<b>1,015</b>	<b>995</b>