

**Minutes, Teleconference of the APS DFD Executive Committee, May 12, 2008, 12:30-2:15  
p.m. EDT  
(prepared by Ellen Longmire)**

**Participants:** Smits, Pope, Marcus, Lasheras, Brasseur, Hertzberg, Steen, Yoda, Maxey, Tuckerman, Hosoi, Girimaji, Mahesh, Domaradzki, Malouf, Holland, Longmire, Duncan

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The meeting was opened by Lex Smits, DFD Chair.

1. Minutes from the November, 2007 ExCom meeting were approved and will be posted on the DFD website.

2. Future DFD Annual Meetings

2010, Long Beach, Julian Andrzej Domaradzki (see Appendix A)

Contracts have been signed with the convention center and two hotels (Hyatt and Westin), and additional contracts are under consideration with Renaissance, Courtyard and Best Western. They are still considering potential reception sites, and will know more by November about the Queen Mary as a potential site.

2007, Salt Lake City, Final Report, Phil Marcus (see Appendix B)

- The meeting generated a profit of \$31,725. Attendance was 1570, including 596 graduate and 53 undergraduate students. A summary of meeting activities, Gallery of Fluid Motion prize winners, and budget items is included in Appendix B.
- The ExCom expressed great appreciation toward Pat McMurtry's efforts at organizing and running this successful meeting.

2008, San Antonio, Sharath Girimaji (see Appendix C)

- The meeting budget as presented was approved by the ExCom with the exception that student registration would be increased by \$5 while regular registrations would be increased by \$10 over last year's rates.  
The meeting website is up and running, and LOC members have been assigned various responsibilities. The reception will be held at Sunset Station which is located nearby the conference hotels.
- The local organizers are working toward an efficient video submission and compilation process both for the Gallery of Fluid Motion and for a separate Video Gallery.
- Jean Hertzberg mentioned that a fluids education workshop will take place on Saturday, and funds have been requested from NSF for this purpose.
- Sharath, Frank Chambers, and Harry Swinney have worked on fund raising (~\$15,000 including \$8000 from Schlumberger) to support travel by bus to the meeting of 30-40 Mexican scientists and students.
- Five minisymposia will take place at the meeting.

**Action items:** Bill Schultz needs to be contacted about the NSF luncheon for tenure-track faculty. Sharath also plans to invite representatives from AFOSR, ONR (John Schmisser, Pat Purtell, Ron Joslin) to attend and possibly make presentations.

2009, Minneapolis, Krishnan Mahesh (see Appendix D)

- A contract has been signed for the Hilton as meeting venue, and a block of rooms (~600 on main nights) has been reserved there. They are planning for 17-20 parallel sessions. Peggy Holland visits May 20, 2008 to help evaluate reception locations and additional hotel accommodations.
- Over the summer, roles will be determined for the members of the organizing committee. Also, a postcard will be developed to insert in the giveaway packet in San Antonio, and the web site will be set up. Mahesh was urged to communicate with and shadow Sharath during the San Antonio meeting in order to gain further insight.

3. Treasurer's report, Ellen Longmire (see Appendix E)

The operating account balance is ~\$429,000 and has been rising fairly steadily over the past 5 years. This amount slightly exceeds the total cost of one annual meeting. Of the past six meetings, five have yielded a profit. The profit (or loss) has fallen within a band of +/- \$30,000. The award account balances (see table in appended report) are also rising slowly.

4. Report on proposal for a new Division Award, Lex Smits (see Appendix F)

Lex Smits proposed initiation of a new DFD award. The ExCom voted in favor of working toward establishing such an award and asking the Fluid Dynamics Prize Committee to generate a proposal for the November ExCom meeting. Issues for consideration include the purpose of the award, how it will be funded, and how it will be named. It was noted that it will be important to distinguish this award from the Batchelor Prize.

5. Ad Hoc Committee on Media and Press Relations, Jim Brasseur (see Appendix G)

Jim Brasseur presented a proposal by this committee to engage AIP Media & Government Relations Division to provide media services for the 2008 DFD meeting. Jim Brasseur, Jim Duncan (chairing local Media & Public Relations in San Antonio), and Jason Bardi (AIP) will coordinate the MPR efforts with the goals of promoting the 2008 meeting as well as establishing a basis for efforts at future meetings. Activities will include generating and disseminating news releases, designing and implementing a Virtual Press Room, and generating media attention for the Gallery of Fluid Motion. Also, AIP will track news coverage of the meeting and report back after the meeting to help assess the results of these efforts. The detailed proposal and timeline are included in Appendix G.

The ExCom approved the use of \$15,000 in DFD funds to support the proposed activities. Also, the ExCom agreed with Steve Pope's suggestion that an expected donation from AIP of ~\$10,000 could also be applied to these efforts.

6. Proposed New Ad Hoc Committee on Cyberfluids, Phil Marcus

This ad hoc committee, which was discussed previously at the Nov 2008 ExCom meeting, will work on behalf of the DFD membership to recognize and promote opportunities for fluid dynamics activities in super computing. The committee will be chaired by P.K. Yeung who will work on choosing members. P.K. has funds of ~\$8000 remaining from the 2007 NSF Cybercomputing Workshop to use toward committee activities.

**Action Item:** The ExCom asked that P.K. draft a mission statement for the committee, consider contacting DCOMP to sponsor a March focus session, and to report on progress at the November ExCom meeting.

#### 7. Brief reports from officers and committees

##### Division Councillor, Jim Brasseur (see Appendix H)

- DFD is the fourth largest division in APS with a current membership of 2735. Membership statistics are included in Appendix H.
- A summary of APS Council activities and status reports from the APS Study Group on Energy Efficiency and Federal appropriations are included in Appendix H.

##### Program Committee, Phil Marcus (see Appendix I)

Five minisymposia were approved for the November DFD meeting. DFD currently is allowed 2.5 sessions at the APS March 2009 meeting.

##### Fellowship Committee, Juan Lasheras

It was noted that the web set up for fellowship nominations has problems.

**Action Item:** Lex Smits proposed to follow up on this with Alan Chodos of APS.

##### Publications and Media Committee, Jean Hertzberg (see Appendix J)

Jean reported on a committee telecon that discussed the archiving process for the Gallery of Fluid Motion (GFM). The committee was concerned in particular that the submission process for the Gallery be relatively easy for both the submitters and the local organizing committee who must compile the videos. It was thought that submissions and archiving might be handled in separate ways.

**Action Item:** Jim Duncan and Stathis Michalides (local organizer) will work to sort out any issues with the submission process.

The committee also proposed a number of activities related to education and outreach which included solicitation of articles for APS print media (E. Lauga, J. Bush), facilitating the use of GFM entries on Physics Central website (B. Homsey, J. Duncan), organizing the high school teacher workshop at San Antonio (K. Flack), organizing fluids physics modules for K12 use (J. Hertzberg). (see Appendix J).

##### External Affairs Committee, Ellen Longmire (see Appendix K)

- The ExCom approved the use of \$15,000 in DFD funds to support the travel grant program.
- T-shirts remaining from the 2007 meeting will be displayed and offered for sale in a prominent location at the San Antonio meeting.

##### Nominating and Awards Committees, Lex Smits

The committees are on track to complete their assigned tasks.

The meeting was closed by Lex Smits.

## Appendix A

**Report from the 2010 organizing committee**  
for the Executive Committee Meeting, May 12, 2008  
Prepared by Julian Andrzej Domaradzki (USC)

### **Local Organizing Committee:**

#### **Twelve from University of Southern California :**

Domaradzki (Chair)  
Blackwelder  
Campbell  
Kanso  
Muntz  
Newton  
Phares  
Pottebaum  
Redekopp  
Ronney  
Sadhal  
Spedding

#### **Four from University of California Los Angeles:**

Eldredge  
Karagozian  
Kim  
Kavehpour

#### **Six from California Institute of Technology:**

Brady  
Colonus  
Dabiri  
Hunt  
Leonard  
McKeon

#### **One from California State University Long Beach:**

Rahai

The Local Organizing Committee held its first (and so far the only meeting) a year ago, June 15, 2007.

## **Convention Center and Hotels:**

Long Beach Convention Center booked at the total price of \$33,040 and the deposit of \$10,680 paid on May 1, 2008.

Contracts signed with the following hotels (price and max room blocks in parentheses): Hyatt (\$189, 375 rooms), Westin (\$169, 125 rooms).

Contract ready with Renaissance (\$169, 150 rooms) but further negotiations required because of an unacceptable cancellation clause per Meetings and More.

There is also work in progress on contracts with Courtyard (price TBD, 100 rooms) and Best Western (\$139, 60 rooms).

Overall, there are total of 16 hotels/motels in the downtown area within a walking distance of the LBCC (or by free local shuttle) with a total of 2,984 rooms.

## **Sunday-night reception:**

The potential Sunday receptions venues were discussed at the Local Organizing Committee meeting: **Hyatt, Aquarium of the Pacific, Queen Mary**. First two are within walking distance of all hotels. Despite that there was a rather strong support for the Queen Mary as being the most unique among options considered, even though it requires extra transportation arrangements. However, there are some questions of the new ownership and plans for changes in the surrounding area; these will be investigated to see if and how they would impact the APS reception.

Long Beach is known for jazz music and clubs and hiring some local jazz band(s) would be an attractive entertainment option for the reception.

## Appendix B

### Highlights of the 60th Annual DFD Meeting Salt Lake City UT, November 18-20, 2007

The 2007 DFD meeting was held at the Salt Palace Convention Center in Salt Lake City, Utah. Highlights included three award lectures, eight invited lectures, and approximately 1300 additional contributed papers. There were 42 poster entries, 39 video entries, and 9 educational video submitted to the Gallery of Fluid Motion. A total of 1570 people registered for the meeting. This included 53 undergraduates and 596 graduate students. 31% of the registrants were affiliated with institutions from outside of the United States, from a total of 39 countries..

Invited lectures were presented by John Bush, Olivier Pouliquen, James Wallace, Timothy Pedley, Jane Wang, Gary Parker, Juan G. Santiago, and K.R. Sreenivassen.. 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 mini-symposia: *Incorporating Biology in a Fluids Curriculum*, *Lagrangian Dynamics in Turbulence*, *Fluids Demonstrations and Instructional Laboratories*, *Turbulence Simulations and Advanced Cyberinfrastructure*, and *Deformable Particle Suspensions and Solutions*.

A total of 147 contributed sessions covered a wide range of topics over the whole range of fluid dynamics. The 24th Annual Gallery of Fluid Motion included 44 poster entries and 39 video entries presenting research from the United States and many foreign countries. A new video category, Educational Videos, was introduced this year with 9 videos submitted. Highlights from the winning poster and video entries will be published in a special Gallery of Fluid Motion article in the September 2008 issue of Physics of Fluids as well as being posted on the Physics of Fluids web site.

The video gallery also included entries from local high school students. Between March, 2007 and September, 2007, members of the organizing committee made over 20 visits to local high schools to discuss science, engineering, and fluid mechanics. The goal of the visits was to make students and teachers aware of fluid mechanics as an important branch of science and engineering, and to get the students and teachers involved in observing fluid flow through artistic interpretation through photography and video.

## DFD 2007 Awards, Prizes, New Fellows, and Gallery Winners

### 2007 FLUID DYNAMICS PRIZE

Geunter Ahlers, of the University of California at Santa Barbara is the recipient of the 2007 Fluid Dynamics Prize, which recognizes major contributions of fundamental fluid dynamics made during a career of outstanding work. The citation reads: *“For pioneering experimental work on fluid instabilities, low-dimensional chaos, pattern formation, and turbulent Rayleigh-Bénard convection.”*

### FRANCOIS FRENKIEL AWARD

Re'em Sari from the Californial Institute of Technology was the recipient of the François Frenkiel Award, which recognizes significant contributions to fluid mechanics that have been published in *Physics of Fluids* during the preceding year by young investigators. The award citation reads *“For the elegant derivation of similarity solutions describing the propagation of ultrarelativistic shock waves.”*

### ANDREAS ACRIVOS DISSERTATION AWARD

David Saintillan of the Courant Institute of mathematical Sciences received the Andreas Acrivos Dissertation Award for his thesis entitled Sciences *“Collective Dynamics in Dispersions of Anisotropic and Deformable Particles.”*

The award recognizes an exceptional young scientist for original, outstanding doctoral thesis work in fluid dynamics done in the United States. Dr. Saintillan did his doctoral thesis work at Stanford University under the direction of Eric S.G. Shaqfeh and Eric Parve.

### New DFD Fellows

Each year the number of new Fellows is limited to be no more than ½ of 1% of the membership. The new 2007 Fellows are:

**Lance Collins**, *for new physical understandings of the dynamics of aerosol particles, droplets, polymer molecules, and reacting gases in*

*turbulence through novel direct numerical simulations and insightful theories.*

**Rodney Fox**, *for ground-breaking contributions to the field of turbulent reacting flows.*

**Sharath Girimaji**, *for important contributions to the fundamental understanding of elementary turbulence processes; and, based on this improved knowledge, for the development of widely-used engineering closure models for turbulence and turbulent mixing.*

**Peyman Givi**, *for pioneering computational research on turbulent reactive flows, and especially for the development of the filtered density function methodology.*

**Ari Glezer**, *for in-depth insight into flow structure through innovative experiments, and the creation of fundamentally new approaches to flow control, leading to the dramatic alteration of the underlying physics.*

**Yoshifumi Kimura**, *for contributions to the development of our understanding of turbulent flows and the dispersion of scalars in a variety of geophysical settings through the numerical simulations and a comparison of these to theory and experiment.*

**Robert Krasny**, *for his many achievements in advancing particle methods and tree-code algorithms to allow exceptionally precise computations of vortex dynamics, and his insightful use of the resulting methods to increase the fundamental understanding of regular and chaotic phenomena in fluid flows.*

**Ellen Longmire**, *for innovative experiments in turbulent and particle-laden flows, and the development of new and improved flow diagnostic techniques.*

**Gareth McKinley**, *for the development of methods for characterization of the rheology of complex liquids and improved understanding of elastic effects and instabilities.*

**Michael Shelley**, *for his broad-ranging contributions to computational fluid mechanics, including boundary integral techniques for interface dynamics, singularity formation in topological transitions, and fluid-body interactions.*



**Stavros Tavoularis**, *for contributions to turbulence, turbulent mixing, vortex dynamics, aerodynamics, thermo-hydraulics, bio-fluid dynamics, and design of flow apparatus and instrumentation. Also, for contributions to education in fluid dynamics and for promoting international collaboration and understanding.*

**Mark Glauser**, *for his innovative use of multi-point low-dimensional methods to elucidate key physics associated with time dependent flow phenomena for flow control applications in turbulent jets, shear layers and separated flows.*

**Pushpendra Singh**, *for outstanding contributions to the development of efficient algorithms for the direct numerical simulations (DNS) of multiphase fluids, and for using the DNS technique in conjunction with experiments as a tool for understanding the physics of a broad range of multiphase systems.*

## Winners of the 2006 Gallery of Fluid Motion

### Posters

Visualizations of the Transition to Turbulence in an Oscillatory Separated Flow. Miguel Canals and Geno Pawlak, University of Hawaii at Manoa

The Life of a Water-Entry Cavity at Low Bond Number. Jeffrey M. Aristoff, Tadd T. Truscott, John W. M. Bush and Alexandra H. Techet; Massachusetts Institute of Technology

Helical Instability of a Rotating Viscous Liquid jet. J. P. Kubitschek and P. D. Weidman; University of Colorado, Boulder

Air Entrainment by a Viscous Jet Impacting a Bath. Etienne Reyssat and David Quéré PMMH, ESPCI, Paris, France; Elise Lorenceau LPMDI, Marne la Vallée, France; Frédéric Restagno LPS, Orsay, France

Water Bells Formed on the Underside of a Horizontal Plate. Eleanor C. Button and John E. Sader, University of Melbourne; Ben Dwyer, Claire Jenkins and Graeme Jameson, University of Newcastle

Fractal Kelvin-Helmholtz Break-ups. J. Fontane and Joly Ensica, Toulouse, France; J.N. Reinaud University of St-Andrews, UK

## Videos

DPIV of Mammalian Swimming. Paul Legac and Timothy Wei, Rensselaer Polytechnic Institute; Frank Fish, West Chester University; Terrie Williams, University of Santa Cruz; Russell Mark and Sean Hutchison, USA  
Swimming/King Aquatics

Break Up of the Tail of a Bubble in a Non Newtonian Fluid. Enrique Soto, Roberto Zenit and Octavio Manero, Universidad Nacional Autonoma de Mexico

"Black Hole" Nucleation in a Splash of Milk. Laurent Courbin, James C. Bird and Howard A. Stone, Harvard University; Andrew Belmonte, Penn State University

Spilling Breakers and Surfactants. Xinan Liu, James Diorio and James H. Duncan, University of Maryland

Helical Instability of a Rotating Viscous Liquid Jet. J. P. Kubitschek and P. D. Weidman; University of Colorado, Boulder

Budget APSDFD 2007

Actual

Projected based on paid attendees 1320

Income

	Projected based on paid attendees		Actual		Total #
	Number	Fee	Number	Fee	
Registration					
Early APS	486	\$320.00	576	\$320.00	
Early non-APS	79	\$545.00	98	\$545.00	
Early Student	413	\$150.00	495	\$150.00	
Early Retired	11	\$150.00	15	\$150.00	
x-tra Reception tickets			51	\$75.00	
retired special rate			1	\$135.00	
Grad student 1- days			1	\$70.00	
one-day member			1	\$135.00	
one-day nonmember			2	\$210.00	
Late APS	143	\$380.00	96	\$380.00	
Late non-APS	54	\$600.00	34	\$600.00	
Late Student	129	\$180.00	101	\$180.00	
Late Retired	3	\$180.00	3	\$180.00	
Travel Grantee Reg (UG)				\$30.00	
Travel Grantee Reg (Grad)	\$0.00	\$0.00	7	\$150.00	
Complimentary Registration			87	\$0.00	(Includes registration staff, vendors, travel grants, invited speakers, committee, student volunteers)
Undergrad Registration (days/number)			53	150	\$10.00
Registration Income:		\$372,675.00		\$396,995.00	\$396,995.00
Cancellation Fees					\$650.00
Housing Income	Room Nights	Income/rm	Room Night	Income/rm	
	2178	\$6.00	2510	\$6.00	\$14,148.00 (exact reimbursement)
NSF Workshop Grant					\$2,690.00
Booths + bag inserts	Number	Fee	Number	Fee	
	12	\$1,800.00	12	varies	\$18,225.00

Minus Membership	Number	Cost		Number	Cost	
Full membership	133	\$111.00	\$14,763.00	107	\$111.00	\$11,877.00
Student membership	350	\$10.00	\$3,500.00	229	\$10.00	\$2,290.00
Net Income:			\$389,080.00			\$418,541.00
Expenses:						
Salt Palace Rental			\$22,000.00			\$20,178.00
Attorney Fees			\$1,000.00			\$1,000.00
Conference Services and materials			\$1,500.00			
Telephone, internet, programming						\$1,560.00
Wireless internet for attendees			\$0.00			\$1,500.00
Signage/Furniture/Booths			\$12,000.00			\$10,609.45
additional signs						\$540.00
additional Design work						\$1,945.06
Registration			\$38,094.85			\$31,972.88
Credit Card Fees						\$9,795.74
Video Gallery A/V (Included in AV and timing)			\$0.00			\$0.00
A/V and Timing			\$61,000.00			\$62,800.70
			\$0.00			
Highschool Program			\$2,000.00			
t-shirts for HS students						\$1,067.80
travel						\$96.12
Hotel (invited Speakers/Staff)			\$2,000.00			\$337.66
Food and Beverage						
Sorters Meeting						\$163.04
Breaks			\$55,836.00			\$59,203.29
Exec Dinner			\$1,800.00			\$2,605.49
NSF Lunch						\$1,590.84
Bag Stuffing			\$0.00			\$191.52
Water Station						\$621.00
Student luncheon			\$2,800.00			\$2,232.72

Reception	\$65,340.00	\$64,914.00	
Box lunches/Breakfast (staff)	\$1,250.00	\$1,012.44	
Reception Entertainment	\$4,000.00		
Performance Fee		\$4,000.00	
Fire permit		\$195.00	
Pyrotechnician fee		\$450.00	
Generator		\$263.88	
Printing and Promotion			
BAPS	\$55,000.00	\$47,530.00	
Synoptic	\$9,500.00	\$8,720.00	1560 (layout/editing) + 7160 p
Bags	\$3,000.00	\$2,964.22	
Materials for bag insert		\$233.60	
Postcards, posters	\$1,500.00	\$0.00	(Donated by U of U)
Meeting management:			
Meetings and More 2007 meeting fee	\$35,000.00	\$35,000.00	
Additional Fee for editing		\$660.00	(For Peggy's Editing work)
Peggy's expense's for Salt Lake		\$205.86	
Peggy's airfare to Salt Lake		\$419.80	
Monica's meeting expenses and airfare for Salt Lake		\$906.51	
2008-2010 meeting costs charged to 2007	\$6,000.00	\$1,428.70	(San Antonio Trip by Peggy)
		\$118.73	Extra San Antonia Expenses
		\$909.90	(Long Beach Trip MONICA, RIC
Web site and signage design	\$3,500.00	\$2,500.00	
Promotional mailing	\$0.00	\$0.00	(Donated by BYU)
Security (60 hours at \$17/hour)	\$1,020.00	\$1,551.25	
Paramedic (30 hours at \$18/hr)	\$540.00	\$682.75	
Miscellaneous	\$3,500.00		
University account audit fees		\$10.00	
Tips to AV, Food Service, Convention Center		\$300.00	
Office Supplies (Office Max)		\$95.23	
Home depot supplies		\$44.26	
Badge material for Volunteers		\$8.86	

DVD Mailing Material		\$20.52	
Printer for Sorting Meeting		\$129.99	
DFD t-shirt receiving		\$0.00	\$295 included in GES
Police		\$104.00	
Travel		\$735.16	Travel and milage, fire perf. sta
Coat rack and staff		\$690.00	

Total Expenses:	\$389,180.85	\$386,815.97
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Net	(\$100.85)	\$31,725.03
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## Appendix C

### Report from 2008 organizing committee

Sharath Girimaji (Texas A&M)

#### **LOC member responsibilities:**

*Abstract Sorting:* Girimaji, Saric, Karpetis, Bowersox, Duggleby, Daripa, Swinney, Clemens

*Mexican visitors committee:* Swinney, Chambers and Girimaji

*Video Gallery:* Karpetis

*Gallery of Fluid Motion:* Michaelides

*Graduate Student Luncheon:* Krueger (?) and Yu

*Audio-Video:* Duggleby (Timing program of Tim Colonius of UCSD)

*Synoptic:* Girimaji with Meredith Myers from Utah

#### **Meeting website:**

Up and running at [dfd2008.tamu.edu](http://dfd2008.tamu.edu)

#### **Budget**

An excel file with latest budget is included. The budget is prepared on the basis of about 1425 paid registrants. The registration fee is about \$10 more than SLC. As the meetings get bigger, we are forced to go to convention centers rather than single hotels. The cost of doing business with convention centers is generally high as we have to pay for all the meeting space. I will discuss individual items in the budget.

#### **Mexican Scientist APS Bus**

Chambers and Swinney have raised \$15K for bringing about 30 Mexican scientists and students to the APS meeting.

#### **Sunday-night reception.**

The reception will be held at *Sunset Station*, a special events center located next to the Alamodome. The *Sunset Station* is about six blocks from the hotels. It is within easy walking distance from the hotels. None the less, we are providing 5 buses that will run continuously between the hotels and the *Sunset Station*.

## **Sorting Categories**

Based on Pat's recommendations, we would like to make modest changes. Provide only two categories in Bio-Fluids: General and fluid-structure interactions.

## **Mini-Symposia**

Up to 8 can be accommodated

## **Fellows and other awards**

How about moving that to reception and add a little more ceremony? This will also cut-down the length of Sunday meeting time.



APS 2008 Budget				
	Projected based on paid attendee of:		1400	
Income				
Registration	Number	Fee	Projected Cost	
Early APS	517	\$330		
Early non-APS	84	\$555		
Early Student	438	\$160		
Early Retired	12	\$155		
Late APS	151	\$390		
Late non-APS	57	\$610		
Late Student	137	\$190		
Late Retired	3	\$185		
total	1400			
Registration Income:			\$409,573	
Housing Income	Room Nights	Income/rm		
	2178	\$6	\$13,068	Conservative...could increase up to \$2000
Bag Insert			\$600	
Booths	Number	Fee		
	12	\$1,800	\$21,600	
Minus Membership	Number	Cost		
Full membership	141	\$111	\$15,633	
Student membership	350	\$10	\$3,500	
<b>Net Income:</b>			<b>\$425,108</b>	
Expenses:				
San Antonio Convention Center Rental			\$21,000	actual is 20,000
Attorney Fees			N/A	
Conference Services and materials (internet and telephone access)			\$3,300	
Signage/Furniture/Booths			\$12,000	
Additional Design Work			\$800	
Registration			\$34,000	

Credit Card Fees			\$10,000			
Registration Travel Expenses for Management			\$2,500			
Video Gallery A/V (Included in AV and timing)			\$0			
A/V and Timing			\$70,000			
Highschool Program			\$0			
Hotel (invited Speakers/Staff)			\$3,000	3 nights this year		
Food and Beverage						
Breaks		\$55.00	\$69,300			
Exec Dinner			\$3,200	prices + \$13 pp and AV prices increased (27-29 people)		
Student luncheon		\$22.00	\$2,772			
Reception		\$55.00	\$69,300			
Reception Entertainment			\$1,000			
Buses to Reception			\$3,500			
NSF Lunch			\$0	check to see if reimbursed & about NSF Grant?		
Box lunches/Breakfast (staff and local committee)			\$2,000			
Water			\$1,000			
Printing and Promotion						
BAPS			\$50,000			
Reception Card			\$800	was not done last year..done in Tampa		
Synoptic			\$9,500			
Bags			\$4,000			
Postcards, posters			\$600			
Meeting management:						
Meetings and More 2007 meeting fee			\$40,500			
Direct Meeting Expenses (travel & meals)			\$2,100			
2009-2010 meeting costs charged to 2008			\$2,000			
Web site and signage design			\$1,500			
Promotional mailing			\$0			
Security			\$2,000			
Paramedic			\$700			
Sorters Meeting			\$350			
Miscellaneous			\$2,000			
(tips, office supplies...)						
<b>Total Expenses:</b>			<b>\$424,722</b>			
Net			\$385.71			

## Appendix D

### Report from Organizing Committee, APS DFD 2009 meeting

May 12, 2008

Krishnan Mahesh  
Dept. Aerospace Engineering and Mechanics  
University of Minnesota

#### Organizing committee:

Ellen Longmire (AEM), Graham Candler (AEM), Tom Schwartzentruber (AEM), Dan Joseph (AEM), Krishnan Mahesh (AEM), Roger Arndt (SAFL), Fernando Porte-Agel (SAFL), Kimberly Hill (SAFL), Fotis Sotiropoulos (SAFL), Satish Kumar (ChemE), Mihailo Jovanovic (EE), Paul Strykowski (ME), and Sean Garrick (ME).

#### Meeting Venue:

**Hilton Minneapolis** in downtown Minneapolis. We have planned for 17 parallel sessions, expandable to 20. The meeting rooms vary in size from 100 – 600 people. The entire meeting will be hosted on the second and third floors of the Hilton. The floors are connected by stairs, elevator and escalator. The Hilton Ballroom will host the Awards Ceremony.

A contract has been signed with the Hilton. The following block of rooms will be reserved for the meeting.

DAY	DATE	ROOMS
Thurs.	November 19, 2009	10
Fri.	November 20, 2009	55
Sat.	November 21, 2009	600
Sun.	November 22, 2009	640
Mon.	November 23, 2009	600
Tues.	November 24, 2009	50
Wed.	November 25, 2009	0
<b>TOTAL BLOCK</b>		<b>1955</b>

Room rates: \$148 + 13.15% state tax per night for one or two people in a room.  
Each additional person, age 18 and older, will be charged \$20 per person per night.

The following hotels are within walking distance of the Hilton, in case additional accommodation is needed:

Holiday Inn Express Hotel and Suites	0.1 miles
Doubletree Guest Suites	0.2 miles
Residence Inn by Marriot	0.2 miles
The Marquette	0.2 miles

#### Reception:

We are considering three venues: Minneapolis Convention Center, Walker Art Center and the Historic Train Depot. Will make final decision following Peggy Holland's visit on May 20, 2008.

Immediate action items:

Peggy Holland visit on May 20, 2008 to evaluate reception locations & additional accommodation (Holiday Inn, Doubletree). Will also meet representative of Minneapolis Visitors & Convention Bureau.

Define roles for organizing committee members.

Publicity for distribution at 2008 meeting.

Web page.

## Appendix E

### DFD Treasurer's Report, Ellen Longmire (Latest data from 3/31/08 budgets.)

#### Award Account Balances

<b>Award</b>	<b>3/31/08</b>	<b>3/31/07</b>	<b>3/31/06</b>	<b>3/31/05</b>
Acrivos	\$74,404	\$71,595	\$68,755	65,413
Fluid Dynamics Prize	\$137,911	138,692	140,575	141,320
Laporte	137,822	128,534	119,870	111,787
FDP + Laporte	275,733	267,226	260,445	253,107

#### Operating Account Balance

<b>Account</b>	<b>3/31/08</b>	<b>3/31/07</b>	<b>3/31/06</b>	<b>3/31/05</b>	<b>3/31/04</b>
Operating	\$429,015	\$360,069	355,314	313,682	265,085

The current balance includes \$36,000 that has been spent in deposits on future meetings, so that only \$393,000 is available for expenditure. The American Physical Society recommends that each division's operating account have a balance equal to the typical of cost of one its Annual Meetings. Based on expenses for recent meetings, our account balance is clearly within these guidelines.

#### Recent Meetings

<b>Meeting</b>	<b>Income</b>	<b>Expense</b>	<b>Profit (loss)</b>
Salt Lake (2007)	418,541	386,815	31,725
Tampa (2006)	380,700	353,190	27,510
Chicago (2005)	441,087	421,913	19,174
Seattle (2004)	336,979	308,922	28,057
NJ (2003)	308,860	329,396	(20,536)
Dallas (2002)	258,420	249,035	9,385

## Appendix F

Report on the proposed new DFD award.

Since DFD eliminated the Otto Laporte award in 2004, our division has only had the Fluid Dynamics Prize to recognize the contributions made by our members, not counting our dissertation (Acrivos) or best paper (Frenkiel) awards. In recent years, our membership has grown significantly: from 1596 in 2004 to 2735 in 2008 (from 3.69% to 5.91% of the APS membership). By comparison, the Division of Atomic, Molecular and Optical Physics (with 6.12% of the membership) gives out four prizes annually (in addition to a dissertation award). Hence I believe it highly appropriate and timely to establish an additional DFD Award.

There are three main issues: purpose; funding; and naming. I offer the following proposals.

Purpose.

Steve Pope suggested that the award be "For outstanding research contributions [by an individual] in fluid dynamics made within the last five years." The 5-yr qualification: (a) ensures that the work recognized is modern (which is certainly a plus if there is to be an award lecture at the annual meeting); (b) makes clear that it is not a life-time award, and distinguishes it from the FD prize; (c) most likely biases the award to younger researchers. I agree with this general proposal, except perhaps to relax the 5-year rule to a 10-year rule.

Funding.

As the Treasurer's report makes clear, we have more than adequate funds to guard against a disaster with our annual meeting. I believe we can establish a \$100K endowment from general funds which, according to APS guidelines, will permit an Award of \$5000/year. A Prize would require a \$200K endowment and generate \$10K per year (the minimum for a Prize).

Naming.

The naming will inevitably be very difficult, and I suggest this is a task that is well suited to the Fluid Dynamics Prize Committee.

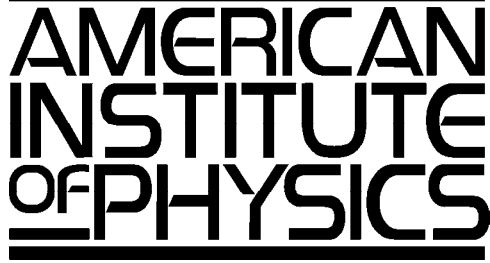
Action Item:

Therefore, I seek your endorsement of (1) the general concept of establishing a new DFD Award at the level of 5K/yr; (2) that the new DFD Award have the purpose described above, with either a 5-yr or 10-yr rule; (3) to ask the Fluid Dynamics Prize Committee to come forward with a name, in consultation with the membership and the Executive Committee.

Thank you.

Lex Smits.

## Appendix G



**MEMO:** Proposed AIP Media Services for APS Division of Fluid Dynamics

**DATE:** May 8, 2008

**TO:** James Brasseur (Pennsylvania State University), Jim Duncan (University of Maryland), and members of the American Physical Society's Division of Fluid Dynamics.

**FROM:** Jason Socrates Bardi, Manager, Member Society Media Services, American Institute of Physics Media & Government Relations Division, One Physics Ellipse, College Park, MD 20740, [jbardi@aip.org](mailto:jbardi@aip.org), 301-209-3091

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Dear Jims,

Please find in this memo a proposal from the American Institute of Physics (AIP) Media & Government Relations Division to provide media services for the American Physical Society's Division of Fluid Dynamics 61st Annual DFD Meeting, which takes place November 23–25, 2008 in San Antonio, Texas. We are very gratified by your interest in using our media services, and we would be delighted to help you begin the process of building publicity for your annual meeting.

The attached documents contain a detailed breakdown of deliverables, costs, and timing. If these terms are acceptable to you, please let us know by late May/early June, and we will proceed. If you have any questions or need clarification on any issues, please do not hesitate to contact me.

Best,

j

# Proposal for AIP Media Services for APS Division of Fluid Dynamics (DFD) 2008 Annual Meeting

After discussions with Jim Brasseur and Jim Duncan, The American Institute of Physics (AIP) Media & Government Relations Division is pleased to present the following proposal to provide media services for the American Physical Society's Division of Fluid Dynamics 61st Annual DFD Meeting, which takes place November 23–25, 2008 in San Antonio, TX. Jim Brasseur is chair of the ad-hoc DFD Committee for Media & Public Relations (DFD-CMPR) and Jim Duncan is the chair of the planned committee that will coordinate local Media & Public Relations (local-MPR) for this year's annual meeting in San Antonio. The effort at AIP will be led by Jason Bardi, Manager, Member Society Media Services in the Media & Government Relations Division at AIP.

The efforts of the AIP will be closely coordinated with the local-MPR committee (with consultation from the DFD-CMPR as useful). The goal will be to promote the San Antonio meeting and to establish a basis for media outreach efforts at future DFD annual meetings. Successful public relations efforts are built with the raw materials of work and time, and our longer-term goal over the next several years will be to raise public awareness of the science and engineering of fluid dynamics and its important role in society by promoting the DFD annual meeting through the media. We look forward to further discussions with the DFD-CMPR to develop a proposal for a broader agenda for the DFD in the area of media & public relations.

**Cost of Services:** This year, the AIP would like to propose a **flat fee of \$15,000** for media services for the San Antonio meeting based on costs for generating, disseminating, and tracking meeting news releases; designing, implementing, and advertising a virtual press room; and generating media attention for the Gallery of Fluid Motion. Our fee is calculated by considering the estimated total number of staff and management hours it will take for us to complete all the tasks involved multiplied by our per-hour rate. Our quoted flat fee is final and will not change even if we write more news releases or spend more hours than estimated to perform the tasks mentioned below.

Interacting with the local MPR committee, AIP will produce multiple **meeting news releases** on topics presented at the San Antonio conference, with the goal of generating news coverage of the research at the meeting in print, broadcast and Internet media. AIP will distribute the releases to targeted lists of journalists and will follow-up with targeted efforts towards local reporters and national reporters. AIP will facilitate media inquiries, track news coverage of the meeting, and report back to the relevant committees after the meeting.

We propose designing and implementing a new **Virtual Press Room** that would serve the San Antonio and future meetings. The Virtual Press Room would be designed according to elements elicited in meetings with the local MPR committee and the DFD-CMPR. It will be linked to from the meeting home page (<http://dfd2008.tamu.edu/>) and will offer reporters all relevant meeting news releases and other materials. Its template design would be covered by a one-time fee, and the site would be easily adaptable for future meetings at little or no additional cost.

In order to generate media attention for the **Gallery of Fluid Motion**, we would create a news release highlighting some of the more interesting visuals and pitching a story on the Gallery to local media. We could also create an additional page on the Virtual Press Room with the information.

All the above activities will be carried out in close coordination with the local MPR committee. Future



evolution of interactions with the DFD will be based on the experiences from this first year. We anticipate that in future years, we will continue to do news releases and maintain the virtual press room as the basis of generating publicity for the meeting.

In a related effort, we hope to work with Jim Brasseur and the DFD-CMPR to develop additional outreach activities as warranted and evaluate the success of our activities on a year-by-year basis. Some years, for instance, there may be breaking news that we choose to host a press conference on. We may also find that the Gallery of Fluid Motion is a popular site with the media, warranting additional efforts to do media outreach related to it. The overall goal will be to build a "following" of reporters who will be receptive to our PR efforts and interested in reporting the science presented at the meeting.

## **Detailed Description of AIP Deliverables and Costs for Media & Public Relations for the 2008 DFD Annual Meeting**

As a division of the American Physical Society, the Division of Fluid Dynamics is eligible for AIP's member society billing schedule, which is "at-cost." Our fee is calculated according to the estimated total number of staff and management hours it will take for us to complete the tasks involved multiplied by our per-hour rate. This rate is based on the labor rate within AIP's Physics Resource Center, and is currently (\$100) per hour.

Please note: our fee is a flat fee and a final quote. It will not change even if we write more news releases or spend more hours than estimated to perform the tasks mentioned below. AIP will invoice the Division after the meeting, in early December.

### **1) MEETING PRESS RELEASES (\$8,000)**

News releases are essential for generating meeting publicity. While it is impossible to predict how much publicity such releases will generate, our experience suggests that factual, well-written news releases are the best starting points for reaching out to journalists. They provide self-contained, complete stories that news organizations can either post to their websites or provide a well-developed story idea which journalists can use to conduct interviews and research for original stories on the research topic.

This work begins with selecting particular presentations to cover in the releases. Our proposal assumes that AIP will work closely with the local-MPR committee to identify interesting abstracts and that the local committee will make the first cut, selecting potential abstracts after input from AIP. Attachment Two is a document that will serve as a basis for helping to train members of the local-MPR committee on what to look for. AIP would then choose a subset of these to research, write, edit, vet, distribute, promote, and track. We propose preparing a general news release along with a few single-topic news releases.

The **General News Release** will provide an overview of the meeting and contain several brief (100-300 word) summaries of individual abstracts, sessions, or other meeting topics. The general news release would provide an opportunity to convey the "big picture" and summarize a number of papers. This will be widely disseminated about 4-6 weeks prior to the meeting.

1-3 additional **Single-Topic News Releases** will focus in more depth upon individual themes or presentations rather than the meeting as a whole. These could be on the subject of a single abstract (e.g., "Tulane professor shows how unstable water flow may have contributed to Katrina levee breaks") or they could be summaries of several talks across several sessions, all related to a single area (e.g., "Biomedical breakthroughs discussed at 2008 fluid dynamics meeting").

*As discussed above, our calculated hours reflect that we would work closely with local MPR committee*

*for the annual meeting to help them make the first selection of papers that have maximum newsworthiness and are scientifically solid. Specific details include:*

**WRITING/EDITING:** Each presentation covered in the general release and each single-topic release will be written and edited in-house and then fact-checked with the scientists involved and their institutional PR staff. Then copies will be sent to the local MPR committee and other relevant DFD members for final edits. Any changes made at this stage will be checked again with the scientists as appropriate, and then the release will be sent out.

**DISTRIBUTION:** Using AIP's subscription to the Cision Media database, we will distribute the releases to a tailored list of several hundred science, medical, and health reporters, as well as to a targeted list of Houston- and Texas-area reporters and trade-journal publishers. In addition to making the news release available for the conference website, we will distribute the news release via the Internet-based Newswise service ([www.newswise.com](http://www.newswise.com)) and Eurekalert ([www.eurekalert.org](http://www.eurekalert.org)), which are regularly read by reporters at many media outlets.

**PITCHING:** We will make phone calls and send targeted emails to selected reporters to encourage them to cover the meeting in person and via the Virtual Press Room. We will make a special effort to get local reporters to cover the meeting.

**HANDLING MEDIA REQUESTS:** *Costing for this proposal is based on the assumption that no AIP staff will attend the meeting in San Antonio.* This is a realistic approach in the beginning as we cannot expect an overwhelming response from the start by reporters wishing to attend the meeting in person. Reporters these days often do not attend meetings in person unless it is a meeting they go to every year or one where they know there will either be a huge breaking news story being reported at a press conference during the meeting. This is not the same for reporters who are based in the city where the meeting is being held. AIP and the local-MPR committee will have to work out procedures for handling local reporters.

**LOCAL MPR COMMITTEE:** For this year, we propose to concentrate on getting national reporters to cover the meeting from afar and getting local reporters to cover the meeting from their desks or in person. We propose that the local-MPR committee, with the meeting organizers, identify volunteers who can meet local reporters interested in attending the meeting in person and coordinate their activities on the ground. It is important to do whatever possible to help reporters who are interested in attending in person.

AIP will be available to facilitate all media requests that come in during the meeting and direct reporters to conference presenters, conference officials, and volunteers through email and telephone.

## **2) VIRTUAL PRESS ROOM (\$6,000 one-time flat fee for design)**

The Virtual Press Room is essential to helping reporters cover the science—especially those who will not be attending the meeting (the majority).. We can never guarantee that any reporters will write about meeting presentations, but in our experience, the easier we make it for them to gather the information they need to report on the meeting, the more likely we will be successful in our PR efforts. The Virtual Press Room aims to make covering the meeting remotely as easy as possible.

Basically the Virtual Press Room will be a web site that contains content relevant to the press. This content includes the **AIP-generated news releases** along with aggregated information on attending the

meeting (linking to existing conference pages where possible). It will also include a page designed for **lay language papers** (see below) and a separate page with the release and/or highlights of the **2008 Gallery of Fluid Motion**.

**DESIGN:** The Virtual Press Room design will be done by AIP's web contractor under the guidance of AIP staff with input from and in close coordination with the local MPR committee and other committees as relevant and useful (e.g., the DFD Media & Public Relations and Education/Outreach committees). The basic design will incur a one-time cost, and it will be general enough to update for use year-after-year. A more advanced design, with additional features, is described in Attachment One but is not reflected in the cost above.

**NAVIGATION:** the Virtual Press Room will be linked to from the San Antonio conference home page and from the appropriate APS Division of Fluid Dynamics pages.

**HOSTING:** There are three alternatives for how and where the Virtual Press Room will be hosted. AIP could host the virtual press room on the AIP.org domain (costing for this is not included in the above estimate); APS could host the virtual press room on the APS.org domain; or Texas A&M University, the home institution, could host the virtual press room on TAMU.org. *This issue requires further discussion.*

**DELIVERY:** AIP will post the html pages and all associated graphics to the correct server (given the ftp site and password) or will email the final files to a webmaster for posting.

### **3) GALLERY OF FLUID MOTION (\$1,000)**

To generate media attention to the **Gallery of Fluid Motion**, we propose to write a news release announcing the Gallery to local and national reporters, pointing to some of the more interesting subjects in the Gallery. We would host this release on a page within the Virtual Press Room, the design of which would be covered by the scope of work for the virtual press room. *There are some issues that require discussion with Jim Duncan and the local-MPR committee.*

- Will we have the images at least a few weeks in advance of the meeting?
- Can we make the images freely available to the media? (If they are not open-access, then a simple solution would be to host the images we select on a password-protected site and give the password out to any reporter who contacts us)?
- Do we anticipate the Education or some other committee having time to arrange for a tour of school kids visiting the gallery (this would require outreach, coordination, and having volunteers who can explain the work to them)?

*Though this is not reflected in the cost above, we could also consider designing a more interactive site aimed at highlighting some of the interesting visual presentations from past and present meetings. Attachment One provides an estimate for the extra cost of this effort.*

### **SUMMARY OF COST ESTIMATE**

This year, the AIP would like to propose a flat fee of \$15,000 for media services for the San Antonio meeting based on costs for performing the following:

- 1) Generating, disseminating, and tracking meeting news releases (\$8,000);
- 2) Designing, implementing, and advertising a virtual press room (\$6,000); and\*\*
- 3) Generating media attention for the Gallery of Fluid Motion (\$1,000).

\*\*The costs reflected in fee #2 are a one-time fee. Also, we invite you to consider optional enhancements to the web design effort that are *not reflected in the fee #2 above*. These include designing a more interactive site aimed at highlighting some of the interesting visual presentations from past and present meetings. Attachment One provides an estimate for the extra cost of this effort.

#### **FUTURE WORK—LAY LANGUAGE PAPERS**

The design work for the Virtual Press Room will also include designing a page and templates for **lay language papers**. These are roughly 500 word summaries written by the authors of individual presentations with accompanying graphics and multimedia files. They serve as starting points for journalists who are interested in covering the meeting but cannot attend in person. In the past, we have enjoyed success at enhancing our media relations efforts by inviting such lay language papers from conference attendees. They provide more depth and can broaden the number and type of abstracts we offer to the media, since the news releases we write will generally only cover a few percent of the abstracts at a meeting.

For the San Antonio meeting, we will invite presenters who are covered in our press releases to submit lay language papers, and we will link to them from the news releases. This adds value to the release. In future years, we propose a more enhanced effort to involving lay language papers. In the interest of making available as much layperson-friendly information on the conference as possible, we may also invite several authors not covered in the general release to submit lay-language papers.

AIP would solicit these papers from meeting presenters with input from the local MPR committee, edit them, mark them up as HTML, post them, and generate an additional news release about them. Specifically, we propose the following activities:

**SOLICITING:** Two months or so before the meeting, AIP will solicit perhaps 20-30 lay-language papers and provide detailed written guidelines for writing them to conference presenters. (Soliciting 20-30 will generally result in about 10-20 being submitted). The criteria for selecting lay-language papers is the same as that used for selecting the abstracts for the general and single-topic releases, and we will work with the local MPR committee to select them.

**DESIGN:** We will design a page for hosting the papers. This page would be integrated with the Virtual Press Room and would be hosted on the same server. It would list the lay language papers organized by topic or date. We would also design a template for the papers themselves. The costs associated with this design would be incurred only once. In future years, conferences could update the templates. NOTE: costing for this design effort is built into the estimate for the Virtual Press Room above.

**EDITING/MARKUP:** We will copy edit the lay-language papers and mark them up for posting on the lay-language paper page.

**DELIVERY:** We will also post them or email the final files to a webmaster for posting.

**ADVERTISING:** We will include in our news release a link to the lay-language web site.

The cost of the above activities would be about \$6,000 a year in future years.

## Attachment One: Web Design Cost Overview

The cost for the **basic design process would be \$6,000**, and if your budget can accommodate a larger project scope, additional features could be added for the additional costs described below (See “NOTE”). A basic site design would consist of three pages, and two templates. These include:

- 1) A Virtual Press Room Homepage;
- 2) A template for news releases;
- 3) 2008 Gallery of Fluid Motion page (design would follow news release template);
- 4) Lay language paper home page; and
- 5) A template for lay language papers.

To complete the basic design at this minimal cost, the following process is proposed. This process is designed to build the site with a maximal amount of pre-design input and feedback from DFD at a minimal cost. The process will be:

- 1) One hour initial requirements discussion between AIP and DFD;
- 2) Preparation of a requirements document;
- 3) Review of requirements document offline by DFD;
- 4) Review of requirements document in another one-hour discussion between DFD and AIP;
- 5) Design of pages;
- 6) Offline review of page design by DFD and mechanism for electronic feedback;
- 7) Minor modifications after design review;
- 8) Delivery of final version for DFD approval; and
- 9) Posting of final version to web.

It is important to note that this process is “top heavy” on the planning side in terms of design. It assumes that AIP and its contractors will accurately capture the requirements for the look and feel and other page elements prior to design. It does not assume that there will be major design revisions during review after the design of the pages.

The basic design would be a straightforward site of the sort typically used in academic environments, without visually interactive features such as menus that highlight when rolled over, or Adobe Flash introductions.

NOTE: If the budget can accommodate a larger project scope, the following options are proposed for consideration:

- 1) Preparation of two or three competing designs, from which the preferred would be selected;
- 2) Enhanced search capability for site;
- 3) An enhanced gallery of fluid motions with additional design elements; and
- 4) Interactive features for fluid motions and/or lay language papers pages (e.g., the ability for site visitors to leave comments or provide ratings, which could further be used to highlight the most popular content.

Some or all of these could be prepared for an additional budget **ranging from a few thousand to \$25,000**, depending on the scope and a variety of factors such as the hosting and programming language requirements for interactive content. We would be happy to discuss these options with you to provide a specific estimate for more sophisticated content of your choosing.

## Attachment Two: Timeline

Timeline	DFD and Appropriate DFD Committees	AIP
Early May		Submit proposal for Media Services to DFD.
May/June	Approve media services proposal, provide AIP with list of committees and individuals who will interact with AIP for review of news releases, Web pages, etc.	Organize initial meeting to discuss requirements for web design; draft a requirements document and submit to DFD for approval.
July/August	Review and approve Web design requirements and the actual Web designs as they become available.	Design Web pages following with appropriate feedback from and in consensus with DFD.
September	Identify first cut of papers of potential interest to reporters.	Look through Abstracts and make an additional selection of papers for news releases.
October 1	Approve final Web designs.	Begin drafting news releases. Invite authors of abstracts covered in news releases to submit lay language papers.
Mid- October	Identify presentations of interest for Gallery of Fluid Motion..	Complete draft of press releases; fact check individual items with respective presenters.
Late- October	Review meeting press releases, make suggestions or corrections, and sign off on final draft.	Send news release to national and local reporters; post release on Eurekalert and Newswise.
Early-mid November	Approve final version of press releases and Gallery of Fluid Motion page as they become available.	Send out additional news releases; post lay language papers related to releases and Gallery of Fluid Motion; contact local press to try to arrange on-site interviews.
Nov. 25-27	DFD staffer/volunteer will be onsite to and assist any on-site reporters.	AIP staff will be available to answer calls from journalists and facilitate interviews with meeting speakers.
During/after meeting		Prepare possible Inside Science News Service items; acquire possible story ideas for Discoveries & Breakthroughs TV program at no additional cost; provide feedback on tracking of news releases.

## Attachment Three: Newsworthiness

This document describes what we think about when we think about "newsworthiness." These are several criteria that might make a scientific abstract appealing to the media—in general. Criteria will vary wildly from outlet to outlet as reporters typically care about what their audience cares about. Local papers report on things that affect their local markets. National media outlets want the big story. Specialty science publications may be interested in more obscure topics, etc.

That being said, here are ten characteristics that make a story newsworthy:

### 1) THE STORY IS **TIMELY**

There is nothing that can help your story more than if it is timely. If it relates to some greater story in the news, then you may have a lot of opportunity to get your story picked up. Often this is the toughest thing to plan for because the news cycle moves so fast, but some examples would be: geophysical fluid dynamics as it relates to some natural disaster in the news (e.g. the Myanmar cyclone or the Reno earthquakes); any breaking news involving fluid dynamics related to fuel cells, advanced combustion technologies, alternative wind, ocean, or nuclear energy sources and connected to the almost daily record oil prices; security and antiterrorism science of airport sniffers related to the busy summer travel months, etc.

### 2) THE STORY INVOLVES **HUMAN DRAMA**

Occasionally a story comes along that has a compelling human element to it. Journalists love these stories because their readers/viewers love human drama. Any science story can be made better by including some tragic, inspiring, or surprising human angle. Biomedical fluid dynamics has great potential for this because if a reporter is discussing a new technology involving the gastro-intestinal tract, pulmonary fluid dynamics, cardiovascular and heart fluid dynamics, or transport across cellular membranes, the story will be much better if it can be connected to an actual person who has a disease or condition that the new science is addressing.

In a news release or lay language paper, if there is a way to link a real human into the story, high up, that helps. These angles are few and far between, but reporters look for them every time. An expedition to Antarctica is interesting not only because of the scientific questions but because of the human drama of braving Earth's harshest continent. As my colleague Jim Dawson puts it: If I can describe the individual scientists who are struggling to start up the LHC, that is more interesting than saying, "scientists struggled to start up the LHC."

### 3) THE STORY IS OF **EVERGREEN INTEREST**

Stories are evergreen for one reason: people care deeply about the underlying issues. These issues persist from year to year, and publications are always looking for a fresh angle. Some examples: energy issues, climate change, anything related to security, health & welfare, and many more.

### 4) THE STORY COVERS A **GREAT SCIENTIFIC DISCOVERY**

New discoveries always make for good headlines, regardless of whether they have immediate application or not. This is the category for which I would expect to get the most help from your session chairs. They have their fingers on the pulse of research in the various sessions, and they should recognize when something is groundbreaking science even if we cannot. Even if it is an incremental discovery, does it take us further than we have gone before? Is there a superlative involved? Is it the longest? Smallest? Fastest? Cheapest?

One thing I will add is that *no matter how complicated a subject is, we can put an accurate and interesting spin on it*. AIP is filled with science writers, and our job is to take seemingly impossible-to-understand material and render it comprehensible and compelling.

#### 5) THE STORY IS **SURPRISING**

This is the classic “Man Bites Dog” story. It begins with a situation that is completely familiar and leads you to a conclusion that is completely unexpected. The Atkins diet is a great example of this (eating a bunch of bacon cheeseburgers can help you lose weight). Cigarette smoking is another classic man-bites-dog story. Up to the 1950s, people actually thought it was healthy. The increase in lung cancer noted over the first half of the 20th century was ascribed to the rise in automobile emissions. When Richard Doll began reporting a link between cigarettes and lung cancer, his story got a lot of air time from chuckling reporters who would announce lightheartedly that some egghead doctor was actually suggesting smoking cigarettes is bad for you (this was a time when TV reporters would actually chain smoke on air).

#### 6) THE STORY DESCRIBES AN **IMMEDIATELY APPRECIABLE APPLICATION**

The news here may be that the story has an application that will begin immediately changing people's lives. Many late-stage medical discoveries fall into this category. When a drug proves efficacious in a clinical trial, the expectation is that it will become available in the pharmacy in short order. People with those diseases treated by that drug will read stories like this with interest.

The application does not necessarily have to be immediate, either. It just has to be immediately appreciable and contain the promise of future application—whether or not that application is ever realized. There are many famous and infamous examples of this. The segway scooter was a big deal from a PR perspective because it was greeted with predictions by Jeff Bezos and others that it was going to revolutionize human transportation. Likewise, the leptin rat was a huge story because the researchers could show how they cured obesity in mice by altering one gene. Both stories were met with bloated predictions of how these inventions would change society.

#### 7) THE STORY TOUCHES UPON **HOT-BUTTON ISSUES**

Money, health, corruption, human triumph over adversity, cute animal stories, and many more. All these sorts of stories are great regardless of the news cycle.

#### 8) THE STORY INVOLVES **COOL TECHNOLOGY**

The Segway scooter also was a huge story because it has elements of being a cool technology as well. NASA constantly hits this note when it sends out press releases related to space exploration. Shuttle launches to the international space station always get good coverage because of the technology angle. It is not what the astronauts do on the mission that gets the headlines, but usually just the launch and the landing. Likewise all the major science outlets that have covered the LHC at CERN have drawn upon the technology aspect -- especially in the art.

#### 9) THE STORY HAS **GREAT VIDEOS AND GRAPHICS**

Always be on the lookout for stories that have great art associated with them. We can get coverage on that basis alone. Paleontology and astronomy often get great general coverage because they have very cool images. Likewise the leptin rat comes to mind—the famous side-by-side shot with the hugely fat rat lined up next to its genetic twin altered in this one genetic way. I hope that much of the work represented in the Gallery of Fluid Motions falls under this category.

#### 10) THE STORY HAS THAT **GEE WHIZ THING**

I consider this science as offbeat news. The idea here is that the news makes people care even though they have no reason to do so. Animal stories fall into this category. So do any number of books in recent years



on the physics of sports, star trek, etc.

# Appendix H

## Councillor Report for DFD Executive Committee Meeting, 12 February 2008

James G. Brasseur, Councillor

Since the last Councillor report at the Annual Meeting in Salt Lake City, there have been two council meetings. The first was the day after the November DFD Executive Committee Meeting in (18 November 2007, Denver) and the second was April 11, 2008, in St. Louis. Here I summarize issues related to or brought up at the APS Council meetings that may be of interest to the DFD.

### **Future Coordination of the November APS Council Meeting with the DFD Meeting**

The November APS Council Meeting in 2007 overlapped with the DFD meeting in Utah, making it impossible for me to attend without missing part of my annual meeting. I complained to the APS executive about this and was told that the original intent of the November meeting was to make it at the same time and place as either plasma physics, help a week or so before the DFD meeting, or with the DFD meeting. I realized that if the Council Meeting at the same time/place as the DFD meeting, there would be the opportunity for the APS Executive Committee and Council members to observe our meeting, especially the Gallery of Fluid Motion, and become more aware of Fluid Dynamics, and for some APS committee officers to participate in our Executive Committee meeting. I therefore made a request to the APS Executive Committee for the APS Council meeting in November 2009 to be held concurrent with the DFD meeting in Minnesota. This request failed at the last APS Executive Committee meeting. I will therefore make a formal request for the 2010 Council Meeting to be held coincident with our meeting in Long Beach, CA.

### **APS Study Group on Energy Efficiency: SEE APPENDIX**

A major report is in process on the theme of energy efficiency to be released in early July 2008, in time to impact discussions surrounding the presidential election in November. The committee developing the report is chaired by Burt Richter, Nobel laureate; the vice chair is David Goldston. Five audiences have been identified for the report, including: the next Administration, Congress, policy makers, opinion makers, and the general public. Each audience will be marketed differently with help from a professional marketing firm. The full report will be published in a special edition of Reviews of Modern Physics which will be made open access at no cost to readers.

I PRESENT IN THE APPENDIX THE REPORT TO COUNCIL FROM THE STUDY GROUP.

### **POPA (APS Panel on Public Affairs) Reports**

- (1) The POPA presented a draft of a report they plan to send to President Bush entitled "The Role of Nuclear Weapons in 21st Century US National Security." There will be a Technical Issues Workshop on April 24th, at AAAS Headquarters, Washington DC on this.
- (2) The POPA is developing reports on Nuclear Forensics and on looking at nuclear workforce issues and the readiness of trained and qualified technicians to work in nuclear-related industries.

### **Statement on Climate Change**

The following Statement on Climate Change by the APS passed the Council at the November meeting: "Emissions of greenhouse gases from human activities are changing the atmosphere in ways that affect the Earth's climate. Greenhouse gases include carbon dioxide as well as methane, nitrous oxide and other gases. They are emitted from fossil fuel combustion and a range of industrial and agricultural processes. The evidence is incontrovertible: Global warming is occurring. If no mitigating actions are taken, significant disruptions in the Earth's physical and ecological systems, social systems, security and human health are likely to occur. We must reduce emissions of greenhouse gases beginning now. Because the complexity of the climate makes accurate prediction difficult, the APS urges an enhanced effort to understand the effects of human activity on the Earth's climate, and to provide the technological options for meeting the climate challenge in the near and longer terms. The APS also urges governments, universities, national laboratories and its membership to support policies and actions that will reduce the emission of greenhouse gases."

### **APS Publications**

The Editor-in-Chief announced a program to establish a Referee Recognition program to recognize individuals who have served "over and above" as journal referees. This will not apply to the Physics of Fluids, which is published by the American Institute of Physics (AIP), the umbrella organization to the APS.

Foreign authors to APS journals from Japan, Korea and China will now include their name in characters.

### **Comment to the Physics of Fluids**

I returned to Salt Lake City from the Denver Council meeting in November along with Fred Dylla, Executive Director and CEO of the AIP. Fred was coming speak with editors of the Physics of Fluids, an AIP journal, and to observe our meeting. I met him later; he indicated that he was disappointed at being apparently unsuccessful at meeting PoF editors at the PoF social event at the meeting.

### **Physics Teachers**

There was a discussion about a crisis in the lack of teachers knowledgeable in Physics teaching at the high school and grade school levels. A proposal has been sent to NSF for approximately \$7M to extend the "PhysTEC" program to address physics teacher preparation and support physics departments as they work cooperatively with their education departments to better train physics teachers.

### **Visas**

It was reported that problems processing visas for students and scientists entering the US from foreign countries have diminished but the challenge now is to get legislation addressing longstanding problems with a provision that requires foreign students studying in this country to return to their native country after they have completed their education. There have been many proposals by members of both parties to create a new student visa category that eliminates this requirement for graduates to leave but passage of these bills have depended on them being tied to larger immigration bills. Recent immigrations bills have been defeated and it appears no one is going to attempt to pass any immigration bill until a new administration is in power. In the meantime, smaller portions of the overall package such as establishing a new student visa category which has bipartisan support languish. The good news is that, despite post 9/11 problems with visas, it appears numbers of foreign students enrolling in science majors is creeping back up toward pre-9/11 figures.

### **Membership Numbers: SEE APPENDIX**

In an APPENDIX to this report I present tables of statistics of numbers of members of the APS and its divisions over time, including the DFD.

### **Report on Graduate Education in Physics**

A conference to discuss the status and future of graduate education in Physics took place in Jan/Feb in College Park entitled "Graduate Education in Physics: Which way forward?" If you wish to have a copy of the report, let Jim Brasseur know/

### **Washington and the Funding Agencies SEE APPENDIX**

At the November meeting, Lubell summarized the situation with the Federal budget for FY08 as "chaotic". He described efforts made earlier in the year to pass FY07 appropriations legislation that included significant science research funding authorizations as part of the America Competes Act, in which Vern Ehlers played a critical role. He said once again the federal government is operating on a continuing resolution as the only appropriations bills that have been past are those for Department of Defense.

A letter was sent to President Bush on 28 January 2008 requesting \$300 M for the DOE signed by the presidents of 7 scientific and engineering societies. . A letter was sent in April 9, 2008 to President Bush, Madam Speaker, Minority Leader Boehner, Majority Leader Reid, and Minority Leader McConnell urging Congress and the Administration to restore the Fiscal Year 2008 appropriations originally planned for science as you finalize the current Supplemental funding legislation. It was signed by 20 scientific and engineering societies, including presidents of the APS, IEEE, UCAR, the Consortium of Universities for the Advancement of Hydraulic Science, the American Mathematical Society, etc.

I PRESENT IN THE APPENDIX TWO CHARTS PRESENTED AT THE APRIL MEETING ON APPROPRIATES.

# **American Physical Society Study Group on Energy Efficiency**

## **Report to Council**

**Burton Richter, Chair  
April 11, 2008**

### **I. Status Report**

1. The final membership list and final version of the charge have been distributed to council members.
2. We will have our fourth and hopefully final meeting of the entire group on May 6-7. Previous meetings were August 30-31, 2007, October 29-30, 2007, and February 15-16, 2008.
3. We have a tentative list of findings for both the transportation and buildings areas. They are attached in sections II and III of this report. These are still tentative because we have not yet had responses from all of the members of the study group to the draft version.
4. We have begun discussing recommendations, but do not have a final list. I'll give a sample of two or three of our top recommendations later in this report.
5. At the May meeting we hope we will have a first draft of the entire report.
6. We want to get the report to the review committee before the end of May which is a tight schedule.
7. The review committee chair has been asked by Arthur Bienenstock for a fast review.
8. I request that the council agree to a mail ballot to approve the release of the final version after the responses to any concerns expressed by the review committee have been made.
9. Target date for distribution of the APS Report is early July. We believe that there are two periods before the inauguration of the next President of the United States when the candidates and their senior staff will pay attention to reports such as ours. These periods are before the convention and immediately after the election. Before the conventions, candidates' staffs are looking for themes to use in the

campaign. Energy is high on everybody's list and efficiency certainly sounds good, especially since evidence is quite clear that it saves money in the long run. After the election the transition teams for the new administration will be working on the future directions and budgets for the agencies. For energy the list includes DOE, Commerce (NIST), NSF, EPA, and DOT. The transition is a frantic period and it is best if the directions we advocate are already in the hands of appropriate people. There are only two months between the conventions and the election and it is very hard to get the leadership of any of the candidates' campaigns to pay attention to new such things then.

10. The NAS/NAE is conducting a parallel study. Mike Lubell and I met with senior academy people before we began our study and our understanding at the time was that the Academy would leave end-use efficiency in transportation and buildings to us and would focus on primary energy systems and efficiency in the industrial sector. Things have not turned out that way and the Academy has decided that its study will cover the transportation and building sectors as well. It doesn't hurt to have two independent reports say the same thing. The Academy report's targeted release date is in early September.

## II. Buildings Sector Findings

Buildings fall into four categories: new commercial, new residential, existing commercial, and existing residential. Combining new construction and demolition, the building stock grows from 1-2% annually.

1. Energy use in the buildings sector is projected to grow by 30% between now and the year 2030. If current cost-effective energy efficiency measures are employed as buildings and equipment turn over between now and 2030, energy growth could be reduced to zero. New technologies and changes in behavior could increase the savings. Market imperfections are likely to reduce the savings. To achieve significant savings, strong policies are needed.

*(This finding is based upon a recent update by LBL to the 2000 Clean Energy Futures Study. The EIA projects energy consumption by the residential and commercial sectors to be 51 Quad in 2030, 31% higher than the 38.9 Quad consumed in 2006. The LBL study concludes that efficiency could reduce the 2030 projection to a value about 8% lower than the 2006 level.)*

2. It is likely that still larger energy savings are possible for commercial buildings, but good integrated design tools are lacking. Residential buildings are simpler than commercial buildings. In the last decade the DOE has made residential buildings a higher priority and has, accordingly, made significantly more progress in developing efficient designs for residential buildings relative to commercial buildings. To achieve the same progress in commercial buildings requires significant advancement in understanding the interactions between the various

building systems and optimization that takes these interactions into account. Success has been demonstrated in “one-off” commercial buildings but the design process is too complicated and expensive to be widely adopted. Hence the development of user-friendly, reliable integrated design tools is seen as essential for significantly improving the efficiency of new commercial buildings on a wide scale.

3. The **Federal Government** is not investing sufficient funds in R&D for next-generation building technologies, for training building scientists, or for supporting the associated university research programs, national laboratory research programs, and others. The largest funding gap is in the area of commercial buildings. Examples of under-funded advanced technology areas are:
  - integrated design and optimized operation
  - building-integrated photovoltaics
  - technologies for using natural light (called daylighting)
  - advanced window and window coatings
  - advanced insulating, desiccant, and thermal-storage materials
  - sensors and controls
  - natural ventilation
  - optimization of integrated heat pump and air conditioner systems
  - lighting fixtures (called luminaires)
  - on-board equipment diagnostics and retro-commissioning tools
  - advanced building assemblies

Particularly beneficial for existing buildings, both commercial and residential, would be expanded R&D for inexpensive technologies for upgrading windows and thermal envelopes.

In addition, research in organizational dynamics, behavioral economics and urban scale incentives and regulations is needed to change the dynamics around energy decisions and capital costs related to energy efficiency.

4. In the case of new commercial buildings, several organizations, including the Federal Government, State of California, and the American Institute of Architects, have set goals for zero energy buildings by 2030. In practical terms, this has come to mean a 70% reduction in energy consumption combined with on-site renewable energy generation to meet the remaining 30%.

In the absence of greatly expanded R&D effort for commercial buildings we find it improbable that this 2030 goal of 70% reduction in energy consumption can be achieved. We find this goal to be technically obtainable, but only with emergence of new efficient technologies and integrated design tools, unlikely to emerge without much expanded RD&D effort.

5. An important intermediate step to cultivate economic value for building energy efficiency will be the adoption of a building energy rating system and energy

label, similar to energy labels on appliances or building labels being used in Europe.

*(There are several organizations promoting building energy labels including the European Union, EPA, DOE, ASHRAE, and several states (including CA). RESNET is a rating system widely established for homes. The European building energy label includes a rating based on simulations in comparison to a baseline model and a second rating based on actual utility bills. Building energy labeling is a crucial step in giving efficiency investments value for potential buyers and lending institutions.)*

6. While the DOE funds basic energy science and short term applied projects, there is inadequate structure/funding to support high-risk, long term, engineering or applied research such as those required to advanced efficient technology in buildings.
7. There are significant energy savings to be gained by expanded deployment of combined heat and power (CHP), particularly in commercial buildings.
8. We find that “standby power” is significant unnecessary waste of energy, particularly in residential buildings.

*(Standby power is electricity consumed in a device that is nominally powered down. Most modern electronic devices (microwave ovens, televisions, computer monitors, DVD players, etc.) when powered down, actually remain in a “sleep” mode using some energy – in some cases a sizable fraction of the power used when in the normal operating mode. IEA estimates standby power has grown to nearly 10% of the electric consumption in residences. Clearly low power circuits can be developed to solve this problem and this should be accomplished.)*

9. There is a need for a flexible facility for testing commercial building designs and systems. This would be a building that can be modified and configured to test combinations of HVAC components, glazing, lighting systems, and wall components in order to perform controlled experiments that look primarily at system performance, not just component performance.
10. The technical-economic potential for efficiency in buildings will not be achieved without a variety of policy tools to remove market barriers that discourage investment in energy efficient technologies. The most successful of these tools in the past have been appliance standards, utility demand-side management programs (promoting customer end-use efficiency), and building energy standards. There are compelling reasons to mount more aggressive programs in these areas.

### III. Transportation Sector Findings

1. The fuel economy of light-duty spark-ignited internal-combustion-engine vehicles—the type of engine found in most cars on the road today—can be increased to at least 35 miles per gallon by 2020 through a combination of continuous incremental improvement in engines, transmissions, aerodynamics, and other technologies, without changing weight or performance characteristics. Ongoing improvements could lead to at least 42 miles per gallon by 2030 for an internal-combustion spark-ignited vehicle.
2. Diesel engines presently have a fuel economy up to 17% greater than gasoline engines; performance could reach about 50 miles per gallon by 2030. Fifty percent of new cars sold in Europe have diesel engines, primarily because of lower fuel cost, government tax incentives, and fuel-consumption standards. Use of diesel engines in the United States hinges in part on taxes, whether they meet fifty-state emission standards, and customer acceptance. Cars powered by a diesel engine will benefit from hybridization.
3. Hybrid vehicles—which currently account for 2% of new car sales in the United States—typically have a fuel economy up to 30% greater than an equivalent non-hybrid vehicle.
4. A hybrid vehicle currently sells for a higher price—typically 15-20%—than the equivalent non-hybrid vehicle. Payback period for a hybrid vehicle depends on many factors, especially the price of gasoline. The payback period at present for most hybrid vehicles (gasoline at \$3.60 per gallon) is shorter than the lifetime of the vehicle.
5. More widespread implementation of strong lightweight materials will allow weight reduction of vehicles and will lead to further improvements in fuel economy. A reduction in weight of 10%, for example, will give an improvement in fuel economy of 6% at constant performance. Research and development of application of lightweight materials will benefit manufacturing of light-duty vehicles.
6. Safety of vehicles can be improved by reducing the weight of all vehicles and by improving vehicle design.
7. Plug-in hybrid vehicles—which charge their batteries from the electric grid—will have an improvement of fuel economy of up to a factor of two in primary energy consumption. The first commercial plug-in hybrid vehicles will be on the market in 2009-2010; significant market penetration will likely come much later. They are currently not cost effective for the mass market due to high cost of the battery. A plug-in hybrid vehicle with a range of 40 miles would be sufficient for in-town trips and commuting; long recharge time will limit its utility for longer trips.



*(Primary energy includes the energy used to produce the electricity that charges the batteries.)*

8. An all-electric vehicle takes its energy from the electric grid or generates electricity on-board from hydrogen. This can provide a vehicle with more than double present fuel economy and potentially provide carbon-free transportation, depending on the source of primary energy. Suitable batteries and/or hydrogen fuel-cell systems need to be developed for an all-electric vehicle to be feasible for the mass market. The impact on greenhouse-gas emission for an all-electric vehicle could be significant and transportation in light-duty vehicles could eventually be carbon-free; centralized production of electricity or hydrogen will allow choice of primary energy source and possible carbon sequestration.
9. Fuel economy of light-duty vehicles could be increased to at least 50 mpg—and perhaps to the 60-90-mpg range—by the 2030-2035 time frames by reductions of vehicle size and weight, large-scale implementation of hybrid and electric powertrains, and reductions in aerodynamic drag and rolling resistance.
10. The use of electricity and/or hydrogen to power light-duty vehicles will free America from dependence of petroleum to power cars, as a full choice of primary energy sources will become available.
11. Battery technology to power an all-electric car does not currently exist for mass-market vehicles which could replace the standard American family vehicle. Batteries with adequate storage capacity, lifetime, charging and discharging profiles, reasonable cost, and safety are required. Research and development of improved batteries is the key technology for development of an all-electric battery-powered car.
12. Battery-manufacturing capability on the scale required for mass production of plug-in hybrid or battery-powered electric vehicles does not now exist in the United States.
13. Fuel cells to generate electricity on-board a vehicle using hydrogen as a fuel are not presently practical for a mass-market vehicle. Advances in hydrogen production, transmission, and storage, and improvement of fuel cells are required. Catalysts which do not require platinum or other rare metals need to be developed to reduce costs. Lifetime needs to be improved.
14. Infrastructure must be developed or improved for cars to be powered by electricity and/or hydrogen. The electric grid and electricity distribution system are likely sufficient for charging battery-powered vehicles, assuming they are charged at night when electricity demands are low; provision for charging batteries at locations other than a home garage need to be considered. Hydrogen production, distribution and on-board storage systems will have to be developed for fuel-cell vehicles; there is presently very little infrastructure for hydrogen fueling of vehicles.

15. Research on combustion modeling and combustion dynamics is important to optimizing design of automobile engines of the future.
16. Technologies exist to reduce the fuel consumption of heavy-duty trucks by 15-20% by 2030; these technological improvements are in the areas of increasing engine efficiency, decreasing rolling resistance, and improving aerodynamics. Operational improvements could provide an additional 5-10% improvement.
17. Advanced technologies such as hybridization could improve heavy-duty truck efficiency by an additional 25% beyond the above improvements. This is applicable mainly to short-haul vehicles, delivery trucks, and urban buses, rather than for long-haul trucks.
18. New commercial aircraft have a fuel economy about 20% better than the preceding generation of aircraft, primarily due to extensive use of lightweight materials and improved engines. Improving the fuel efficiency of commercial aircraft by 25% by 2030 would require a very aggressive approach.
19. The highest priority research topic to transform the transportation sector is research on new battery technologies. A high priority is also assigned to developing improved fuel cells, improved catalysts, and new means of hydrogen storage. Nanoscience is already showing promise in should be considered especially for new battery designs and fuel hydrogen storage.

## APS Study on Energy Efficiency

### **STUDY CHARGE**

The APS Council has established a Study Group to produce a report on energy efficiency, focusing primarily on buildings (commercial and residential including appliances) and transportation (primarily cars and trucks). Improving energy efficiency is the simplest and least costly means available to reduce U.S. oil consumption and carbon emissions, but the U.S. is not doing enough to capitalize on energy efficiency either at home or in the products it exports. Improving energy efficiency must be one part of a portfolio of approaches for treating the U.S. “oil addiction” and reducing its output of greenhouse gases.

The Study Group should address the following questions:

- 1) What gains in energy efficiency are technically feasible and over what periods of time?
- 2) What basic and applied research, development and demonstration need to be conducted and/or funded by government and industry to achieve the technically feasible gains in energy efficiency?
- 3) What changes in government programs are needed to accomplish that research, development and demonstration, and what changes in government policy are needed to facilitate the success of new energy efficient technologies in the marketplace?

The Study Group should be as detailed and specific as possible in describing a prioritized research agenda and how it should evolve over time, and in describing what government and industry need to do to accomplish that agenda and see that its fruits are available for use by industry and consumers. The Study Group’s report should be of use to federal and state policymakers, as well as to researchers. The Study Group should include individuals with a wide range of backgrounds, given the number of fields that can contribute to improving the energy efficiency of the U.S. economy.

### **BACKGROUND**

The APS has a long-standing interest in energy issues.<sup>1</sup> In particular, in November of 2000 the APS Council issued the following statement:

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<sup>1</sup> “**Technical Aspects of the More Efficient Utilization of Energy**,” eds. W. Carnahan, K. W. Ford, A. Prosperetti, G. I. Rochlin, A. Rosenfeld, M. Ross, J. Rothberg, G. Seidel, R. H. Socolow, American Institute of Physics, Conference Series, Vol. 25, New York (1975); “**Solar Photovoltaic Energy Conversion**,” H. Ehrenreich, et al, APS Study, (1979); “**Research Planning for Coal Utilization and Synthetic Fuel Production**,” B. R. Cooper, et al, APS Study, Reviews of Modern Physics, Vol. 53, No. 4, Part II, pp. S1-S168 (1981), Publication #190; “**Nuclear Energy**,” APS Council, November 21, 1993; “**Energy: the Forgotten Crisis**,” APS Council, May 6, 1996; “**Nuclear Energy**:

Demand for oil and natural gas continues to grow with the expansion and globalization of the world's economy. In addition, our nation's dependence on imported energy has increased, and the effects of burning fossil fuels on the global environment are becoming a major concern. The Council of the American Physical Society believes that the use of renewable energy sources, the adoption of new ways of producing and using fossil fuels, increased consideration of safe and cost effective uses of nuclear power, and the introduction of energy-efficient technologies can, over time, promote the United States' energy security and reduce stress on the world's environment.<sup>2</sup>

Holding global emissions constant or reducing them while the world's economies continue to grow is a daunting task. A primary candidate for reductions is in the area of end-use energy efficiency, particularly in the buildings and the transportation sectors. These sectors account for more than 70% of total domestic carbon emissions.<sup>3</sup>

Historically, the Federal investments in energy efficiency research have had an impact on the development and deployment of energy technologies. The President's Committee of Advisors on Science and Technology (PCAST) in 1997 observed: "Improvements in energy efficiency reduced the energy intensity of economic activity in the United States ... between 1975 and 1995."<sup>4</sup>

The 1997 PCAST report evaluated the federal R&D portfolio and made recommendations on how to best match the R&D to the "challenges of the 21<sup>st</sup> century." The primary challenge examined in the report was how to maintain an affordable, secure and environmentally low-impact energy supply. While the report was definitive in its time, it is now a decade old. Over that time, the energy issue has become more urgent and the federal R&D portfolio has undergone numerous changes, not all of which have been considered in light of carbon-reductions. Consequently, it is time for a fresh look at the federal R&D portfolio.

The recent UN Foundation report "Confronting Climate Change" provides substantial background on the need for energy innovation to reduce carbon emissions.<sup>5</sup> In addition, the report "Potential Carbon Emissions Reductions from Energy Efficiency and

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**Present Technology, Safety, and Future Directions: A Status Report,** POPA Report, November 2001; **"Energy Policy for the 21<sup>st</sup> Century,"** APS Council, November 19, 2000; **"The Hydrogen Initiative,"** POPA Energy Subcommittee, March 2004; **"Nuclear Power and Proliferation Resistance,"** A report by the Nuclear Energy Study Group of the Panel on Public Affairs, May 2005.

<sup>2</sup> **"Energy Policy for the 21<sup>st</sup> Century,"** APS Council, November 19, 2000.

<sup>3</sup> Energy Information Administration, "All,ElecPwr\_Carbon", <http://www.eia.doe.gov/environment.html>

<sup>4</sup> **"Report to the President on Federal Energy Research and Development for the Challenges of the Twenty First Century,"** PCAST, November 1997.

<sup>5</sup> **"Confronting Climate Change: Avoiding the Unmanageable and Managing the Unavoidable,"** UN Foundation, February 2007.

Renewable Energy” provides substantial policy context.<sup>6</sup> Also, two recent reports from the Bush Administration add context.<sup>7</sup>

## **WORK PLAN**

### *Timetable:*

The Chair and Vice Chair of the Study Group should provide a progress report at the April 2008 Executive Board and Council meetings. At that time, the Council will be asked to agree to approve the report by email vote. At the same time, the Council will be asked to approve members of the Review Committee, who will be put forward by the President at that time. If the Council approves, the progress report should be informally presented to Department of Energy and congressional staff following the April meetings. The final report draft should be provided to the Review Committee by the end of June 2008, with a target release date of late summer.

### *Policy Supplement:*

The report will likely be lengthy and have significant technical detail. There should be a short Summary or Policy Supplement of no more than 5 - 10 pages that is specifically directed to the policy audience.

### *Audience:*

The primary audience will be policymakers, congressional energy staff, the relevant program managers at DOE, the relevant appointees on the staff of the incoming Administration in 2009, and state officials.

### *Participants:*

The Study Group should have approximately 10 members. Scientists should be drawn from industry, national laboratories and universities as needed. The Study Group should also look for members who have strong background in energy policy and energy economics. Further, to the extent that the report requires scientific expertise beyond the physics community, the Study Group membership should be developed accordingly.

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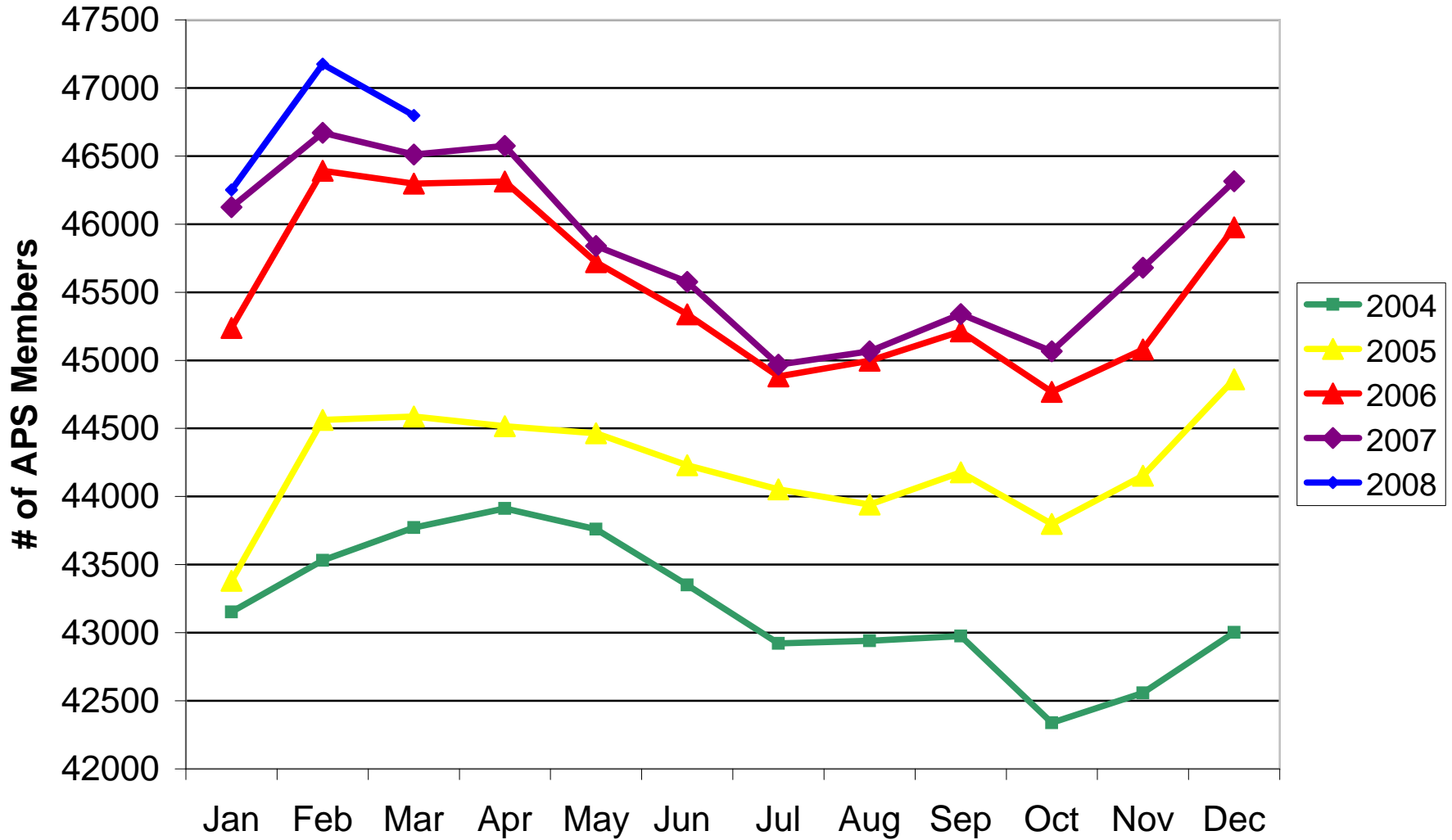
<sup>6</sup> **“Tackling Climate Change in the US: Potential Carbon Emissions Reductions from Energy Efficiency and Renewable Energy,”** American Solar energy Society, January 2007.

<sup>7</sup> **“US Climate Change Technology Program: Strategic Plan,”** Department of Energy, September 20, 2006; **“The Energy Imperative: Technology and the Role of Emerging Companies,”** PCAST, December 1, 2006.

OFFICIAL 2008 UNIT MEMBERSHIP STATISTICS

UNIT	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
<b>DIVISIONS</b>										
Atomic, Molec & Optical	2,525	2,582	2,703	2,780	2,832	5.84%	5.94%	5.94%	6.01%	6.12%
Astrophysics	1,759	1,789	1,901	1,979	2,114	4.07%	4.12%	4.18%	4.27%	4.57%
Biological	1,668	1,682	1,783	1,850	1,881	3.86%	3.87%	3.92%	4.00%	4.07%
Computational	2,004	1,925	1,985	2,049	2,129	4.63%	4.43%	4.36%	4.43%	4.60%
Condensed Matter	5,410	5,380	5,292	5,387	5,592	12.51%	12.38%	11.63%	11.64%	12.09%
Chemical	1,815	1,758	1,742	1,788	1,782	4.20%	4.04%	3.83%	3.86%	3.85%
Fluid Dynamics	1,596	1,580	2,610	2,655	2,735	3.69%	3.64%	5.73%	5.74%	5.91%
Polymer	1,278	1,232	1,252	1,342	1,254	2.95%	2.83%	2.75%	2.90%	2.71%
Laser Science	1,321	1,295	1,330	1,331	1,363	3.05%	2.98%	2.92%	2.88%	2.95%
Materials	2,228	2,259	2,315	2,419	2,453	5.15%	5.20%	5.09%	5.23%	5.30%
Nuclear	2,420	2,401	2,452	2,519	2,624	5.59%	5.52%	5.39%	5.44%	5.67%
Physics of Beams	1,165	1,144	1,227	1,180	1,210	2.69%	2.63%	2.70%	2.55%	2.62%
Particles & Fields	3,299	3,291	3,368	3,371	3,470	7.63%	7.57%	7.40%	7.28%	7.50%
Plasma	2,520	2,489	2,518	2,520	2,498	5.83%	5.73%	5.53%	5.44%	5.40%
<b>TOPICAL GROUPS</b>										
Few Body Systems	324	341	330	327	320	0.75%	0.78%	0.72%	0.71%	0.69%
Fundamental Constants	378	398	415	433	419	0.87%	0.92%	0.91%	0.94%	0.91%
Gravitation	654	729	817	921	1,018	1.51%	1.68%	1.79%	1.99%	2.20%
Hadronic	268	304	337	355	366	0.62%	0.70%	0.74%	0.77%	0.79%
Instr & Measure Sci	545	548	582	601	606	1.26%	1.26%	1.28%	1.30%	1.31%
Magnetism	680	677	705	778	836	1.57%	1.56%	1.55%	1.68%	1.81%
Plasma Astrophysics	258	274	343	365	370	0.60%	0.63%	0.75%	0.79%	0.80%
Quantum Information		218	557	755	886		0.50%	1.22%	1.63%	1.91%
Shock Compression	379	335	379	367	407	0.88%	0.77%	0.83%	0.79%	0.88%
Statistical & Non-Linear	789	808	841	895	944	1.82%	1.86%	1.85%	1.93%	2.04%
<b>FORUMS</b>										
Education	4,087	4,214	4,421	4,598	4,646	9.45%	9.70%	9.71%	9.93%	10.04%
Graduate Student Affairs	1,128	1,827	2,426	2,865	3,343	2.61%	4.20%	5.33%	6.19%	7.23%
History	3,141	3,389	3,725	3,854	3,928	7.26%	7.80%	8.18%	8.33%	8.49%
Indust & Applied	5,431	5,792	6,364	6,644	6,740	12.55%	13.33%	13.98%	14.35%	14.57%
International	2,588	2,853	3,246	3,437	3,608	5.98%	6.56%	7.13%	7.42%	7.80%
Physics & Society	4,624	4,845	5,311	5,548	5,805	10.69%	11.15%	11.67%	11.98%	12.55%
<b>SECTIONS</b>										
California	1,054	1,369	1,904	2,072	2,305	2.44%	3.15%	4.18%	4.48%	4.98%
Four Corners	862	911	1,025	1,113	1,260	1.99%	2.10%	2.25%	2.40%	2.72%
New England	1,872	1,965	2,234	2,327	2,413	4.33%	4.52%	4.91%	5.03%	5.22%
New York State	1,871	1,938	2,167	2,290	2,436	4.33%	4.46%	4.76%	4.95%	5.26%
Northwest	829	916	1,038	1,106	1,160	1.92%	2.11%	2.28%	2.39%	2.51%
Ohio	1,132	1,211	1,375	1,516	1,498	2.62%	2.79%	3.02%	3.27%	3.24%
Southeastern	1,905	2,069	2,323	2,544	2,728	4.40%	4.76%	5.10%	5.50%	5.90%
Texas	1,214	1,226	1,353	1,502	1,534	2.81%	2.82%	2.97%	3.24%	3.32%

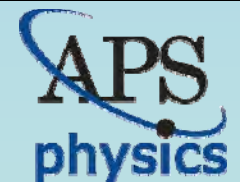
# APS Member Totals 2004-2008



## FY 08 Appropriations Final

Science Account	FY 05 (\$B)	FY 06 (\$B)	FY 07 (\$B)	FY 08 (\$B)						
				Req	Pct	House	Pct	Sen	Pct	Final
DOE SC	<i>3.57</i>	<i>3.47</i>	3.84	4.40	+14.6	4.52	+17.7	4.50	+17.1	<i>3.85 (+0.3%)</i>
DOE EERE	1.16	1.16	1.46	1.23	-15.6	1.90	+30.1	1.71	+17.1	1.72 (+18.2%)
NSF	5.48	5.59	5.84	6.43	+10.1	6.51	+11.4	6.55	+12.1	6.07 (+3.8%)
R&RA	4.23	4.45	4.76	5.13	+7.8	5.14	+8.0	5.16	+8.4	4.82 (+1.2%)
MREFC	0.165	0.234	0.191	0.245	+28.2	0.245	+28.2	0.245	28.2	0.221 (+15.7%)
EHR	0.844	0.700	0.698	0.751	+7.6	0.823	+17.9	0.851	21.9	0726 (+4.0%)
NIST Core	<i>0.400</i>	<i>0.431</i>	0.493	0.594	+20.5	0.630	+28.0	0.653	+32.0	<i>0.519 (+5.3%)</i>
STRS	<i>0.370</i>	<i>0.383</i>	0.434	0.501	+15.4	0.501	+15.4	0.502	+16.7	0.440 (+1.4%)
CRF	<i>0.030</i>	<i>0.048</i>	0.059	0.094	+59.3	0.129	+119	0.151	+156	<i>0.109 (+85%)</i>
NIST ATP/TIP	0.140	0.079	0.079	0.000	-100.0	0.093	+17.7	0.100	+26.6	0.652 (-17.5%)
DOD 6.1	1.49	1.47	1.53	1.42	-6.9	1.55	+1.3	1.56	+1.9	<i>1.46 (-3.7%)</i>
DOD 6.2	4.70	5.17	5.10	4.36	-14.5	5.08	-0.08	4.65	-8.8	<i>4.16 (-18.4%)</i>
NASA Sci	5.50	5.25	5.25	5.52	NA	5.70	NA	5.66	NA	

*Red italics:* Adjusted for earmarks;





## FY 09 Request and Recent Historical Perspective

Science Account	FY 05	FY 06	FY 07	FY 2008 (\$B)			FY 2009 (\$B)		
	(\$B)	(\$B)	(\$B)	Req	Final	<i>Final</i>	Req	%	<i>5.59</i>
DOE SC	<i>3.57</i>	<i>3.47</i>	3.81	4.40	3.97	<i>3.85</i>	4.72	+18.9	<i>+22.7</i>
DOE EERE	1.16	1.16	1.46	1.23	1.72	<i>1.54</i>	1.26	-27.1	<i>-18.3</i>
NSF	5.48	5.59	5.84	6.43	6.07	<i>6.07</i>	6.85	+13.0	<i>+13.0</i>
R&RA	4.23	4.45	4.76	5.13	4.82	<i>4.82</i>	5.59	+16.0	<i>+16.0</i>
MREFC	0.165	0.234	0.191	0.245	0.221	<i>0.221</i>	0.145	-33.2	<i>-33.2</i>
EHR	0.844	0.700	0.698	0.751	0.726	<i>0.726</i>	0.790	+8.9	<i>+8.9</i>
NIST Core	<i>0.400</i>	<i>0.431</i>	0.493	0.594	0.601	<i>0.519</i>	0.634	+5.5	<i>+22.2</i>
STRS	<i>0.370</i>	<i>0.383</i>	0.434	0.501	0.441	<i>0.440</i>	0.535	+21.3	<i>+21.6</i>
CRF	<i>0.030</i>	<i>0.048</i>	0.059	0.094	0.160	<i>0.109</i>	0.099	-38.1	<i>-9.2</i>
NIST ATP/TIP	0.140	0.079	0.079	0.000	0.065	<i>NA</i>	0.000	-100	<i>-100</i>
DOD 6.1	1.49	1.47	1.53	1.42	1.63	<i>1.47</i>	1.70	+4.0	<i>+15.7</i>
DOD 6.2	4.70	5.17	5.10	4.36	5.06	<i>4.16</i>	4.26	-16.1	<i>+2.0</i>
NASA Sci	5.50	5.25	5.25	5.52	5.58	<i>TBD</i>	NA	NA	<i>NA</i>

*Red italics:* Adjusted for earmarks;



# Outlook for the FY 2009 Budget

Don't hold your breath waiting for relief!

# Appendix I

## Report of Program Committee

(members: Andrew Belmonte, Bob Behringer, Wolfgang Loser, Rich Lueptow, Phil Marcus (chair), Beverley McKeon, Jim Riley)

Eight on-time proposals and one late proposal were received for minisymposia at the November 2009 Annual Meeting in San Antonio. In San Antonio there will be a meeting room dedicated to minisymposia. That room will not be used for any of the 8 regular parallel sessions. Therefore, up to 8 minisymposia can be held, although only 5 of the 8 sessions will be long enough to accommodate 6 26-minute talks (the standard for minisymposia). The proposals were ranked, and after much discussion and email debate, it was decided to choose 6 of the minisymposium proposals. This is feasible because one of the proposals had only 5 proposed speakers and so could fit into the schedule (but see below).

The winning proposals are:

- 1) An Education proposal by Jean Hertzberg and John Cimbala on Videos and Multimedia for Fluids Instruction
- 2) A Tutorial proposal by John Dabiri on Lagrangian Coherent Structures
- 3) An International/ Tutorial/Focus proposal by W. van Sciver on Flow Visualization in Low Temperature He
- 4) A Focus/International proposal by Detlef Lohse on High Rayleigh Number Convection
- 5) A Focus/International proposal by Osman Basaran on Tip Streaming
- 6) A Tutorial proposal by David Kassooy and Scott Stewart on Computational Challenges in Modeling Transient Detonation.

One of the proposals that was turned down was for Astrophysical flows and may be more suitable for the March Meeting. This is being discussed with the authors of the proposal. The other proposal that was turned down was considered too narrow in terms of the speakers (all from the DOE weapons labs), and we are suggesting that the authors broaden the topic and participants and re-submit next year.

The Education proposal was very well received, but has only 5 speakers. It has been suggested that if the authors are willing, they expand the list of speakers and occupy two of the 5-speaker sessions.

Preparations are underway for the general APS March 2009 meeting in Pittsburgh. DFD has 2.5 invited sessions. The deadline is October 10 and an email to our membership inviting proposals will be sent presently. The 0.5 session means that we need to co-sponsor the session with another

Division that meets in March. (Some Divisions such as Astrophysics and Plasma meet in April). The most likely choice for a co-sponsor is DCOMP. The number of sessions a Division is allotted is *not* based on membership; it is determined by the attendance at the previous March meeting.

## Appendix J

Publications and Media Committee Teleconferences Summary 4/28/08-5/1/08  
Jean Hertzberg  
University of Colorado, Boulder  
Chair 2008

First teleconference, 4/28/08, with Jean Hertzberg, Bud Homsy (Vice-Chair), Karen Flack, Scott Morris, Eric Lauga, Andy Cook, Jim Duncan  
Second 4/29/08 Jean H and Eberhard Bodenschatz  
Third 5/1/08 Jean H and John Bush

We started with a brief discussion of the archiving process for the video entries to the Gallery of Fluid Motion. We agreed that archiving is an excellent idea, but there was some concern that the Cornell arXiv process as set up by Steve Pope was a bit cumbersome and even difficult. Jim Duncan had tried it, and not succeeded initially, as did a volunteer, Said Shakerin, who was unfamiliar with arXiv. Currently, two separate submissions are needed, each with different documentation requirements, one to eCommons.org, and one to arXiv.org. In particular arXiv requires a minipaper including a separate abstract and body, and references, as well as strict requirements on file format (no Microsoft allowed). Some of the issues raised were that such requirements might put people off of submitting, particularly those who are not able to navigate the requirements easily. Also, the required MPEG format is not the highest quality. While the minipaper requirements are not onerous, being equivalent to the requirements for the winning entries to be published in Phys Fluids, they are at a much higher level than the requirements for a poster Gallery entry. Will this discourage the more artistically oriented entries? It's also possible that a video may represent a work in progress, and the authors may not want the video to be archived. On the other hand, if archiving is not required, will many authors bother to do it? Finally, it's not clear how the interaction will go with the local organizing committee, who, together with Jim Duncan, have the responsibility to register and assemble the videos for presentation at the fall meeting. Thus, there are two functions - archiving and making it easy for the local organizing committee to collect videos for the Gallery. These might be handled in separate ways and the archive might be an impediment to the second. Jim Duncan said he would look into the process in more detail, and come up with a workable plan for this fall. We propose that Jim Duncan be made a permanent committee member in any case.

We then moved on to a discussion of possible Committee actions for this year. Here is our official charge: "The [Publications and Media Committee](#) shall solicit articles for *Physics News*, shall interact with the editors of the *Physics of Fluids*, *Physical Review* and *Physical Review Letters* on matters of interest to the Division, and shall serve as the Divisional interface with editors and publications for the popular press. The Publications Committee shall promote the work of the Division and the advancement of fluid dynamics through media outlets."

I am interpreting this to include all levels of education outreach as well; communicating with the public will always entail some degree of education. The External Affairs committee has some responsibility for public education as well, but most of their time is

taken up with getting foreign scholars to the annual meeting. I've chatted with the current chair, Kim Hill, to coordinate our efforts in this regard. I also talked with Alan Chodos and Jessica Clark, from APS, and got some additional ideas.

#### Action Items:

1. Solicit articles for APS print media such as Physics News, Physics Today etc. Eric Lauga volunteered to take the lead on this, and John Bush volunteered to help. There was particular enthusiasm for collecting submissions for the history column in Physics News by tapping the fluids history enthusiasts in our community. Eric will contact the editors and explore the process to get articles in Physics Today. A good source of material would be the DFD invited speakers.
2. Facilitate the use of Gallery of Fluid Motion images on the Physics Central website. Jessica Clark, APS Public Outreach Coordinator, runs the Physics Central website (<http://www.physicscentral.com/>), which is the APS's primary public outreach vehicle. She has tried to use Gallery of Fluid Motion images there in the past, but ran into two issues: you need a subscription to view the gallery, and the explanations were too high level for her purposes. The subscription issue may not be visible to most of us with academic IP addresses, as our institutions very likely have subscriptions, but ironically, Jessica does not have access to many of the AIP journals. Would it be possible to actually mirror the Gallery content on the DFD site?

Bud Homsy volunteered to straighten this out. Also, the winners of the Gallery should be asked to submit a high-school level abstract in addition to their Phys Fluids documents. Jim Duncan agreed to oversee this.
3. Also on the Physics Central site, PhysicsQuest is a middle school competition that consists of four physical science experiments centered on a mystery involving a famous physicist. Each of the experiments gives students a clue that they need to solve the mystery. Classes can submit their answers online and be entered into a random drawing for prizes. PhysicsQuest kits are provided free to registered classrooms. So far they've done one on Einstein, and one on Madame Curie. We talked about how for a future competition some of the experiments could be focused on fluid physics, and/or be focused on a famous fluid dynamicist. Da Vinci came to mind.

We discussed this a bit, and decided to let it percolate. Eric is interested.
4. The Physics Central site also hosts Adopt-a-Physicist, which consists of three-week online forum sessions, owned by a physicist. In addition to faculty, non-academics are welcome as owners.

We plan to ask for volunteers from the Division in one of the DFD newsletters or emails. Eric will draft a request.
5. Periodically Physics Central sponsors educational video contests, and solicits videos on, for example, the physics of football. We could suggest a fluids-oriented topic.

Same as 3. John Bush mentioned a presentation he has on fluid dynamics of sports balls, that might work with it

6. Organize the high school teacher workshop for the San Antonio DFD meeting this fall; Sharath Grimaji, was looking for someone to lead this effort.

Karen Flack volunteered to take this on. Jean gave her the curriculum from two years ago as a starting point. Someone from the External Affairs committee may be willing to help; Karen will contact Kim Hill, and the LOC person Sharath recommended, Huidan Yu. Bud volunteered to make a presentation at San Antonio, round up some free copies of Multimedia Fluid Mechanics. At the March APS meeting, there are a suite of K-12 teacher workshops. We should contact Ed Lee about doing one featuring fluids next year.

Karen pointed out that this would be a natural extension of the DFD teacher workshop. Bud will help too.

7. Promote interesting results to traditional external media such as Science News, the New York Times, etc.

Scott Morris volunteered to work on this, but this is a large undertaking.. Eberhard Bodenschatz said his institute has a new outreach person who might be able to contribute; will put in touch with Scott. John Bush pointed out that there are two ways to get a 'media frenzy' going; top down, from direct contacts with a wide range of media/press, and bottom up, where one outlet will pick up a topic, and then it propagates. For example, journals such as Science and Nature routinely issue press releases that sometimes take off. Couldn't JFM (John will contact) and Phys Fluids do the same? Similarly, the APS always has a press office at the March meetings, should we consider such? All of our institutions have some sort of press relations people, can we use them? This involves real work, and will take real resources. Should the DFD sponsor (\$\$) such efforts? Jim Duncan hinted that the Ad Hoc Media Committee has a concrete proposal in this regard.

8. Organize existing, and/or create new fluids physics modules for K-12 use, such as via the TeachEngineering.com website, or eFluids.com.

Jean is putting along with this in the form of a pre-DFD meeting workshop on fluids education. One topic will be a fluids education web portal. Eberhard mentioned some resources at DLR; a school lab, and a local 'tornado teacher'. He emphasized the need to keep a world-wide perspective in all these efforts. Much is to be gained through cooperation.

9. Interact with state and national science standards committees, to promote fluid physics as a topical area. Earth science (volcano flows, oceans and weather) and aerodynamics are sometimes recognized, but elementary mechanics are almost always taught using solid examples only. However, Bernoulli and statics are included on the Advanced Placement exams.

Some thought this was going far afield from the Committee charge. Do we need an Education committee?

# Appendix K

## APS/DFD External Affairs Committee

Summary Report for the  
May 2008 DFD Executive Committee Meeting

Kimberly Hill, Chair (12/08)  
Mike Plesniak, Vice-Chair (12/09)  
Jim Brasseur (12/08)  
Jane Wang (12/09)  
John DeBruyn (12/09)  
Shiyi Chen (12/09)  
Jon Freund (12/10)

This year the External Affairs Committee is involved in three principal tasks. The first two are ongoing and the third is new for our committee:

- 1) As in previous years, the Committee will oversee selection and distribution the Travel Award Subsidy Grants for the DFD Annual Meeting. The External Affairs Committee Vice-Chair, Mike Plesniak, has agreed to oversee most aspects of the selection process as well as follow-on actions needed to provide recipients with their award checks. Based on experience from last year we have decided to divide the tasks between chair and vice-chair as follows: the chair will be the primary contact with the executive committee and the local organizing committee including the forwarding of awardee names to the local organizing committee and to the DFD Treasurer. The vice-chair will organize the applications and evaluation process within the External Affairs Committee and communicate with the recipients. The latter includes sending emails of congratulations and regrets to applicants as well as sending out and collecting W-8/W-9 IRS forms from awardees.

The check cashing arrangements are important for awardees from countries where it is difficult to cash a US check upon return, however this part of the process caused considerable difficulties for the local organizing committee. It is recommended that check cashing at future meetings be limited to awardees with clear needs.

- 2) Last year, the Committee initiated a new project to produce T-shirts designed to promote awareness of and interest in fluid dynamics, to be given free of charge to students attending the student lunch, with the remainder to be sold at-cost at the DFD Annual Meeting. The Executive Committee approved this idea at the Spring telecon, and provided funds to produce 540 T-shirts for last year's meeting.

Nonproprietary artwork and a tagline were developed for the project in a style intended to meet the goals of the project. Several T-shirt production shops in the Ann Arbor area were contacted for production options and price quotes; local production was viewed as essential to oversee production quality. Final cost of producing the 540 shirts and shipping them to the Salt Lake City Convention Center was \$4063.48. A 2-3% credit card processing charge must be added to each credit card purchase,



bringing the sale price to \$7.75 per shirt. Arrangements for displaying and selling these shirts were made with the local organizing committee.

There are still several boxes of T-shirts that remain from last year's meeting. We recommend that these be displayed prominently at this year's meeting. We will work with the local organizing committee to do so.

- 3) We plan to work with Karen Flack of the APS-DFD Publications and Media Committee who has taken the lead on the Teachers Workshop at the APS-DFD meeting. We do not yet have details as to what that will entail.
- 4) We plan to help with the effort of arranging for group transportation for scientists from Mexico. We have been asked to serve primarily as a clearing house to monitor what money is needed, in total, what money has been raised, and what additional money is needed for this effort to be successful.

Other potential tasks:

- 1) The local organizing committee is arranging for group transportation for scientists from Mexico. I have offered the help of the committee but have not received any specific requests, except regarding funding. I communicated my understanding that we are not involved in the decisions regarding the division of funding, but would like clarification on this.
- 2) In the last year or so, the DFD Executive Committee tasked the External Affairs Committee with forming an Ad Hoc Subcommittee on Fluid Dynamics Funding to look into ways to increase funding in fluid dynamics and report back to the XC. Werner Dahm, who was chair at the time, asked Jim Brasseur and Mike Plesniak to take on this task. They worked with Lex Smits on this, and I believe this has moved out of the "jurisdiction" of the External Affairs Committee. We would like clarification if the Executive Committee would like us to continue our committee's formal involvement in this.

Kimberly Hill  
Chair, External Affairs Committee