

A Division of the American Physical Society

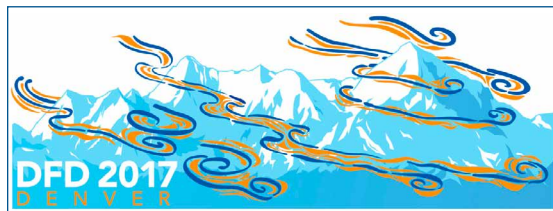


Downtown Denver skyline and Longs Peak, Rocky Mountains

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



### Denver, CO November 19-21, 2017

Nearly 3000 abstracts will be presented at the 70th Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD) meeting in Denver, CO, November 19-21, 2017 at the Colorado Convention Center. The meeting is being hosted by the University of Colorado, Boulder with support from the University of Colorado, Colorado Springs; Colorado State University; and Colorado School of Mines.

### Denver and the Colorado Convention Center

Located in the heart of downtown Denver, the Colorado Convention Center is situated in one of the most walkable and visitor-friendly downtowns in the country. There are 200 named peaks visible from Denver, including 32 that soar to 13,000 feet (4,000 meters) and above. The mountain panorama visible from Denver is 140 miles (225 km) long. Within a mile radius, downtown Denver has three major sports stadiums, the nation's second-largest performing arts center, three colleges with 30,000 students, an assortment of art and history museums, a mint that produces 10 billion coins a year, a river offering white water rafting, and over 300 restaurants. For more information on Denver and its surrounding areas go to: <https://www.denver.org>

### Hotel Accommodations

Book your reservation NOW! Hotels are almost SOLD OUT! Discounted conference rates are available until October 23rd or until the room blocks at the host hotels are sold out. A valid credit card is needed to guarantee your reservation. Reservations need to be cancelled 72 hours prior to arrival to avoid a cancellation fee equal to one night room and tax (14.75%).

**You may make a reservation at any one of the contracted hotels by going to our reservation website:**

<https://aws.passkey.com/e/49143327>

#### Or by contacting:

APS DFD Housing Bureau

Hours: Monday - Friday from 8:30am to 5:00pm PT

Toll Free: 1-877-226-1859

Email: [housing@apsdfd2017.org](mailto:housing@apsdfd2017.org)

#### 2017 APS DFD Hotel List

**Hyatt Regency Denver at Colorado Convention Center (Headquarter Hotel)**

650 15th Street, Denver, CO 80202

#### Rates:

\$149 + Tax: Single/Double Room Occupancy

\$174 + Tax: Triple Room Occupancy

\$199 + Tax: Quad Room Occupancy

Rates include complimentary high speed internet.

#### Crowne Plaza Denver Downtown

SOLD OUT

#### Embassy Suites Denver - Downtown Convention Center

SOLD OUT

#### Hampton Inn & Suites Denver Downtown - Convention Center

SOLD OUT

#### Hilton Garden Inn Denver Downtown

SOLD OUT

#### Homewood Suites Denver Downtown - Convention Center

SOLD OUT

### Registration

To register for the meeting go to:

<https://aps17.registerat.com>

Registration Type	Received between 10/23 - 11/21
Member	\$730
Reciprocal Society Member	\$730
Non-Member	\$875
Retired Member (with APS Senior Membership)	\$375
Graduate Student Member**	\$370
Undergraduate***	\$150
Additional Reception Ticket	\$100

*\*\*Graduate Students who are not APS Members must pay the nonmember rate unless joining at the time of registration. 1st year is free for first time members in the U.S., Canada, or Mexico. Includes (2) free Divisions or Topical Groups for all students.*

*\*\*\*Undergraduate registrations do not include a ticket to the Sunday night reception. Reception tickets may be purchased for \$100.*

### Key Dates

#### Registration Deadlines

#### On-Site Registration Rate

Oct 23 – Nov 21, 2017

#### Cancellation Deadline

(no registration refunds past this date)

Nov 7, 2017

#### Hotel Reduced Rate Ends

Oct 23, 2017 or earlier if block sells out

#### Gallery of Fluid Motion (GFM)

#### GFM Poster and Video Submission: PAST

Remember: For those that submitted a video entry the uploading deadline was Oct 6, 2017. For those who submitted a poster, please bring your poster to the meeting.

## Awards Program

Each year the APS Division of Fluid Dynamics presents the Fluid Dynamics Prize, the Francois N. Frenkiel Award, the Andreas Acrivos Dissertation Award, and the Stanley Corrsin Award. The 2017 award winners are listed below and each awardee will give a lecture at the meeting.

### 2017 Fluid Dynamics Prize Recipient

Detlef Lohse, University of Twente  
*Ultimate Rayleigh-Bénard and Taylor-Couette turbulence*

The citation reads, "For profound and wide-ranging contributions to our understanding of fluid turbulence, multiphase flow, and granular flows; for outstanding contributions to the teaching and training of future fluid dynamicists; and for long-standing service to the international fluid dynamics community."

### 2017 Stanley Corrsin Award Recipient

Jens Eggers, University of Bristol  
*The role of singularities in hydrodynamics*

The citation reads, "For analysis of singularities as a unifying theme for physical and mathematical insights into a wide variety of two-phase fluid mechanics problems involving jets, coalescence, entrainment and wetting."

### 2017 François N. Frenkiel Award Recipients

Charles Loussert, Anne Bouchaudy, Jean-Baptiste Salmon, Université de Bordeaux  
*Drying dynamics of confined drops of charged colloidal dispersion*

For the paper titled: Drying dynamics of a charged colloidal dispersion in a confined drop PRF\_1.084201

### 2017 Andreas Acrivos Dissertation Award Recipient

Xiang Yang, Stanford University  
*Modeling drag forces and velocity fluctuations in wall-bounded flows at high Reynolds numbers*

## Invited Talks

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

### Sunday, November 19

Anne-Laure Biance, Université Lyon  
*Electricity in foams: from one soapy interface to the macroscopic material*

David R. Dowling, University of Michigan  
*Hidden acoustic information revealed by intentional nonlinearity*

### Monday, November 20

Matthew Juniper, University of Cambridge  
*Extreme sensitivity in Thermoacoustics*

Jacqueline Chen, Sandia National Laboratories  
*Direct numerical simulation of turbulent multi-stage autoignition relevant to engine conditions*

Kathy Prestridge, Los Alamos National Laboratory  
*Experimental adventures in variable-density mixing*

Jeffrey Morris, Levich Institute, CUNY City College of New York  
*Shear thickening in suspensions: the lubricated-to-frictional contact scenario*

### Tuesday, November 21

Sungyon Lee, University of Minnesota  
*Particle-induced viscous fingering*

Dwight Barkley, University of Warwick  
*Nobody knew turbulent transition could be so complicated*

## Minisymposia

The 2017 annual meeting will feature the following 5 minisymposia. Each presentation is 26 minutes in duration.

### Monday, November 20

**Minisymposium: Flying Fish and Diving Birds**  
**Minisymposium: Recent Advancements in Turbulent Mixing in Stratified Geophysical Flows**  
**Minisymposium: Life Processes at Biologically Intermediate Reynolds Numbers**  
**Minisymposium: Tutorial: Modal Analysis Methods for Future Flows**

### Tuesday, November 21

**Minisymposium: Fluid Dynamics of Atmospheric Clouds**

## Focus Sessions

This year's program includes 14 Focus Sessions. Each presentation is 13 minutes.

### Sunday, November 19

**Unanswered Questions in Viscous Fingering I**  
**Fluid Dynamics of Fire: From Small to Large Scales**  
**Modeling, Computations and Applications of Wetting/Dewetting Problems I**  
**Unanswered Questions in Viscous Fingering II**

### Monday, November 20

**The Physics of Electrospray and Electrospinning: Current Knowledge and State of the Art I**  
**Modeling, Computations and Applications of Wetting/Dewetting II**



**Fluid Dynamics of Atmospheric Clouds I**  
**The Physics of Electrospray and Electrospinning:**  
**Current Knowledge and State of the Art II**  
**Modeling, Computations and Applications of Wetting/**  
**Dewetting III**  
**Fluid Dynamics of Atmospheric Clouds II**

**Tuesday, November 21**

**Fluid Dynamics of Atmospheric Clouds III**  
**Modal Analysis Methods for Fluid Flows I**  
**Life Processes at Biologically Intermediate Reynolds**  
**Numbers**  
**Modal Analysis Methods for Fluid Flows II**

**Posters**

The number of poster research contributions to the Annual DFD Meeting has been growing over the past few years with over 132 posters submitted this year of which 19 are entered into a Student Poster Competition.

Student posters will be judged and awarded 1st and 2nd Prize for “Best Poster” in the following categories: Category 1: Computational fluid dynamics, Category 2: Experimental fluid dynamics

First and second place winners in each category will receive cash awards and certificates. Awardees will also be highlighted in the DFD Newsletter.

While the Technical Poster Session of the DFD Meeting is open to all participants, the Student Poster Competition will constitute a specific opportunity for graduate and undergraduate students to enhance their presentation skills and to build their professional network.

**Gallery of Fluid Motion**

The Gallery of Fluid Motion consists of posters or videos submitted by attendees illustrating the science - and very often also the beauty - of fluid motion. Both computational and experimental entries are encouraged. A panel will select outstanding poster and video entries based on artistic value, scientific content, and originality. The winning entries will be published as a special supplement to *Physical Review Fluids*. The top three winners in each category will be presented the Milton Van Dyke Award consisting of a small monetary prize; a copy of the Album of Fluid Motion; and an award certificate. All posters and videos will be accessible on-line at <http://gfm.aps.org>.

**Audiovisual Equipment**

All rooms will be equipped with an LCD projector, screen, microphone, and pointer. Speakers must provide their own laptop computer to use with the projector.

**New this year, all meeting room projectors will have 1920 by 1200 resolution. Please set your laptop resolutions to 1920 by 1200 (16×10 format). Your images will not display properly if your laptop resolution is higher than the projector’s. The projectors are capable of supporting presentations at a lower resolution including presentations in a 4×3 format.**

A Speaker Ready Room with technicians will be available to help attendees ensure that their presentations work smoothly with the LCD projection equipment. We suggest all presenters visit the Speaker Ready Room in advance of their presentation.

**Exhibitor and Sponsorship Opportunities**

Exhibits will be centrally located in the Mile High Ballroom at the Colorado Convention Center.

For more information on exhibits or sponsorship, please email Margaret McDonald at:

[margaret2@meetingsandmore.net](mailto:margaret2@meetingsandmore.net)

**Conference Reception**

This year the DFD Conference Reception will be held in the Ellie Caulkins Opera House, which is directly adjacent to the Colorado Convention Center, west across Stout Street. **No backpacks will be allowed; please leave them in your hotel room.**

‘The Ellie’ was built in 1908 and beautifully restored in 2005. Food (heavy hors d’oeuvres) and drink will be available throughout the building. You will be able to sit, eat and chat in the main Opera House audience area; other areas will have standing tables and limited seating. Be sure to enjoy the evening’s entertainment, located in these areas of the Opera House:

- Beneath the main lobby, in the Chambers Grant Salon, the Janine Gastineau Ensemble will perform jazz, bossa nova and French chansons.
- In the Studio Loft, above and behind the main Opera House stage, the band Sherefe will perform music from the Balkans and Middle East for listening and dancing.
- In the main lobby area, the acrobatic-yoga troupe Fractal Tribe will offer small scale ‘atmospheric’ performances throughout the space.

Always a highlight of the APS/DFD Meeting, this reception is guaranteed to please as you catch up with old friends and make new ones.

The reception is included in the registration fee for those who register as APS Members, Nonmembers, Graduate Students, and Retired Members. Undergraduate students and guests may purchase tickets for \$100.

## Accompanying Visitor Program

An informal program for people accompanying attendees of the meeting in Denver is being assembled by Caryl Kasoy. Events may include a tour of the Denver Art Museum, a meet-up at a local restaurant, etc. Email [caryl.kasoy@Colorado.EDU](mailto:caryl.kasoy@Colorado.EDU) with questions and suggestions. The group will meet at 10 am November 19, inside the Colorado Convention Center, near the big blue bear sculpture.

## Other Events

Please visit the meeting website for details on other DFD events taking place over the meeting dates: <http://www.apsdfd2017.org/events>

### Saturday, November 18

- Persuasion for Women: Success in Meetings and Negotiations

### Sunday, November 19

- Accompanying Visitors Program
- Young Investigator Workshop
- Fluids Education Lunch
- All the Faces of Fluid Dynamics
- APS/DFD Conference Reception

### Monday, November 20

- Women in Fluids Networking Lunch
- Student Lunch
- Meet the APS *Physical Review* Journal Editor's Reception

### Tuesday, November 21

- APS/DFD Closing Reception & Prize Drawing

## 2017 Meeting Co-Chairs

### Jean Hertzberg

Department of Mechanical Engineering  
University of Colorado, Boulder  
(303) 817-0967  
[hertzberg@colorado.edu](mailto:hertzberg@colorado.edu)

### Peter Hamlington

Department of Mechanical Engineering  
University of Colorado, Boulder  
(303) 492-0555  
[peter.hamlington@colorado.edu](mailto:peter.hamlington@colorado.edu)

## Abstract Submissions

### Vinaya Sathyasheelappa

APS  
(301) 209-3266  
[vinaya@aps.org](mailto:vinaya@aps.org)

## Registration

### Katie McLaughlin

Orchid Solutions  
Phone: (801) 505-4108  
[katie@orchideventsolutions.com](mailto:katie@orchideventsolutions.com)

## Housing

### Monica Malouf

Meetings and More  
Phone: (301) 526-8129  
[monica@meetingsandmore.net](mailto:monica@meetingsandmore.net)

## Exhibiting and Sponsorship Information

### Margaret McDonald

Meetings and More  
Phone: (240) 355-5608  
[margaret2@meetingsandmore.net](mailto:margaret2@meetingsandmore.net)

## General Meeting Information

### Peggy Holland

Meetings and More  
Phone: (301) 641-4150  
[peggy@meetingsandmore.net](mailto:peggy@meetingsandmore.net)

## Future APS/DFD Meetings

### 2018: Atlanta, GA

Professor P.K. Yeung, Meeting Co-Chair  
Professor Donald Webster, Meeting Co-Chair  
Georgia Institute of Technology

### 2019: Seattle, WA

Professor Alberto Aliseda, Meeting Co-Chair  
Professor Dana Dabiri, Meeting Co-Chair  
University of Washington

### 2020: Chicago, IL

Professor Jon Freund, Meeting Chair  
University of Illinois Urbana-Champaign

### 2021: Phoenix, AZ

Professor Marcus Hermann, Meeting Chair  
Arizona State University

## Online Job Board

The meeting website now offers an online job board as an extension to the hardcopy board available at the meeting. To submit a job advertisement for posting, please send a short description (100 words or less) including a link for more information to [Jean.Hertzberg@colorado.edu](mailto:Jean.Hertzberg@colorado.edu).

## Newly Elected Executive Committee Members

The following are the newly elected members of the DFD Executive Committee. Their terms will begin immediately after the close of the 2017 APS DFD meeting.



**Chair-Elect**  
Charles Meneveau,  
Johns Hopkins University



**Vice-Chair**  
Minami Yoda,  
Georgia Institute of  
Technology



**Member at Large**  
Sarah Waters,  
University of Oxford



**Member at Large**  
David Saintillan,  
University of California-  
San Diego

# APS/DFD 2016-2017 Leadership & Contact Information

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

## COMMITTEE

### Chair:

**Robert Moser**  
(11/16 - 10/17)  
*Univ of Texas, Austin*

### Chair-Elect:

**Eckart Meiburg**  
(11/16 - 10/17)  
*Univ of California - Santa Barbara*

### Past Chair:

**Ellen Longmire**  
(11/16 - 10/17)  
*Univ of Minn - Minneapolis*

### Councillor:

**Ann Karagozian**  
(01/15 - 12/18)  
*Univ of California - Los Angeles*

### Secretary/Treasurer:

**Jonathan Freund**  
(11/15 - 10/18)  
*Univ of Illinois - Urbana*

### Member-at-Large:

**Paul Linden**  
(11/16 - 10/17)  
*Univ of Cambridge*

### Member-at-Large:

**Shelley Anna**  
(01/15 - 12/17)  
*Carnegie Mellon Univ*

### Member-at-Large:

**John Dabiri**  
(01/15 - 12/17)  
*Caltech*

### Member-at-Large:

**Anette Hosoi**  
(11/15 - 10/18)  
*MIT*

### Member-at-Large:

**Detlef Lohse**  
(11/15 - 10/18)  
*Univ of Twente*

### Member-at-Large:

**Jeff Eldredge**  
(11/16 - 10/19)  
*Univ of California - Los Angeles*

### Member-at-Large:

**Katherine Prestridge**  
(11/16 - 10/19)  
*Los Alamos Natl Lab*

## COMMITTEES

### NOMINATING

**COMMITTEE**  
8 MEMBERS, STAGGERED  
2-YEAR TERMS

**Kathy Prestridge**  
(12/17)  
Chair

### Bud Homsy

(12/18)  
Vice-Chair

### Serafim Kalliadasis

(12/18)

### Haecheon Choi

(12/18)

### Alison Marsden

(12/18)

### David Hu

(12/17)

### David Saintillan

(12/17)

### Daniel Bodony

(12/17)

### PROGRAM COMMITTEE

8 MEMBERS, STAGGERED  
3-YEAR TERMS

### Eckart Meiburg

Chair

### Robert Moser

Vice-Chair

### Shawn Shadden

(12/18)

### Michael Plesniak

(12/18)

### Nicholas Hutchins

(12/18)

### Patrice Le Gal

(12/17)

### Petia Vlahovska

(12/17)

### Roseanna Zia

(12/17)

### FELLOWSHIP

**COMMITTEE**  
8 FELLOWS, STAGGERED  
2-YEAR TERMS

### James Wallace

(12/17)

Chair

### Eckart Meiburg

Vice-Chair

### Yoshi Kimura

(12/18)

### Ken Christensen

(12/18)

### Ching-Long Lin

(12/18)

### Ross Griffiths

(12/17)

### Z. Jane Wang

(12/17)

### Minami Yoda

(12/17)

### EXTERNAL AFFAIRS

**COMMITTEE**  
8 MEMBERS, STAGGERED  
3-YEAR TERMS

### Mihailo Jovanovic

(12/18)

Chair

### Melissa Green

(12/18)

Vice-Chair

### Meredith Metzger

(12/19)

### Stephen Morris

(12/19)

### Roberto Zenit

(12/18)

### Kausik Sarkar

(12/18)

### Anya Jones

(12/17)

### Jens Fransson

(12/17)

### FLUID DYNAMICS PRIZE

**SELECTION COMMITTEE**  
8 MEMBERS, STAGGERED  
2-YEAR TERMS

### Alexander Smits

(12/18)

Chair

### Krishnan Mahesh

(12/17)

Vice-Chair

### Yukio Kaneda

(12/18)

### Sascha Hilgenfeldt

(12/18)

### Kathleen Steeb

(12/18)

### Michael Brenner

(12/17)

### Anne de Wit

(12/17)

### Howard Stone

2016 Award Winner

### CORRSIN AWARD

**SELECTION COMMITTEE**  
8 MEMBERS, STAGGERED  
2-YEAR TERMS

### Karen Flack

(12/17)

Chair

### S. Balachandar

Vice-Chair

(12/18)

### Randy Ewoldt

(12/18)

### Rajat Mittal

(12/18)

### Grae Worster

(12/17)

### Stephen Pope

(12/17)

### Eckart Meiburg

(12/17)

### Ivan Marusic

2016 Award Winner

### ACRIVOS AWARD

**SELECTION COMMITTEE**  
7 MEMBERS, STAGGERED  
2-YEAR TERMS

### Satish Kumar

(12/17)

Chair

### Mark Stremier

(12/18)

Vice Chair

### Mingjun Wei

(12/18)

### Nick Ouellette

(12/18)

### Carlos Hidrovo

(12/18)

### Dennice Gayme

(12/17)

### Antonio Ferrante

(12/17)

### Robert Martinuzzi

(12/17)

### FRENKIEL AWARD

**SELECTION COMMITTEE**  
7 MEMBERS, STAGGERED  
2-YEAR TERMS

### Joe Klewicki

(12/17)

Chair

### Joana Austin

(12/18)

Vice-Chair

### Carlos Pantano

(12/18)

### Peter Schmid

(12/18)

### Donald Webster

(12/17)

### Emily Ching

(12/17)

### Alexi Poludnenko

2016 Award Winner

### COMMITTEE ON MEDIA &

**SCIENCE RELATIONS**  
6 MEMBERS, STAGGERED  
2-YEAR TERMS

### Tadd Truscott

(12/17)

Chair

### Nicole Sharp

(12/18)

Vice-Chair

### Juan Carlos del Alamo

(12/18)

### Pavlos Vlachos

(12/18)

### Luciano Castillo

(12/18)

### Andrew Belmonte

(12/17)

### COMMITTEE ON

**EDUCATIONAL & CAREER**

**OUTREACH**

6 MEMBERS, STAGGERED  
2-YEAR TERMS

### Aline Cotel

(12/17)

Chair

### Laura Miller

(12/18)

Vice-Chair

### Maciej Balajewicz

(12/18)

### Ebenezer

**Gnanamanickam**

(12/17)

### Mitul Luhar

(12/17)

### Nathalie Vriend

(12/17)

### GALLERY OF FLUID

**MOTION COORDINATOR**

**Ken Kiger**

### 2015-2019

### Beverley McKeon

APS representative on US  
National Committee for  
Theoretical and Applied  
Mechanics