



# PARTICULARS

*the E-Newsletter of the American Association for Aerosol Research*

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## 2013 Annual Conference Sponsors

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## Letter From the Editor

Welcome to the summer 2013 edition of Particulars, the newsletter of AAAR. This issue is packed with news about aerosols from around the world and beyond. Barbara Turpin provides a letter from the president, and Murray Johnston welcomes you to the annual conference in Portland, OR.

I took the time to reflect on my professional path as I considered writing this letter. I have had the great fortune to have things fall into place for me along the years. I recall someone telling me in 1993 that "aerosols are dead after the development of PM10". Wow, how wrong that person was. Fortunately, I did not listen so that I could be a part of the field of aerosol research that continues to blossom and now serves as fundamental technology in numerous other fields.

Perhaps most important are the many people that I have met and formed lasting friendships with over the years. I want to thank my academic advisors (Dale Lundgren for MS and Dave Leith for PhD) for helping me find and stick with this exciting field. Last year, I attended a party to celebrate Dale's 80th birthday and 40th year of teaching at the University of Florida. The number of alumni attending and their enthusiasm to support an endowed student scholarship attests to the many lives that Dale positively influenced over his career. Also last year, Dave Leith became professor emeritus at UNC. Of the many people I could say thanks to, Maryanne Boundy-Dave's laboratory manager-deserves special mention. Together, Dave and Maryanne nurtured many aerosol scientists who continue to actively participate in AAAR.

So AAAR has special meaning based in science but shaped by unique collaborations with the potential to form lasting friendships. I look forward to seeing you in Portland!

Sincerely,  
Tom Peters, University of Iowa

## 2013 Annual Conference Update

Dear AAAR Colleagues,

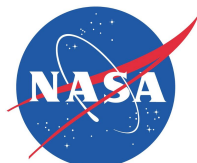
The 32nd AAAR Annual Conference will take place in Portland, Oregon, on September 30 to October 4, 2013. I am excited about this year's conference and happy to report that preparations are on schedule. The program will include tutorial sessions on Monday, which I especially encourage you to register and attend, a career panel sponsored by the Young Investigators Committee on Monday night, an exhibition from Tuesday through Thursday, an outreach program for undergraduate students at local universities on Wednesday, and poster and platform presentations taking place from Tuesday morning through Friday noon. The plenary speakers this year will be, in order of presentation: Thomas Peters (University of Iowa), Alan Weimer (University of Colorado), Jonathan Reid (University of Bristol), and Lynn Russell (University of California, San Diego). In addition to a full slate of aerosol-related research topics, we will have three special symposia this year, Bioaerosols: Characterization and Environmental Impact; Engineered Nanoparticles: Emissions, Transformation and Exposure; and Portable and Inexpensive Sensor Technology for Air Quality



### AEESP Lecture



### Student Travel Support



Monitoring: The Future is Now. This promises to be an excellent technical conference at a great venue that you certainly do not want to miss!

Those of you who submitted your conference abstracts before the March 25 deadline should already have a poster or platform assignment for your presentation listed in the preliminary technical program. Abstracts submitted between March 25 and the late breaking poster submission deadline of July 22 will be added to the conference program in early August. Please note that abstract submission dates were much earlier this year because of the earlier date of the annual meeting.

I have a special request to all corresponding authors: if for any reason you cannot present your paper, please contact us immediately via e-mail at support@aaarabstracts.com. This will minimize the number of corrections to the program once it goes into print in late August.

I highly encourage you to arrange your hotel stay in advance. The conference will be held at the Oregon Convention Center, which is located along the Portland light rail system providing easy access to the airport and downtown area. AAAR has arranged for a block of rooms at two nearby hotels: DoubleTree by Hilton and Red Lion Hotel. The block of rooms reserved for the AAAR attendees is expected to fill quickly, so please do not wait until the last moment to make your reservations. Information about hotel reservations is available at the AAAR conference web site.

We eagerly look forward to your participation at the 32nd Annual Conference of the American Association for Aerosol Research in Portland in this fall!

Murray Johnston, Conference Chair

## President's Message

This is an exciting time for AAAR. We have largely completed the goals we set for ourselves in our strategic plan 5 years ago, and we are looking to the future. Shortly we will be asking for input from you, the members, in order to set our goals for the next 5 years. In anticipation, we are doing the following:

**Understanding our Current Membership:** When you registered for the conference last year and this, we asked some (optional) questions about your employment sector, age, gender and working group affiliation. We will use these data (in summary form only) to better understand who we are and how our membership is changing. For example, we now know that over 70% of our members are from academia.

**On-line Education Task Force:** The biggest benefit of AAAR membership is the opportunity to remain abreast of the current advancements in aerosol science at our conference and through our journal. Yet, there are people who are not able to attend our conference and others who are not aware of what they are missing. Distance learning (on-line education) might help AAAR bring an aerosol education to a broader cross-section of potential members, with the goal of spreading science literacy, expanding our membership, and broadening the impact of our Association. It might help AAAR to reach more government and industry professionals.

For this reason, and with the approval of the Board of Directors, I have appointed an On-line Education Task Force, to learn what other associations are doing, examine the options, and recommend a direction, strategy and course of action to the Board. I am pleased to announce the members of this Task Force:

Chris Sorensen (Chair), Rob Caldow, Rick Flagan, Arsineh Hecobian, Mark Hoover, Mike Kleeman, V. Faye McNeill, and Liya Yu.

Please feel free to reach out to them to share your own thoughts on this topic. As always, AAAR is blessed to have energetic and dedicated members. We welcome your ideas and your leadership.

**New at Portland:** The Young Investigators Committee will bring a group of undergraduate and graduate students from Portland area colleges to visit our conference on Wednesday October 2. The goal of this "field trip" is to promote the value of continuing professional education. Please make them feel welcome.

Murray Johnston and the AAAR Conference Committee have exciting things planned for us in Portland. I am looking forward to seeing you there - for the 32nd Annual Conference of the American Associate for Aerosol Research.

## Organizational Members

**AAAR would like to thank the companies that support us as Organizational Members:**



North America's largest selection of aerosol instruments  
PARTICLE INSTRUMENTS LLC



Barbara Turpin, President

## In Case You Missed It . . .

Akua Asa-Awuku

**Aerosols in Space:** I think we've found a new site for the next big field mission - Saturn! Scientists working with data from NASA's Cassini mission believe the presence of polycyclic aromatic hydrocarbons. PAHs has lead to the formation of aerosol particles found in the lowest haze layer that blankets Titan's (Saturn's largest moon's) surface. Additional information on Cassini's mission can be found on the NASA website (. Research in relation to the discovery has been published in GRL (López-Puertas, et al , 2013) and Astrophysical Journal (B.M. Dinelli, et al.,2013).

[http://www.nasa.gov/mission\\_pages/cassini/whycassini/cassini20130605.html](http://www.nasa.gov/mission_pages/cassini/whycassini/cassini20130605.html)

**Aerosol and Microbes.** Microbes are the first forms of life to develop on earth and they have proliferated. The recent publication of DeLeoon-Rodriguez et al (2013). suggests microbes subjected to extreme weather conditions can be thrive in unlikely upper-tropospheric locations. The team of researchers from Georgia Tech and NASA speciated fungi and many bacteria from samples collected aboard the NASA DC-8 airborne platform during and after two hurricanes. The full publication can be found in PNAS.

<http://www.pnas.org/content/early/2013/01/22/1212089110>

**Clouds and Art:** There is a fine line between art and science but when the mix ti can be truly impressive. In recent news, artist Berndnaut Smilde was able to merge science and art and create a small man-made cloud suspended within a room. C'est Magnifique! His works can be viewed on his website (<http://www.berndnaut.nl/works.htm>) and a Youtube video of his cloud creation is also available at

<http://www.youtube.com/watch?v=a3PxxEoW7ZA> .

**Aerosols in Policy:** A report released by the California Air Resources Board prepared by researchers at the University of California, San Diego in association with Lawrence Berkeley National Laboratories and Pacific Northwest National Laboratories gives promise to future of policy and climate. An important finding suggests that if every country were to do what California has done in the last couple of decades to clean up diesel emissions, it would slow down global warming by 15 percent. Furthermore, reducing similar pollution from sources such as ships and cookstoves, which were not included in the study, could help even more. The full report can be found on the CARB website at:

[http://www.arb.ca.gov/research/single-project.php?row\\_id=64841](http://www.arb.ca.gov/research/single-project.php?row_id=64841)

**Aerosols and Viscous Materials?** For those of us currently anguishing over the length of our current projects, perhaps the following bit of news will give some cheer. After 69 years, the drop of a tar pitch has been recorded on camera! Researchers at the Trinity College Dublin have been waiting patiently since 1944. Clearly, good things comes to those who wait. The full article can be found in Nature. <http://www.nature.com/news/world-s-slowest-moving-drop-caught-on-camera-at-last-1.13418>

## Aerosols in the Spotlight

Jesse Kroll

Development of an In Situ Thermal Desorption Gas Chromatography Instrument for Quantifying Atmospheric Semi-Volatile Organic Compounds

Y. Zhao et al., AS&T 47(3):258-266 (2013)

A large unknown in the chemistry of atmospheric organic aerosol particles is the role of relatively low-vapor-pressure compounds in the gas phase. Such species, known as intermediate-volatility organic compounds (IVOCs) and semivolatiles

organic compounds (SVOCs), can serve as secondary organic aerosol (SOA) precursors and, in the case of SVOCs, can also partition into the particle phase. Unfortunately, because of the challenges associated with measuring such species with high time resolution, their amounts, properties, and partitioning are generally poorly characterized. In response to this need, researchers at UC-Berkeley and Aerosol Dynamics Inc. have recently developed a new instrument for making hourly measurements of such compounds in both the gas and particle phases. This instrument, the semi-volatile thermal desorption aerosol gas chromatograph (SV-TAG), involves the automated collection of organics followed by gas chromatography and mass spectrometry (GC-MS). Sampled organic compounds are first trapped onto a passivated metal-fiber filter; after the collection period they are thermally desorbed into a secondary focusing trap and into the GC, where they are separated and then detected mass spectrometrically. This approach therefore provides detailed molecular identification as well as quantification of individual species within the sampled mixture. Measurements can be made of organic species in the particle phase only (by use of a denuder upstream of the filter) or in the gas and particle phases together (by bypassing the denuder). By making organic composition measurements of both the particle phase and the gas phase, the SV-TAG provides a way to determine the partitioning of species between the two. Because of the need for organic species to pass through the GC, the instrument can only detect relatively nonpolar species; however, the measurement of polar compounds (such as SOA components) should also be possible using on-column-derivatization techniques, opening up new avenues for future research.

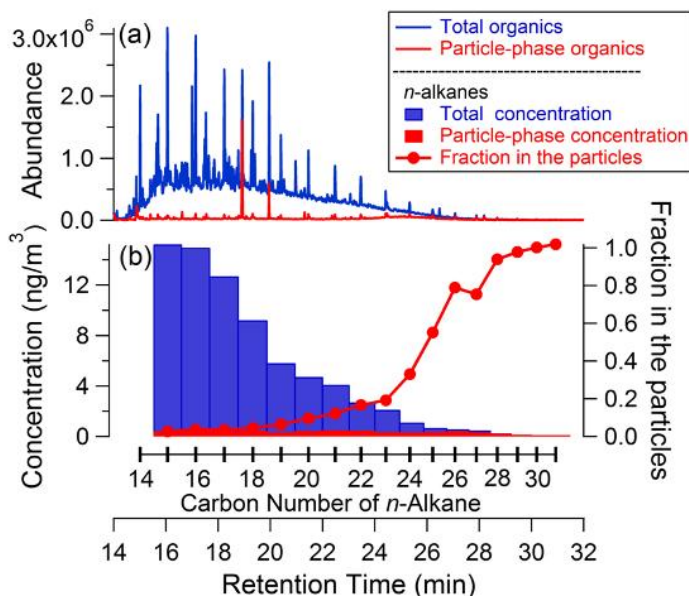
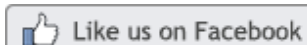
### Quick Links

[AAAR Website](#)

[2013 Annual Conference Website](#)

[Career Opportunities](#)

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Data from the new SV-TAG instrument, taken in Berkeley CA. Top panel: Total ion chromatograms of gas- and particle-phase species (blue) and particle-phase species only (red). Bottom panel: carbon-number distribution of measured n-alkanes (red and blue bars) and fraction present in the particle phase (red circles).

### AAAR Election Results

One of the biggest strengths of AAAR is the dedication of its members. Each year the Nominating Committee recruits two highly qualified members to stand for each office. I have the pleasure of presenting to you our newest leaders. They will continue to need your creative ideas and energy to move AAAR forward. Please be generous with your time and ideas.

-- Barbara Turpin, AAAR President

### Officers & Board of Directors

Vice President Elect: Sheryl Ehrman, *University of Maryland*  
Treasurer Elect: Linsey Marr, *Virginia Tech*  
Directors: Kelley Barsanti, *Portland State University*; Sergey Nizkorodov, *University of California, Irvine*; Ilona Riipinen, *Carnegie Mellon*

### **Working Group Vice Chairs**

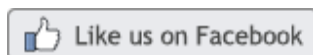
Aerosol Chemistry: Qi Zhang, *University of California, Davis*  
Aerosol Physics: Chris Hogan, *University of Minnesota*  
Atmospheric Aerosols: Timothy VanReken, *Washington State University*  
Combustion & Material Synthesis: David Cocker, *University of California, Riverside*  
Control Technology: Tom Peters, *University of Iowa*  
Health Related Aerosols: John Volckens, *Colorado State University*  
History of Aerosol Science: Roger McClellan, *Toxicology & Risk Analysis*  
Indoor Aerosols & Aerosol Exposure: Jordan Peccia, *Yale University*  
Instrumentation: Amy Sullivan, *Colorado State University*

### **AAAR Bylaws - Proposed Amendments**

The AAAR Bylaws Committee and Board of Directors are recommending amendments to Article IV (Board of Directors), Sections 3 (Meetings) and 4 (Nomination and Election) of the AAAR Bylaws.

The amendments are being proposed to accurately reflect the current AAAR Board of Directors and Working Group nominees' structure and election procedures. [Click here to view the proposed amendments.](#)

The proposed amendments will also be presented for discussion at this year's AAAR Annual Business Meeting being held October 2, 2013 during the 2013 Annual Conference in Portland, OR. All eligible AAAR members will be asked to vote on the proposed amendments prior to next year's AAAR Annual Business Meeting in Orlando, FL.



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American Association for Aerosol Research

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