



PARTICULARS

the E-Newsletter of the American Association for Aerosol Research

Summer 2014

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Organizational Members

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



Letter From the President

Summer is reaching its peak and once again it is time to look forward to the [annual meeting](#)! Registration is open for the 33rd Annual Conference, October 20-24, 2014 at the Rosen Shingle Creek Resort in Orlando, Florida and you can take advantage of [early bird registration](#) and [late breaking poster](#) deadlines that have been extended to **July 31, 2014**.

One conference highlight is the new [tutorial price structure](#) - check it out and consider sending your students early to take advantage of this unique educational experience.

At this point in my tenure as president I'd like to thank the membership for everything they have done for AAAR in the past year. Volunteering for your professional organization is a rewarding experience and I encourage everyone to "just say yes" when asked to stand for office or head a committee.

See you all in Orlando!

Barbara Wyslouzil
AAAR President

2014 Annual Conference Update

Dear AAAR Colleagues,

The [33rd AAAR Annual Conference](#) will take place in Orlando, Florida, on October 20 to October 24, 2014. Preparations are on schedule for this year's exciting conference. The program will include [tutorial sessions](#) on Monday, which you are especially encouraged to register for and attend, a career panel sponsored by the Young Investigators Committee on Monday night, an exhibition from Tuesday through Thursday, and poster and platform presentations taking place from Tuesday morning through Friday noon. **This year we will offer on Wednesday night free transportation to and from local entertainment and restaurant venues as an alternative outing option for all conference attendees.**

The [plenary speakers](#) this year will be, in order of presentation: Ken Carslaw (University of Leeds), C. Arden Pope III (Brigham Young University), Allen L. Robinson (Carnegie Mellon University), and Tami Bond (University of Illinois at Urbana-Champaign). In addition to a full slate of aerosol-related research topics, we will have five [special](#)



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[symposia](#) this year, covering and bridging five themes: (a) Linking Aerosols with Public Health in a Changing World, (b) Biomass Burning Aerosol: From Emissions to Impacts, (c) Emerging Aerosol Sources in a Changing Economy, (d) Results from Recent Ambient Measurement Campaigns in the Southeast US, and, (e) Understanding the Formation and Impacts of New Particle Formation and Growth. 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 April 3 deadline should already have a poster or platform assignment for your presentation listed in the [preliminary technical program](#). Abstracts submitted between April 3 and the late breaking poster submission deadline of July 31 will be added to the conference program in early August.

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.

I highly encourage you to arrange your hotel stay in advance. The conference will be held at [Rosen Shingle Creek Resort](#), where in addition to ideal weather conditions offers diverse amenities including nature and walking trails, a sand volleyball court, a full-service spa, an 18-hole championship golf course, outdoor swimming pools, and lighted tennis courts. AAAR has arranged for a block of rooms at the Rosen Shingle Creek Resort at a reduced rate. 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 33rd Annual Conference of the American Association for Aerosol Research in Orlando this fall!

Athanasios Nenes
Conference Chair

In Case You Missed It . . .

Particle Pollution in Policy!

The Supreme Court recently [upheld](#) a previous ruling that grants the EPA authority to regulate pollutants that are transported across state lines. Articles that provide a quick synopsis and the potential implications of the judicial decision can be found [here](#) and [here](#).

Particles in Paintings!

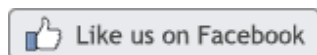
Classic art from master painters can deliver more than aesthetic pleasures: it can also provide insight into past atmospheric conditions. Specifically, artwork that uses detailed colors to depict sunsets has been [shown to yield](#) information about aerosol optical depth after volcanic eruptions. In a recent [followup paper](#), Zerefos et al. show that the red-to-green ratios from paintings can provide approximate aerosol optical depths that correlate with widely accepted proxies and independent measurements. (See Zerefos, C. S., et al., "Further evidence of important environmental information content in red-to-green ratios as depicted in paintings by great masters", *Atmos. Chem. Phys.*, 14:2987-3015, 2014.)

Particles in Health!

Despite decades of research, the cause of Kawasaki disease - a sometimes-fatal immune disease found primarily in young children - remains a mystery. In a new [study in PNAS](#), an international group of health and environmental researchers provide evidence that the cause of the disease may be a wind-borne pathogen. Simulations using the flexible particle dispersion model (FLEXPART) suggest that an agricultural region in northeastern China may serve as a source for the pathogen, and more

generally demonstrate the potential for human diseases to be spread by aerosols transported over long distances in the atmosphere. (See Rodon, X., et al., "Tropospheric winds from northeastern China carry the etiologic agent of Kawasaki disease from its source to Japan", *PNAS*, 111:7952-7957, 2014.

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Particles in Clouds!

Cloud invigoration?! Yes! And it can be attributed to the presence of atmospheric particles. The theory of cloud invigoration by aerosols links the cloud's vertical development to aerosol loading. In [a recent article in Science](#), Koren and coworkers find that even small perturbations in the aerosol concentration can have a large influence on the cloud fraction over remote or pristine regions. See the accompanying [Perspective](#) for a nice overview of the study and discussion of its implications.

Akua Asa-Awuka
Sr. Assistant Editor

Aerosols in the Spotlight

Mapping the Operation of the Miniature Combustion Aerosol Standard (Mini-CAST) Soot Generator

Moore, R. H., Ziemba, L. D., Dutcher, D., Beyersdorf, A. J., Chan, K., Crumeyrolle, S., Raymond, T. M., Thornhill, K. L., Winstead, E. L., and Anderson, B. E., [AS&T 48\(5\), 467-479, 2014.](#)

Researchers at NASA Langley have recently conducted a comprehensive characterization of the particle emissions from a commonly used soot generator (Jang Ltd. Mini-CAST). Soot particles - comprised of operationally-defined elemental carbon, organic carbon, and black carbon - account for a large fraction of global primary aerosol emissions. This has motivated extensive studies to characterize both primary soot particle emissions and their evolution in the atmosphere. A major challenge in this effort stems from the variability in particulate emissions across different fuels, technologies, and combustion conditions. It is therefore important to develop standards of combustion aerosol with known chemical and physical properties that can be used for laboratory studies and instrument calibration. The study by Moore et al. demonstrates that the soot generated by the Mini-CAST has similarities to diesel and aircraft engine emissions. The oxidation air flow and mixing N_2 flow rates were systematically varied to probe an extensive range of air/fuel ratios. A number of chemical and physical properties of the primary soot particles - including particle size distribution, number concentration, density, organic carbon fraction and degree of oxidation, hygroscopicity, and morphology - were measured across the range of Mini-CAST operating conditions. Although only a single system was tested (and thus device-to-device variability was not assessed), the results of this work indicate that the Mini-CAST can be tuned to produce different soot particles in a stable, reproducible manner. This will guide future lab studies that seek to target soot particles with well-defined characteristics.

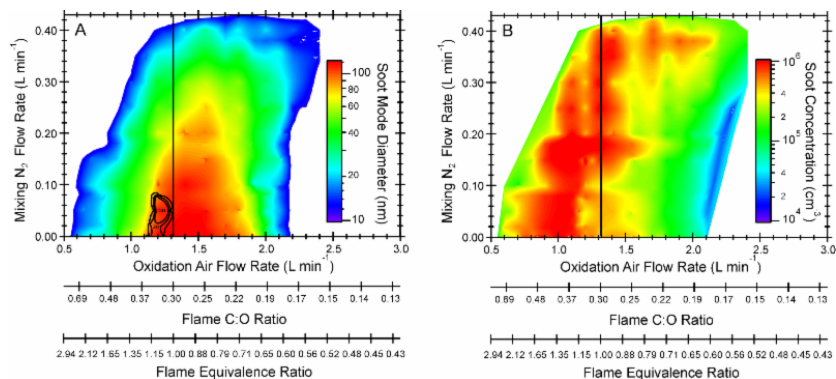
AAAR Newsletter Committee

AAAR thanks the following Newsletter Committee members for contributing their valuable time and talent to Particulars:

Jesse Kroll
Editor

Akua Asa-Awuku
Sr. Assistant Editor

Chris Hennigan
Jr. Assistant Editor



Mapping of the soot particle diameter (left panel) and number concentration (right panel) as a function of both the mixing N₂ flow rate and the oxidation air flow rate.

*Chris Hennigan
Jr. Assistant Editor*

AAAR Student Chapters

AAAR maintains a student chapter program in order to serve the intellectual and professional interests of students in the field of aerosol research. AAAR student chapters provide excellent opportunities for students and faculty to connect with each other, both within and beyond their home institutions. Brief updates from several AAAR student chapters, focused on the wide range of activities carried out over this last year, are given below. For more information on AAAR student chapters, and guidelines for establishing new chapters, please click [here](#).

Carnegie Mellon University

In February, the CMU student chapter of AAAR held our 2nd Annual Donora Lecture. The lecture series commemorates the 1948 air pollution episode in Donora (near Pittsburgh) that killed 20 people and sickened thousands, and promotes awareness about the effects of air pollution. This year, Tami Bond gave a wonderful talk on black carbon and climate and met with members of our CAPS research group. We are now in the planning stages for the 3rd Annual Donora Lecture, to be held in the coming year.

Clarkson University

In the past year, the Clarkson University student chapter hosted a series of school-wide Matlab tutorials and organized our 1st Annual North Country Aerosol Conference, which brought local schools together under a common research interest. At the conference we had several students from Clarkson and neighboring universities discuss their research in a presentation or poster, followed by a day of outdoor activities. This year we plan to host our 2nd summer conference and hope to increase interest for future conferences. For more information, please visit our website at <http://web2.clarkson.edu/orgs/aaar/> and feel free to contact us via email.

Colorado State University

This past year, the CSU AAAR student chapter held its third annual Young Scientist Symposium on Atmospheric Research, attended by over 60 students from seven regional institutions. We have also continued our trail maintenance project and journal clubs, and visited several area facilities including the National Ice Core Lab and the NCAR-Wyoming Supercomputing Center. We've participated in multiple science events for kids, and will be hosting summer barbecues in our department to benefit an organization that provides school supplies to less fortunate children in the Fort Collins area.

Washington University in St. Louis

The Washington University student chapter consists of all graduate students in the four aerosol labs (and will increase to six labs in August). Throughout the year, each lab takes turns leading a meeting or activity for the chapter. Activities that have taken place in the past year include: participating in the St. Louis chapter of the Air & Waste Management Association Trivia night; a field trip to an East St. Louis EPA supersite where a multi-university field campaign was underway; discussion on papers by invited seminar speakers, Dr. Zachariah and Dr. Attoui; meeting with faculty candidates and providing feedback to the department for a recent aerosol faculty search; and monthly happy hours off campus.

University of California - Riverside

In 2013-14 UCR's AAAR student chapter experienced an unprecedented growth, as our membership doubled. In May we hosted a guest speaker event, featuring Prof. Mike Bergin (Georgia Institute of Technology), who discussed his research on particulate matter and its impacts on climate and human health. We also organized social events, such as a potluck hosted by our faculty advisor, Prof. Akua Asa-Awuku. Two of our members won best poster awards at major scientific meetings: Ashley Vizenor at the AAAR conference and Mary Kacarab at the University of California Transportation Center Conference.

AAAR 2014 Elections

2014 Elections are closing soon! Don't forget to vote by **July 25!**

The AAAR Nominating Committee has selected candidates for the offices of Vice President Elect, Secretary Elect, and three (3) Director positions on the Board of Directors. The nominees for these positions are:

Vice President Elect:

Murray Johnston, Allen Robinson

Secretary Elect:

Thomas Peters, James Smith

Directors:

Donald Dabdub, Arantza Eiguren-Fernandez, Maria Cristina Facchini, Alex Huffman, Pramod Kulkarni, Lidia Morawska, Athanasios Nenes, Amy Sullivan

A full list of candidate names and biographies is available on the [election website](#).

You may vote for one (1) nominee for each of the two (2) officer positions, three (3) of the nominees for the Directors positions, designate a write-in, or abstain from voting for a particular position.

Vice-Chairs of the Working Groups have been selected using a membership-wide process. These leaders will serve a 2-year rotation, serving as Vice-Chair for the first year and then becoming Chair for the second year. The Chair presides over the WG meeting at the annual conference and then serves on the conference program committee, planning the next year's annual conference. Please vote for a Vice-Chair for the Working Group(s) with which you have an affinity.

Please note: only one (1) ballot will be accepted from each full AAAR member (excludes students and retirees). Your AAAR username and password will verify receipt of your ballot.

AAAR staff will be able to provide you with your username, if necessary. To reset your password, you will need to use the password reset function on the [Members Only log in](#) page. Please contact Alicea Coccellato (info@aaar.org) if you have any questions or problems accessing the Members Only section on the AAAR website.

AAAR Bylaws Amendments

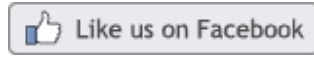
The AAAR Bylaws Committee and Board of Directors are recommending amendments to the Bylaws, specifically Article IV. Board of Directors, Section 3. Meetings and Section 4. Nomination and election.

[Click here to see the proposed Bylaws amendments.](#)

These amendments are being proposed to accurately reflect the current AAAR Board of Directors and Working Groups nominees structure and election procedures, and were presented for discussion at the AAAR Annual Business Meeting during the 2013 Annual Conference in Portland, OR.

Thank you for your continued support of the AAAR, and for taking the time to shape the future of this organization!

Electronic ballots must be submitted by July 25, 2014.



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American Association for Aerosol Research

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