

PARTICULARS

[Career Opportunities](#)

[Member Login](#)

[Website](#)

Letter from the Editor

Sherri Hunt

Welcome to another engaging issue of the Particulars! Here you'll find details about the upcoming meeting in October, as well as interviews with other aerosol scientists. I hope that you will find these interesting and that they will lead you to engage in further discussion about how we develop as scientists and professionals.

In the previous two issues, I requested input from AAAR members on the Future of Aerosol Science. Below you'll find my favorite submission.

As this is my final issue as editor, I want to thank my co-editors, the AAAR leadership, and the other aerosol scientists who have contributed ideas for articles or their time for interviews. I have really enjoyed this experience over the past three years. I hope to continue seeking useful ways of communicating science and building our scientific community in the years to come.

All the very best,
Sherri

President's Message

William W. Nazaroff

The 2012 election votes have been tallied and here are the winners:

- Vice-President Elect - Jay Turner
- Secretary Elect - Suresh Dhaniyala
- Directors - Deborah Gross, Hans Moosmuller, Leah Williams

Working Group Vice Chairs:

- Aerosol Chemistry - Lea Hilderandt Ruiz
- Aerosol Physics - Rajan Chakrabarty
- Atmospheric Aerosols - Paul Solomon
- Combustion & Materials Synthesis - Matti Maricq
- Control Technology - Antonio Miguel
- Health-Related Aerosols - Patrick O'Shaughnessy
- History - David Ensor
- Indoor Aerosols & Aerosol Exposure - Tiina Reponen
- Instrumentation - Brent Williams

Congratulations to those elected and a heartfelt thanks to you and to all the candidates for your willingness to contribute to the leadership of AAAR.

An important factor in AAAR's good health is that members contribute to the association in many ways, large and small. Each year, there are literally hundreds of volunteered

In This Issue

[Letter from the Editor](#)

[President's Message](#)

[Annual Conference Update](#)

[Develop a Short Course - Advertisement](#)

[Who Is This Aerosol Scientist?](#)

[Important Announcements](#)

[Student Chapter Update](#)

[Aerosols in the Spotlight](#)

[In Case You Missed It](#)

[Aerosols In Policy](#)

[On AAAR Tutorials](#)

[Career Spotlights](#)

[A Vision of the Future](#)

Our Organizational Members

The companies below support the American Association for Aerosol Research year round by becoming corporate sponsors. AAAR thanks them for their continued support of our organization.

[Droplet Measurement Technologies](#)

efforts. These include service in many capacities, such as these:

- Volunteering as a student session assistant at the annual conference
- Chairing a session at the annual conference
- Judging posters at the annual conference
- Presenting a tutorial lecture at the annual conference
- Reviewing a manuscript for Aerosol Science & Technology (AS&T)
- Serving on the editorial board or as an editor of AS&T
- Serving as a working group chair or vice-chair
- Serving as a member or chair on one of AAAR's many standing committees
- Serving as a director or as an officer of the association

I warmly encourage your continued and strengthened involvement in AAAR. We've inherited from AAAR's founders and early leaders a very well structured organization. Service responsibilities can be achieved with reasonable commitments of time and effort. The volunteer activities don't require special expertise, but they do benefit from members' knowledge of aerosol science and technology and from awareness of the interests and needs of the AAAR community.

Economists describe virtuous circles that result from positive feedbacks. Strong member participation in AAAR promotes virtuous circles, too. We collectively benefit from being members of an outstanding association. Those benefits accrue directly through accelerated progress in aerosol science. Indirect benefits occur whenever the profile of aerosol science rises within the broader arena of science and technology. Individual members also realize direct benefits from their contributions to AAAR. These include enhancing one's professional reputation, a growing network of contacts, and a deeper sense of belonging to a community with shared interests.

How can you become more involved? Sometimes it is just a matter of saying "yes" when invited. But you can also take proactive steps. Go to our website (www.aaar.org) and visit the "About AAAR" and "Members Only" tabs to learn more about the structure and operation of our association. Become involved in the working group most closely aligned with your interests. Tell your senior colleagues that you are interested to become more involved in AAAR and ask for advice about opportunities to pursue.

Enjoy what remains of your summer. We'll see you in Minneapolis in October!

31st Annual Conference Update ([back to top](#))

Sergey Nizkorodov, Chair

Dear AAAR Colleagues,

As many of you know, the [31st AAAR Annual Conference](#) will take place in Minneapolis, Minnesota, on October 8-12, 2012. I am happy to report that the conference preparations are going well ahead of schedule. The [program](#) will include tutorial sessions, which I highly encourage you to sign up for, a technical writing workshop for the aspiring aerosol scientists on Monday night, an exhibition from Tuesday through Thursday, and poster and platform presentations taking place from Tuesday morning through Friday at noon. The plenary speakers this year will be Jonathan Abbatt (University of Toronto), Allen Goldstein (University of California, Berkeley), Paul Wagner (University of Wien), and Charles Weschler (UMDNJ-Robert Wood Johnson Medical School). In addition to the usual roster of aerosol-related research topics, we will have three special symposia on synthesis of functional materials, aerosol nucleation, and the indoor microbiome. This will 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 9 deadline should already have a poster or platform assignment for your presentation listed in the [preliminary technical program for the conference](#). The [abstract submission website](#) has remained open after the deadline, and we will continue to accept abstracts until the **late breaking poster submission deadline of August 10**. The late breaking posters

2545 Central Avenue
Boulder, CO 80301
Phone: 303-440-5576
Fax: 303-440-1965
www.dropletmeasurement.com

Met One Instruments, Inc.
1600 Washington Blvd.
Grants Pass, OR 97526
Phone: 541-471-7111
Fax: 541/471-7116
www.metone.com

MSP Corporation
5910 Rice Creek Pkwy
Suite 300
Shoreview, MN 55126
Phone: 651-287-8130
Fax: 651-287-8140
www.msppcorp.com

Particle Instruments, LLC
PO Box 270393
Vadnais Heights, MN 55127
Phone: 612-328-2722
Fax: 651-407-9050
www.particleinstruments.com

Sunset Laboratory
10180 SW Nimbus Ave
Suite J5
Tigard, OR 97223
Phone: 503.624.1100
Fax: 503.620.3505
www.sunlab.com

Thermo Fisher Scientific
27 Forge Pkwy
Franklin, MA 02038
Phone: 508-520-0430
Fax: 508-520-1460
www.thermofisher.com

TSI Incorporated
500 Cardigan Rd
Shoreview, MN 55126
Phone: 651-490-2811
Fax: 651-490-3824
www.tsi.com

(i.e., all abstracts submitted between April 9 and August 10) will be added to the conference program in mid-August. I have a special request to all the 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 early September.

I highly encourage you to arrange your hotel stay in advance. The conference will be held at the Hyatt Regency Minneapolis, which is situated in downtown Minneapolis, close to many attractions and restaurants the city has to offer. The block of rooms reserved for the AAAR attendees is expected to fill quickly. In addition, there will be a city-wide convention in Minneapolis during the AAAR dates, which is expected to consume the majority of rooms in the Minneapolis downtown area. Therefore, do not wait until the last moment to make your hotel reservations through the [AAAR conference web site](#). Alternately, reservations may be made by phone at 888-421-1442; ask for the AAAR group rate.

We eagerly look forward to meeting you in Minneapolis in October at the 31st Annual Conference of the American Association for Aerosol Research!

Sergey Nizkorodov, Conference Chair

***** ADVERTISEMENT *****

[\(back to top\)](#)

Opportunity to Develop an Online Air Quality
Short Course for the American Society of Civil Engineers

The Sustainable Infrastructure Education Subcommittee of ASCE's Committee on Sustainability is soliciting proposals for a number of short courses to be videotaped for online use. One of these courses investigates issues in air quality planning and management for sustainable infrastructure projects. This 4-hour course will present a framework for including components of sustainability in the analysis of these issues, and will include illustrative case studies of how sustainability has been addressed in projects throughout the U.S.

1. Atmospheric Transport and Transformation

- Global cycles, climate change, atmospheric physics and chemistry

2. Project-Related Air Management

- Point and area sources, emission inventories, air quality, control strategies

3. Airshed resources (if time permits)

- Ecosystems providing habitat/recreation, restoration of airshed resources

4. Decision Making

- Economics and markets, risk assessment, security/terrorism, regulations

The successful applicant must be willing to work with the Sustainable Infrastructure Education Subcommittee as well as the developers of other short courses in this series to customize the course for ASCE's use online. Sets of multiple choice examination questions are required. The course will be used as part of the certification of sustainable infrastructure professionals by the accredited Civil Engineering Certification arm of ASCE.

The successful applicant will be selected by the Sustainable Infrastructure Education Subcommittee, based on the following criteria:

1. Demonstration of knowledge, understanding and practice of the principles and issues of sustainability and sustainable engineering, with special emphasis on air quality.

2. Ability to prepare and present sustainable engineering concepts, technologies and methodologies in a coherent, stimulating and thought-provoking manner.

Interested parties should contact Cliff Davidson (davidson@syr.edu).

Who Is This Aerosol Scientist? ([back to top](#))

Ann Marie Carlton is an assistant professor at Rutgers University, working towards understanding the chemical mechanisms for particle and ozone formation in the atmosphere.

Since the goal of this article is to help scientists get to know you better, let's start with your name: is it Ann Marie or Annmarie?

That's a tough one. Technically my name has a space, but my first paper was in Aerosol Science and Technology and they wouldn't let me do that, so my professional name became Annmarie G. Carlton, without a space.

Why did you want to become a scientist?

I think that I was born that way. I remember being little and my parents would be looking at directions for something and I'd be over in the corner putting it together by myself. One memory that sticks out in my mind is from when I was ~7. I was sitting on the floor playing with my baby brother in the kitchen. It was part rug and part linoleum and I started wondering about what the temperature was because they felt different. So, I got the baby thermometer and tried putting it on different parts of the floor. It was all the same temperature and I just didn't understand that. A few years later, I went to the Franklin Institute and saw an exhibit on heat transfer and I was amazed to finally have an explanation. So I guess I did my first experiment when I was 7.

You began your formal career as a laboratory scientist and then switched to modeling. Why did you make this transition?

I wanted to learn more about modeling in graduate school because we had found that chemical reactions in clouds were occurring and I wanted to see what the global effect would be. In papers, we would say that this reaction was important, but I also wanted to do modeling so I could make the figure that would put the exclamation point on that sentence.

When I was applying for jobs at the end of graduate school, I was thinking that this might be my last opportunity to go somewhere and have people teach me. So I decided to look for a modeling group and fortunately I found a position at the EPA.

Do you consider yourself a modeler or an experimentalist?

When I started at EPA, people would ask me a science question and I would assume that they were talking about the real atmosphere. I would tell them what happens and they would be amazed that our model included so much detail. Then I would have to respond that the model only includes a simplified version, but that I had been describing what happens for real.

Now, I definitely think in terms of modeling; when people ask a question, I respond with how a process is represented in an air quality model. It was a slow transition, and it happened without me being conscious of it.

You've recently been organizing a field campaign to investigate aerosol formation in the SE. Why did you decide to take on this effort at this point in your career?

I never really made the conscious decision to take on this role. Two years ago, I was giving the last talk at a workshop in Telluride and I was trying to keep people engaged. I had a really funny joke that had the word chloroacetone in it (I promise it was funny!) and on my last slide I had "future future directions". I noted that the Southeast had come up in a bunch of the talks and I think it's time for us, with our varied talents, to go back there. Afterwards, so many people kept saying to me that we should go back and it became pretty clear that people were really interested. So many people expressed interest, and I did none of this alone. There was really this momentum in the community and I just helped keep it going.

What do you do to prepare for a talk?

I practice over and over and over. And then again.

When you aren't coding or investigating mechanisms of SOA formation, do you have any hobbies?

I run and last summer I got a Stratocaster electric guitar.

What is your favorite particle or molecule?

It's probably glyoxal.

Did you have a favorite teacher growing up?

I went to Catholic school, so most of my teachers were nuns. While being taught by them, it never occurred to me that there was anything a young woman couldn't do. They were incredibly strong-willed.

What personality trait do you think is most important for a scientist?

Persistence.

Do you have any advice for young aerosol scientists?

It's important to find both lateral mentors and vertical mentors. You need to seek out people that you trust. When you meet good people, you have to hold on with both hands.

Do what makes you happy. Don't write proposals that you think you'll get, but write proposals that you're passionate about because then it's very easy to get up and work on them.

Important Announcements [\(back to top\)](#)

Student Travel Grant Deadline

A limited number of \$500 student travel grants are available. If you receive the grant, a check in that amount will be given to you in Minneapolis. The grant is intended to help you offset the cost of attendance, and does not cover any particular aspect of attending.

Applicants must be an author or co-author on an accepted abstract to be chosen.

Applicant must be an undergraduate or graduate student at the time of the conference.

Preference is given to Ph.D. students and those attending the entire week.

To apply, please see the "Student Info" tab on the conference site (top right) -

<http://2012.aaar.org/student-information>

Late-Breaking Poster Deadline

We are still accepting abstracts for poster presentation only. The deadline to submit abstracts is Friday, August 10, 2012 at 11:59PM US Pacific Time. To submit your abstract, please visit <http://AAARabstracts.com/2012>

Student Chapter Update [\(back to top\)](#)

If your chapter is active and you are not sending reports, please contact Deanna Bright at info@AAAR.org

2011-2012 Activities

UC - Riverside

From May 2011 through April 2012, the AAAR Student Chapter at UCR organized several activities which served its mission statement. There were twenty active members during this period. The following is a summary of the past year's activities:

1. University of California Irvine lab tours

The Student Chapter was privileged to visit University of California Irvine on June 21, 2011. Students toured the laboratories of Dr. Donald R. Blake, Dr. R. Benny Gerber, Dr. F. Sherwood Rowland, Dr. Ralph J. Cicerone, Dr. John C. Hemminger, Dr. Douglas J. Tobias, Dr. Barbara J. Finlayson-Pitts, and Dr. Sergey Nizkorodov.

2. Discussions and seminars with aerosol scientists

When an aerosol scientist is invited to speak at a Chemical Engineering Departmental Colloquium at UCR, the Student Chapter organizes a meeting with the speaker. The chapter organized a discussion with Dr. Spyros Pandis of Carnegie Mellon University on April 15, 2011 following his talk "Organic Aerosol: From the Laboratory to the Supercomputer." On May 6, 2011, the Student Chapter had a meeting with Dr. Barbara Wyslouzil following her talk "Supercooled Water Droplets: Adventure in No Man's Land." On November 19, 2011, the Student Chapter met with Dr. Peter H. McMurray following his talk "Chemical Processes Responsible for Nucleation and Growth of Atmospheric Particles."

During the June 21, 2011 tour of UCI, participating students attended a seminar talk given by Dr. Jim Pankow of Portland State University, titled "Probing the Fundamental Chemical Properties of Atmospheric Organic Particulate Matter: Polarity, Mean Molecular Weight, and Equilibration Times".

3. Student Chapter mini poster sessions

Following the October, 2011 AAAR meeting in Orlando, the Student Chapter held a mini poster session to share the work to those who could not attend the meeting.

After the February, 2012 Informal Symposium on Kinetics and Photochemical Processes in the Atmosphere at Cal State Fullerton, the Student Chapter held an additional mini poster session for those who could not attend.

4. Social activities

The Student Chapter organized a potluck party, kindly hosted by Dr. Akua Asa-Awuku at her home. The Student Chapter also organized a three-day, two-night weekend trip to UCR's cabin at Big Bear Lake.

5. Website

A website for the Student Chapter was developed by Zhongqing Zheng and is presently hosted by the Engineering Department at UCR. The website address is: <http://www.engr.ucr.edu/aaar/>

6. Outstanding Service Award

In 2012, the Student Chapter instituted an honor to be awarded annually. For his tremendous efforts with duties as treasurer as well as his development of the AAAR Student Chapter website, the 2012 Outstanding Service Award was presented to Zhongqing Zheng "in recognition of exemplary commitment and outstanding contribution to the AAAR Student Chapter."

Colorado State University, Department of Atmospheric Science

The primary activity held by the CSU AAAR chapter this year was a student research conference that brought together students from a variety of departments at CSU and the University of Colorado. Other activities included continued trail maintenance days at Blue Lake Trail in Colorado which is now recognized by a CSU AAAR sign at the trailhead. We also conduct a student run, bi-monthly, aerosol related journal club, and have hosted several guests for our "brown bag lunch" days which give students an opportunity to meet and discuss career related activities with a variety of aerosol researchers.

Washington University in St. Louis

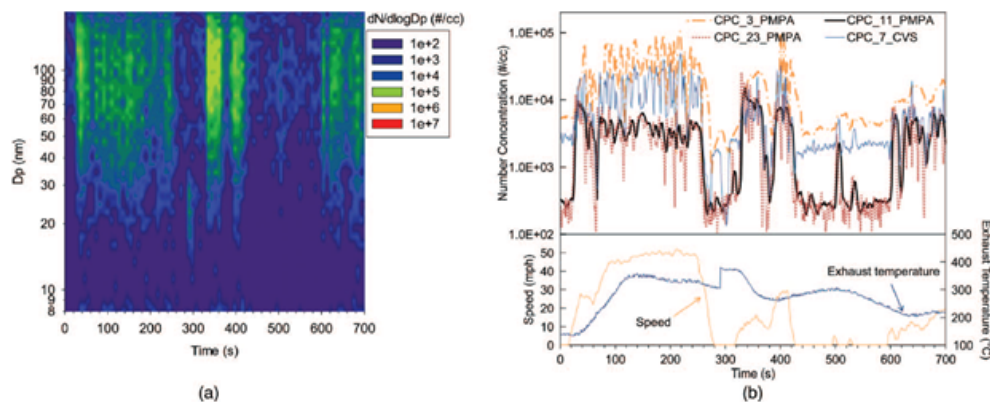
This chapter has been inactive and is reporting that they are gearing up to begin activities again. Welcome back!

Aerosols in the Spotlight [\(back to top\)](#)

[Nature of Sub-23nm Particles Downstream of the European Particle Measurement Programme \(PMP\)-Compliant System: A Real-Time Data Perspective](#)

(AAAR MEMBERS: Please log in through the members section to access full text)

Since the adoption of the ground breaking European PMP protocol for diesel particulate emissions, the debate over the 23nm cutoff diameter has been of primary focus in the diesel research community. In this paper published in June 2012, Dr. Zhongqing Zheng and other scholars from the University of California Riverside have teamed up with researchers from the California Air Resources Board (CARB) and the University of Minnesota to try to answer two important questions: 1) how do sub-23-nm particle concentrations vary over different testing conditions? And 2) what is the nature of sub-23-nm particles? To answer those questions, the team undertook an in-depth evaluation of real-time emissions from a variety of different driving conditions. Testing was conducted using a heavy-duty vehicle equipped with a passive diesel particulate filter (DPF) and the Center for Environmental Research & Technology's (CE-CERT's) Mobile Emissions Laboratory (MEL). In general condensation particle counters (CPCs) with cutoff diameters of 11nm tracked well with the PMP-compliant CPCs with the 23nm cutoff. However, CPCs with a cutoff diameter of 3nm always measured higher concentrations than other CPCs, indicating the presence of a significant number of sub-11-nm particles downstream of the PMP system. In this study, based on observation downstream of the PMP in response to low and high dilution ratio and temperatures, it was hypothesized that the majority of the particles in the sub-11-nm size range were formed from re-nucleation of vaporized semivolative particles, and were not truly solid particulates.



Particle concentrations and size distributions for the European Transient Cycle (ETC) motorway cycle: a) particle size distribution spectrum at the CVS measured by the fSMPS: b) particle concentrations measured by CPCs along with exhaust temperature.

Reference: Z. Zheng et al., AS&T, 46(8), DOI:10.1080/02786826.2012.679167, 2012.

In Case You Missed It [\(back to top\)](#)

Smoke from western US fires moves east and south to plains states

The fires raging in the western US are adding substantial quantities of smoke to the region. The smoke has moved east and south into the plains states. A map of the "surplus smoke" assembled by NASA using the Ozone Mapper Profiler Suite (OMPS) on the new Suomi National Polar-orbiting Partnership (S-NPP) satellite is available at:

http://www.nasa.gov/mission_pages/fires/main/usa/20120628-USaerosols.html

Foggers are ineffective against even the most vulnerable of bedbugs

In a study published last month in the Journal of Economic Entomology, researchers found that three popular commercial foggers were ineffective against five wild strains of

bedbugs and one laboratory strain that had not been exposed to insecticides. Bedbug infestations have been on the rise since the ban of DDT in 1972. The Centers for Disease Control and Prevention reported 466 cases of acute, pesticide-related illness or injury associated with exposure to foggers between 2001 and 2006 in eight states. (Jones and Bryant 2012).

Planet forming dust disappears

Since 1983, scientists have been studying the region around a relatively young (10 million years old) sun because it is surrounded by a disc of dust that is speculated to be planet forming material. Two-thirds of the dust has disappeared within the last three years, an incredibly fast change in the world of astronomy. Researchers speculate that runaway planetary accretion-condensation of the dust to form planets-may be responsible.

<http://www.nature.com/nature/journal/v487/n7405/full/nature11210.html>

Buesser and Pratsinis review synthesis of nanomaterials by aerosol processes

In Annual Reviews of Chemical and Biomolecular Engineering, Buesser and Pratsinis review the various aerosol synthesis techniques used to produce nanomaterials, from the manufacture of pigmentary TiO₂ used as a whitener to the production of optical fibers used in telecommunications. They also review aerosol processes used to synthesize new functional nanomaterials (e.g., catalysts, biomaterials, electroceramics) and devices (e.g., gas sensors).(Buesser and Pratsinis 2012).

Buesser, B. and S. E. Pratsinis (2012). "Design of Nanomaterial Synthesis by Aerosol Processes."

Jones, S. C. and J. L. Bryant (2012). "Ineffectiveness of Over-the-Counter Total-Release Foggers Against the Bed Bug (Heteroptera: Cimicidae).

Melis, et al. (2012). "Rapid Disappearance of a Warm, Dusty Circumstellar Disk."

"Journal of Economic Entomology 105(3): 957-963.

Aerosols in Policy Headlines ([back to top](#))

IARC classifies diesel exhaust as a Group 1 carcinogen

The International Agency for Research on Cancer (IARC), part of the World Health Organization, has reclassified diesel exhaust from a probable carcinogen (Group 2A) to its list of substances that have a definite link to cancer (Group 1). Diesel fumes now join the other Group 1 substances, including asbestos, arsenic, mustard gas, alcohol and tobacco.

<http://www.reuters.com/article/2012/06/12/cancer-diesel-who-idUSL5E8HCL3I20120612>

China approves its first national environmental standard for fine particles

On February 29, 2012, China's State Council approved a standard for PM_{2.5} with a target annual average concentration of lower than 35 µg/m³. Many Chinese cities have fine particle concentrations well above this limit due to fossil fuel use. Reductions in Chinese emissions should improve air quality in other countries, including the US.

<http://www.nature.com/nature/journal/v484/n7393/full/484161a.html>

NIOSH rules 9/11 funds to cover some cancers

Dr. John Howard, director of the National Institute for Occupational Safety and Health (NIOSH), issued a decision to allow 50 different types of cancers to be added to the list of sicknesses covered by a \$4.3 billion fund to compensate and treat people exposed to particulates in the September 11, 2001 attacks.

http://www.nytimes.com/2012/06/09/nyregion/ruling-to-allow-9-11-health-fund-to-cover-cancers.html?_r=2&nl=todaysheadlines&emc=edit_th_20120609

OSHA issues hazard alert for silica exposure in fracturing operations

Hydraulic fracturing requires large quantities of silica sand, which is pumped as a slurry into wells at high pressure to fracture shale and other geologic formations. A recent NIOSH field study identified that fracturing may be linked to high concentrations of respirable crystalline silica. Acting on this information, the Occupational Safety and Health Administration (OSHA) issued a hazard alert, which can be seen at:

http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.html

On AAAR tutorials ([back to top](#))

V. Faye McNeill, Columbia University

We all go to conferences to share our ideas and soak up new information. The AAAR annual meeting takes this to the next level with the pre-conference tutorial series! Having experienced the AAAR tutorials from both sides of the podium, I have to say that they're one of my favorite aspects of the annual meeting. Tutorial topics range from perennial, fundamental courses to special topics, to instrumentation short courses. As a research advisor I'm excited that my students have the opportunity to take short versions of fundamental courses in aerosol science (for example, Rick Flagan's Introduction to Aerosol Mechanics 1 and 2) which are not available at our institution. My students and I also use the tutorials to broaden our exposure to and deepen our understanding of hot research topics. Since the tutorials are offered on Monday before the conference's technical program begins, they can serve as a nice mental warm-up so you can get even more out of the week's talks and poster presentations. Finally, as an instructor, the tutorials can provide new inspiration for the aerosols course I teach back at home. Don't be shy, sign up for a tutorial at this year's annual meeting!

Career Spotlights ([back to top](#))

Paul Roberts & Steve Brown of Sonoma Technology, Inc.

Paul Roberts, Executive Vice President, Chief Scientific Officer and Corporate Quality Assurance Officer at Sonoma Technology, Inc.

What does he do? Since Sonoma Technology, Inc. (STI) is a small company, Paul wears several hats; his favorite is that of the scientist. STI research teams work with government, university, non-profit & industrial organizations to investigate air quality issues. Paul acts as a senior advisor on projects and works with staff on presentations and reports. He also helps ensure projects meet both budgets and timelines. His primary focus is on doing good science. A typical workday is from 8am to 6pm and he travels modestly at his discretion-a few trips per year for client meetings and conferences

What does he like about his job? Paul enjoys working on the science and figuring out where the data can take you. A current active area of personal interest is near-road air pollution, which is a hot topic in health sciences and exposure. He enjoys determining the best technical approach to reach the client's objectives and he also enjoys working in teams and mentoring young scientists.

How did he end up in this position? Paul has a chemical engineering background; as an undergrad, he convinced the department to offer a course on air pollution. One of the guest lecturers had worked with Sheldon Friedlander. Paul went on to attend grad school at Caltech. After working in industry for a short time, he ended up at STI.

Advice to young engineers/scientists. Find something you enjoy doing. Paul and the group from STI pride themselves on developing careers, not jobs.

Steve Brown, Manager of Aerometric Data Analysis Group at Sonoma Technology, Inc. (STI)

What does he do? Steve leads projects and works with staff members on projects. Much of his time is spent figuring out the best way to interpret data-in the right context and on a scientific basis. He works to understand sources of air pollution: where it is coming from, what effect it has, and what to do about it. He analyzes data, performs project management, and develops project proposals. He is currently working on specific ideas for how the forest service could understand the impact of controlled burns and advising them on the best combination of modeling and field studies for the investigative work. A

typical workday is 8am to 5pm. Travel has varied over the years from 50,000+ miles annually, to just a few trips per year.

What does he like about his job? Steve enjoys taking scientific results and making them understandable to people who may not have a strong background in atmospheric science.

How did he end up in this position? As part of his undergraduate degree in chemistry Steve took an environmental chemistry course and really enjoyed the application of chemistry to something he cared about. That experience led to graduate school in the Atmospheric Science Department at Colorado State under the advisement of Jeff Collett, who helped connect him with STI.

Advice to young engineers/scientists. Find topic areas that you enjoy and spend extra time to make your work first class and robust. The time will be invested anyway, so you might as well enjoy what you are doing and do a good job of it.

A Vision of the Future [\(back to top\)](#)

The following was submitted in response to the request in the December 2011 issue of the Particulars for input from AAAR members on their thoughts about the future of aerosol science. After being selected as the favorite entry, Tony will be invited to share a glass of wine with the editor of the Particulars and another member of the AAAR leadership team.

The production of aerosols and curiosity about phenomena resulting from their behavior can be traced to the origins of man. How many generations have mused over smoke rising from the fire or the colors at sunset? Since The Renaissance, the systematic study of aerosols by distinguished natural philosophers and scientists has established a foundation of knowledge that very few other fields enjoy. The future opportunities lie in further integration of the chemistry and physics defining the origins and behavior of aerosols, with the atmospheric, geological and biological sciences underpinning environmental and health effects. Rapid advances in data collection, mining, and manipulation and the use of information and computer technology will allow complex correlations and, cause and effect matrices to be elucidated to establish frameworks for rational technology development, monitoring, control, exposure and regulation of aerosols and the processes by which they are produced. The members of the American Association for Aerosol Research are drawn from all of the relevant fields of endeavor referred to above and their role in future developments is central to a harmonized vision and understanding to address both known complexity and, as yet, unknown contributing factors arising from rapid technological advances. Young scientists should be excited about their potential to make significant contributions to evolving paradigms and to wonder, as many have over the millennia, at their own horizons.

Anthony J. Hickey, PhD, DSc,
Research Triangle Institute, RTP, NC
December 2011

"Particulars" Staff

Sherri W. Hunt, Editor
U.S. Environmental Protection Agency
hunt.sherri@epa.gov

Kathy Erickson
Banner Engineering
KErickson@bannerengineering.com

Tom Peters - Assistant Editor
University of Iowa
thomas-m-peters@uiowa.edu

Deanna Bright - Headquarters Staff

