



PARTICULARS

NEWSLETTER OF THE AMERICAN ASSOCIATION FOR AEROSOL RESEARCH

FALL 2003

2003 CONFERENCE TOOK ANAHEIM BY STORM

By Barbara Turpin, 2003 Conference Chair



We have just completed the second largest AAAR Annual Meeting in our organization's history! (The year we held the international conference was larger.) The Anaheim conference had 720 attendees. Bill Nazaroff organized 16 tutorials with a

total attendance of 541. While we are still going over the evaluations, the initial feedback from tutorial participants is very positive. Thank you Bill and tutorial speakers! Plenary talks focused on atmospheric nucleation (Peter McMurry), the connection between sources and exposure (Bill Nazaroff), and the need for interaction between aerosol measurement and epidemiology (Paige Tolbert). It was a special treat for us to hear directly from Nobel Prize winner, John Fenn. He gave us a sense of the people and science leading to the development of electrospray ionization technologies, for which he shared the prize. It was fun to see how many ties there were along the way to other



Tai Chan and Sonia Kreidenweiss take a break to have some fun.

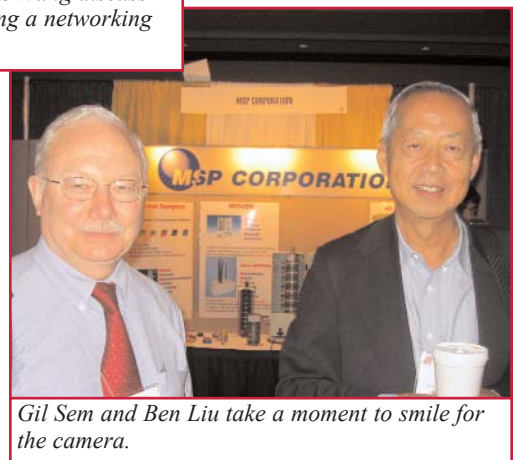


Heinz Fissan and CS Wang discuss the conference during a networking break.

well attended and brought some additional aerosol scientists to our meeting.

This year we highlighted the posters even more by providing three poster sessions and 1-minute

poster introductions during the plenary sessions. This created a much greater burden on the session chairs and speaker ready room, who worked hard to make it successful. The experiment was well received, and I appreciate the many suggestions that will help it go more smoothly, should this be repeated in future years. I am particularly thankful to the poster presenters, who almost all stuck to their one minute!



Gil Sem and Ben Liu take a moment to smile for the camera.

After the conference I went to visit college friends in Pasadena. Heading for the airport on Sunday I drove tens of miles along the largest aerosol plume I have ever seen. Ash was falling on the John Wayne Airport. The Southern California fires stopped air traffic control for several hours, and I arrived back in New Jersey only just before the sun rose. This was a minor inconvenience, compared to that experienced by thousands of others. My thoughts are with those who lost their homes.

I am looking forward to next year's AAAR Conference in Atlanta October 4-8. Best wishes to conference organizers. I will sit back and enjoy!



Juan de la Mora and John Fenn posing with outgoing president, Susanne Hering.

recent developments in aerosol science! Thanks Dr. Fenn, for coming, and thanks to Juan de la Mora for getting him to speak to AAAR. Special symposia were

2003 AAAR AWARD WINNERS



This year's winners of AAAR's five awards were honored during plenary sessions at the annual conference in Anaheim, CA. The awards were announced and presented by the Awards Committee Chair, Lynn Hildemann. The rest of the 2003 Awards Committee consisted of Pratim Biswas, Tai Chan, William Dick, Heinz Fissan, William Hinds, Nels Laulainen, Antonio Miguel, and George Mulholland.



Benjamin Y.H. Liu Award Winners
Pictured left to right: Michel Pourprix, Earl Knutson and Gil Sem

The first **Benjamin Y. H. Liu Award** was awarded to a trio of researchers nominated for the "three key contributions" they made towards our ability today to continuously measure submicron aerosol size

distributions using a Scanning Mobility Particle Sizer (SMPS). One nominator described this instrument as having "profoundly advanced aerosol science". The award recognizes outstanding contributions to aerosol instrumentation and experimental techniques that have significantly advanced the science and technology of aerosols.

- **Earl Knutson** was recognized for publishing a pair of papers describing his design for the DMA, along with the theory for its operation, back in the mid-1970's. One nominator said of his original instrument, it "was so well-designed that it continues to be produced to this day with only relatively minor modifications."
- **Michel Pourprix** was recognized for developing a new condensation nucleus counter that combined continuous flow with the counting capabilities of optical particle counters. One nominator said that this "instrument was the first CNC to employ an optical detector that enabled single particle counting", and the first to allow "unambiguous determination of measurement uncertainty."
- **Gilmore Sem** was recognized for his visionary efforts within TSI to produce commercial versions of the DMA, the continuous CNC, and the combination of the two instruments which today we know as the SMPS. One nominator said of this effort, "It took

vision and courage to recognize the commercial possibilities of these methodologies, qualities that Gil Sem has displayed throughout his career with TSI."



Sheldon K. Friedlander Award winner, Dongguen Lee (r) with Lynn Hildemann

Dongguen Lee was awarded the **Sheldon K. Friedlander Award** for an outstanding doctoral dissertation in the field of aerosol science and technology. The award is named in honor of Professor Sheldon Friedlander

for his leadership as a researcher, teacher, and pioneer in aerosol science. Under the guidance of Professor Mansoo Choi at Seoul National University, Dr. Lee's thesis proposed a novel idea to control the size, morphology, and crystalline phase of nanoparticles generated in a flame. He has obtained a Korean patent on his novel method and international patents are in review in the USA, Germany, and Japan. One nominator stated "the method developed and the insights gained are generic in nature. The work... provided considerable insight into the relative competition between collision and coalescence for growth of nanoparticles." Another nominator wrote, "He utilized fundamental concepts of aerosol science to propose a novel idea and demonstrated successful control of the size, morphology, and crystalline phase of nanoparticles. His contribution goes beyond aerosol science and reaches to material science." Dr. Lee is currently an assistant professor in the School of Mechanical Engineering at Pusan National University in Korea.

Lynn Russell received the **Kenneth T. Whitby Award**, which recognizes outstanding technical contributions to aerosol science and technology by a young scientist. The award memorializes



Kenneth T. Whitby Award Presentation
Pictured left to right are: Lynn Russell, Juanita Saracoff (Whitby) and Lynn Hildemann

Whitby, who was known for his contributions to aerosol measurement, the study of aerosol properties and

CONTINUED FROM PAGE 2

behavior, and the nature of atmospheric aerosols. Prof. Russell's work has focused on understanding the chemical and physical behavior of atmospheric particles through innovative measurements and numerical modeling, including the development of two techniques for better quantifying organic compounds in atmospheric particles. One nominator described Prof. Russell as someone who "has already made exceptional contributions to our understanding of atmospheric aerosols." "[She] has produced a rare combination of fundamental advances at both the experimental and theoretical level." Another nominator stated, "Lynn Russell is one of the most talented and accomplished scientists that I have been privileged to know. Her contributions are not only impressive in their number for someone at this early point in her career; they also have an astonishing breadth, spanning modeling, innovative instrumentation, and analytical method development and application." Professor Russell has recently joined the faculty at the Center for Atmospheric Sciences within the Scripps Institution of Oceanography at University of California, San Diego.



David Sinclair Award Winner, Chris Sorensen (r) with George Mulholland

The David Sinclair Award was presented to **Chris Sorensen** of Kansas State University. This award recognizes sustained excellence in aerosol research and technology by an established scientist still active in his/her career.

The individual's research must have a lasting impact in aerosol science. The award was established in memory of Sinclair, one of aerosol science's great innovators, who was known for his

knowledge, ingenuity, and energy. One nominator described Prof. Sorensen as "a clear leader in the study of aggregate aerosols and soot, and in the development of innovative optical methods for probing these particles." He "stands out for the rigor with which he has experimentally determined the properties of fractal aggregates." Another nominator stated that his "publications share ... elegant physical reasoning, clarity of discussion without oversimplification, and insights that are provided by the blending of experimental results and theory." Another recommender wrote "his extensive work on soot formation and characterization makes him a leader in the field." Prof. Sorensen has published more than 170 papers, and has two patents.

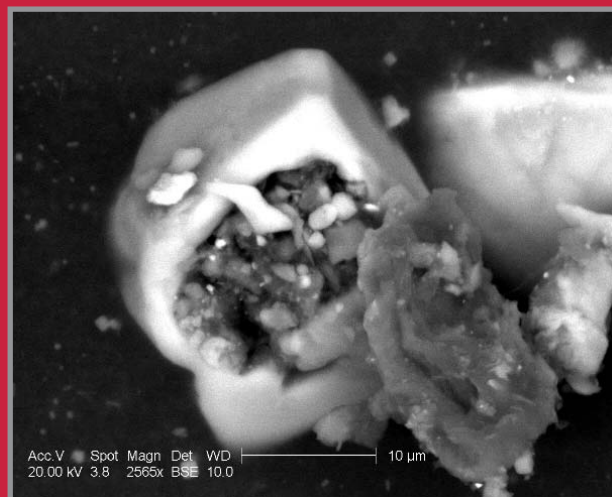
The **Thomas T. Mercer Joint Prize** was awarded to **Günter Oberdörster**. Jointly sponsored by AAAR and the International Society for Aerosols in Medicine (ISAM), the Thomas T. Mercer Joint Prize recognizes excellence in the areas of pharmaceutical aerosols and inhalable materials. The award honors the legacy of Thomas T. Mercer, an outstanding researcher and author whose work encompassed aerosol physics and chemistry as well as inhalation toxicology, industrial hygiene, and health physics. Dr. Oberdörster was presented the Mercer Prize at the ISAM Conference for his important contributions to the study of the toxicity and health effects of ultra-fine particles. He is a professor of Toxicology in Environmental Medicine at the University of Rochester (UR) School of Medicine, Head of the Division of Respiratory Biology and Toxicology, and Director of the UR-EPA Particulate Matter Center. He has published approximately 200 papers, and given more than 100 invited presentations. He currently serves on the editorial board of *International Journal of Hygiene and Environmental Health*, and is both an Associate Editor and editorial board member for *Inhalation Toxicology*.



Aerosols In The Spotlight

Sodium chloride "box" containing particles with carbon, oxygen, sodium, magnesium, aluminum, silicon, sulfur, chlorine, potassium, calcium, titanium, and iron. Found in a 2002 New York City ambient air sample using an FEI XL30 ESEM at the California Department of Health Services' Environmental Health Laboratory.

Image submitted by Dr. Jeff Wagner, Environmental Health Laboratory, California Department of Health Services, Richmond, CA.



Acc.V Spot Magn Det WD |-----| 10 µm
20.00 kV 3.8 2565x BSE 10.0

FROM THE EDITOR

By Pete Raynor, Editor



Dear Colleagues:

Another annual meeting means another new editor for Particulars, and I'm it! Before going forward, on behalf of the AAAR Newsletter Committee, I would like to thank Lupita Montoya, the previous editor, for all her hard work to keep Particulars such a useful

communications tool for the organization and its members.

You should not expect to see major changes in the content or format of Particulars in the next year. We will update members on organizational news and highlight upcoming meetings. We will continue features such as "Industry News" and "Aerosols in the Spotlight". We also hope to try a couple of new features. One will be "In Case You Missed It...", which will include links to aerosol-related reports that have received attention in the popular press. Another will be "Member News", which will allow members to notify colleagues about promotions, job changes, new research initiatives, and other developments. Readers can help make all of these features successful by sending suggestions and information to myself (praynor@umn.edu) or AAAR's Public Relations Director, Amy Chezem (achezem@ahint.com).

While Particulars will always be a way for the organization to disseminate information to its members, we also believe it can be an effective way for members to communicate with one another. Therefore, we will eagerly consider any written contributions you would like to make to YOUR newsletter. Finally, we welcome your feedback on the content of Particulars and appreciate hearing your ideas for future issues.

Sincerely,

Peter C. Raynor

Pete Raynor

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IN CASE YOU MISSED IT...

According to research to be published in the November 2003 issue of *Stroke* by S.S. Tsai, W.B. Goggins, H.F. Chie, and C.Y. Yang, exposure to elevated levels of PM₁₀ and NO₂ is associated with increased hospital admissions for primary intracerebral hemorrhage and ischemic stroke. The researchers reviewed data for more than 23,000 stroke admissions in Kaohsiung, Taiwan. The abstract for this study can be found at

<http://stroke.ahajournals.org/cgi/content/abstract/01.STR.0000095564.33543.64v1>.

A report prepared for the California Air Resources Board by D.R. Fitz and co-authors, see

<http://www.arb.ca.gov/research/schoolbus/schoolbus.htm>, indicates that children riding on conventional diesel school buses are exposed to elevated levels of diesel vehicle-related pollutants such as black carbon and PAHs when the bus windows are kept closed. The on board measurements of children's exposure to these materials are higher than measurements of ambient air concentrations.

Dr. Shigeru Omi, the World Health Organization's Regional Director for the Western Pacific, issued a press release warning that urban residents in his region face a variety of worsening environmental conditions. Among other recommendations, Dr. Omi contends that reducing suspended particulate matter to "safe levels" would save 300,000 to 700,000 lives annually. The press release can be found at

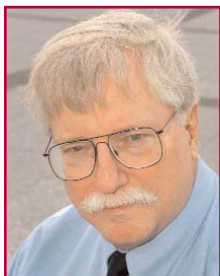
http://www.wpro.who.int/public/press_release/press_vie.asp?id=298.

A report in the October 24, 2003 *Morbidity and Mortality Weekly Report*, see

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5242a3.htm>, describes a small study to investigate West Nile Virus infections among workers at a Wisconsin turkey breeder farm. The MMWR editors mention several possible exposure pathways for the workers including inhalation of aerosolized infected turkey fecal matter.

A MESSAGE FROM THE PRESIDENT

Phil Hopke



I am pleased to write my first message to the membership of the AAAR as your new President. First, I would again like to thank Susanne Hering for her leadership during the past year. As you are aware, we were in serious financial difficulty a year ago and although we have a ways to go to regain the position we held several years ago, we have made significant strides in bringing our costs and revenues into line. Also we need to thank Barbara Turpin and her conference team for the outstanding conference in Anaheim. It appears there is growing interest in aerosol science that led to more than 700 attendees at the annual meeting. There was a great turnout in a year when we had a very successful first specialty conference and record attendance at the European Aerosol Conference in Madrid. Tutorials were very popular and comments suggested they were very well done. Congratulations all around.

What is ahead? *Aerosol Science and Technology* is going on-line to everyone as of January 1, 2004. All of the currently available issues prior to this year (2003) will be available to everyone. Members will continue to see the latest papers through their combined paper and electronic subscriptions. This added feature should provide greater visibility to the work presented in the journal and we look forward to this new approach to improved scientific communication.

We are beginning to reach out to other organizations whose membership might have interests in common. One such organization is the International Society for Aerosols in Medicine (ISAM). ISAM only meets every other year and alternates locations between Asia, Europe, and the United States. Thus, it makes sense to look at ways in which we can work with them to make our annual meetings an attractive location for the exchange of information and maintaining the contacts that state-of-the-art science requires. We are currently looking at developing a jointly organized symposium on microdosimetry at next year's meeting in Atlanta as well as establishing a joint committee to examine ways in which we can collaborate on a more regular basis.

The Air and Waste Management Association (AWMA) has taken the initiative to contact AAAR about working together on the scheduling and organization of specialty conferences. We would like to thank Delbert Eatough of BYU who is Vice Chairman of the AWMA Technical

Council and Dick Sherr, Executive Director of AWMA for opening the discussion. To begin this effort, AAAR has agreed to help with the technical organization of the Symposium on Air Quality Measurement Methods and Technology. The conference is at the Embassy Suites in Cary, North Carolina near Research Triangle Park from April 19 - 22, 2004. Concurrent sessions will be held, along with a vendor exhibition. Full papers of presentations will be compiled in a proceedings volume (on CD) to be distributed to all conference attendees following the symposium. One-page abstracts of approximately 200-300 words and inquiries should be sent via email to: Dr. Ray Merrill at abstracts@airmeasurement.com, or hardcopy to 4764 Concord Dr., Fair Oaks, CA 95628. Final Abstracts are due by December 1, 2003. The preliminary program will be announced on January 30, 2004. Further information will be made available at www.AWMA.org/events. We are looking at other ways to work together to avoid scheduling conflicts and working together to facilitate communication and technical exchange through meetings of mutual interest.

Finally, we are beginning to organize the next specialty conference that will be sponsored by AAAR. Under the leadership of Paul Solomon, a conference is being organized for early 2005 to provide a means to disseminate results from the supersites program and related studies to air quality managers and scientists in the public (state, regional planning organizations, federal, and university) and private sectors. The location of this conference has not yet been determined, but we expect another great opportunity to present and discuss the results of the major measurement programs that have been taking place over the past several years. Stay tuned for details.

Thus, AAAR is moving ahead with its mission to promote and communicate technical advances in the field of aerosol research. We still need to exercise care to ensure the financial strength of the organization, but with the new officers, Tony Wexler (Vice President Elect) and Lara Gundel (Treasurer Elect) and new board members Chong Kim, Michael Kleinman and Cynthia Twohy, we expect to continue to make progress toward the goal of excellence in serving the AAAR membership. I look forward to working with all of you to make this a great year.

Sincerely,

A handwritten signature in black ink that reads "Philip K. Hopke". The signature is written in a cursive, slightly slanted style.

Phil Hopke

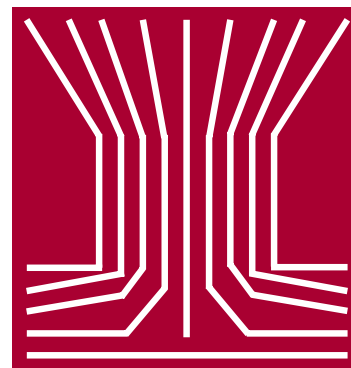
AAAR PROPOSES AMENDMENTS TO BYLAWS

The AAAR Bylaws were written at a time that preceded the vast electronic communications we all use today. Last winter the AAAR Board of Directors voted to move in a direction that would allow the organization to take advantage of the Internet in elections, if so desired.

AAAR members eligible to vote received a detailed notice of the proposed bylaws changes prior to the 2003 Annual Conference and the proposed amendments were discussed at the annual business meeting in Anaheim. These proposed amendments to the bylaws address three issues:

- electronic voting
- the process for tallying votes
- the timeline for approval of amendments

In accordance with the bylaws, all AAAR members eligible to vote will receive a ballot within 90 days of the conference to vote on the amendments.



AWMA CALL FOR ABSTRACTS

**The AWMA Symposium on Air Quality
Measurement Methods and Technology 2004**
April 19 - 22, 2004
Embassy Suites
Cary, North Carolina (near Research Triangle Park)

Papers are being sought for presentations on all air quality measurement and monitoring topics, including (but not limited to) the following sessions under development:

- PM Chemical Speciation
- Chemical Speciation Data Analysis
- Carbon Species
- New Stationary Source Methods
- National Air Toxics and Trends Sites
- Integrated Ambient Toxics Measurements
- Continuous Ambient Toxics Measurements
- Monitoring Network Method Consistency
- VOC/SVOC Measurement Advances

- Ozone and Ozone Precursor Studies
- Laboratory Method Development
- Quality Assurance/Quality Control in Measurements
- Superfund Air Toxics Monitoring
- Stationary Source Monitoring Case Studies
- Optical Methods
- Exposure and Residual Risk
- Homeland Security Energetics Detection and Analysis
- Ambient Monitoring

One-page abstracts of approximately 200-300 words can be submitted to the new AWMA on-line abstract submission system on <http://www.awma.org/events/confs/measurements/default1.asp> by **December 1, 2003**. Draft manuscripts will be due by February 15, 2004, and final manuscripts by March 15, 2003.

Queries can be directed to Dr. Ray Merrill at Measurement-Conf2004@airmeasurement.com

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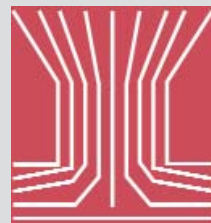
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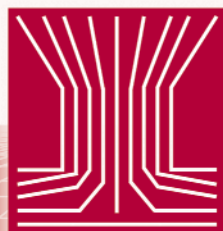
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SAVE THE DATE



**AAAR 2004
ANNUAL MEETING**

WHO:

**American Association for
Aerosol Research
(AAAR)**

WHAT:

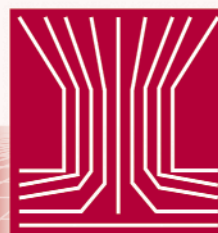
23rd Annual AAAR Conference

WHERE:

**Hyatt Regency Atlanta
Atlanta, Georgia, USA**

WHEN:

October 4-8, 2004



UPCOMING AEROSOL CONFERENCES

December 3-6, 2003
**Inhalation Drug Delivery
(Aerosol-Related Workshop)**
Princeton, New Jersey

April 19-22, 2004
**AWMA Symposium on Air Quality
Measurement Methods and
Technology 2004**
Cary, North Carolina

September 6-10, 2004
European Aerosol Conference
Budapest, Hungary

September 14-16, 2004
**8th International Conference on
Carbonaceous Particles in the
Atmosphere**
Vienna, Austria

October 4-8, 2004
AAAR Annual Meeting
Atlanta, Georgia

September 10-15, 2006
**Seventh International Aerosol
Conference**
St. Paul, Minnesota

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Adam Olsen * California Inst of Technology	Paul T. Roberts Sonoma Technology, Inc	Amy Sullivan * Georgia Institute of Tech	Jian Wen * University of California-Davis	
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