

PARTICULARS

Newsletter of the American Association for Aerosol Research

Summer 2008

Briefing from the Editor

Britt A. Holmén

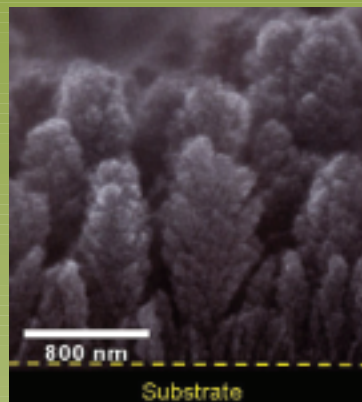
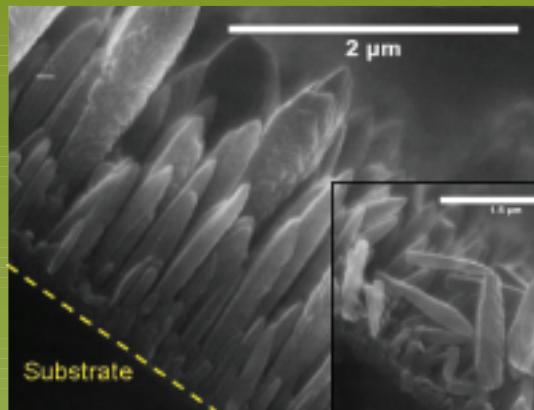


I was not aware that AAAR was sponsoring student chapters until Tiina Reponen emailed me with news on activities at the University of Cincinnati chapter (thank you, Tiina). This issue of *Particulars* highlights some of the happenings taking place in four of the first seven AAAR Student Chapters. Faculty, encourage your undergraduate and

graduate students to develop student chapters at your school, following the URL found in the article on pages 7-8. In addition, don't forget to register for the Orlando annual conference (<http://aaar.conference2008.org>) and check out the interesting tidbits on aerosol-related publications and meetings you may not have seen.

Have a happy and productive rest of the summer!

Aerosols in the Spotlight



Titanium dioxide films with well-controlled morphology for photocatalytic splitting of water. The films were rapidly synthesized using flame aerosol reactors in a single step. Distinct morphologies, ranging from dense columnar formations to more open granular structures, could be generated by simply changing the operating condition of the flame reactor (Thimsen and Biswas, *AIChE J.*, 53(7), 1727).



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President's Message

Chris Sorensen
President

Greetings from the tall grass prairie. I hope this message finds you all well and active.

The 27th annual meeting Oct. 20-24, 2008, is shaping up very well. Bill Nazaroff and his crew have received 620 abstracts so far for the meeting. There will be a full slate of 16 tutorials Monday, Oct. 20, and this year a little difference in that some of the tutorials will be coordinated to feature two themes: nanoparticles and nanotechnology, and aerosols and climate. The rest of the conference will have four outstanding plenaries and three symposia concerning megacity aerosols, electrosprays and mobile source particulate matter. Also, new this year are two workshops: "Web-Based Aerosol Science and Technology Education Resources" and "Careers in Aerosol Science" for young investigators.

The venue this year is sunny Orlando, FL at the Rosen Shingle Creek hotel. This is our first year at the Rosen but not our last. This year we begin a nine-year rotation between Orlando, Minneapolis, and Portland for our meeting. The idea here is to lock in good rates, build good working relationships with the hotels and move around the country. The Rosen is a new facility with all kinds of diversions like golf, tennis, swimming, and volleyball. Good thing we are all hard working scientists and stay focused on our work or else we might have too much fun! Might be a good idea to bring your sunscreen just in case.

Perhaps the best news I can tell you is that AAAR is now in very good financial shape. This great relief comes after some very tough times just a few years ago. We owe a great deal to past presidents Sonia Kreidenweis and Tony Wexler for leadership that pulled us through the crisis.

This May, Peter McMurry gained the role as editor-in-chief of our association journal, Aerosol Science and Technology. Rick Flagan, the immediate past editor, very capably ran the show for the past five years. We certainly owe Rick a big thanks for doing such an outstanding job. Pete has changed things a bit with 10 associate editors that will handle the chores of selecting referees and then, using their advice, make publication decisions.

Good progress is being made to establish an endowment program for AAAR. The board believes that because AAAR has been in existence for more than 25 years, the time is right for starting an endowment fund that would allow members and their families the opportunity to support the association via gifts that would provide long-term support. The purpose of the endowment is to improve the professional climate for the advancement of aerosol science and technology and the dissemination of knowledge in this area.

I am also very pleased to report that we now have seven new, inaugural student chapters scattered about the country at various academic institutions. This is part of AAAR's continuing effort to engage young scientists. In a similar vein, the board approved the creation of the Young Investigator's Standing Committee this past February. I'm excited to hear about what both these groups have been up to. And seven student chapters, I hope, is just the beginning. If you're interested to start one or get involved with the young investigators, just go to our Web site at www.aaar.org.

I hope my message conveys the very positive activity and energy that typifies our organization. Please remember the organization is us; you and me and our kind colleagues, so get involved. We make AAAR great!

Ultrafine particles take away more than our vision, they can affect our health as well.

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COMING EVENTS

2008 Meetings

August 12-14, 2008

Berkeley, California, USA

Ninth International Conference on
Carbonaceous Particles in the Atmosphere

August 23-28, 2008

St. Petersburg, Russia

European Conference on Dynamics of Molecular Systems (MOLEC XVII)

August 24-29, 2008

Thessaloniki, Greece

European Aerosol Conference 2008

August 27-29, 2008

Edinburgh, UK

Faraday Discussion 141: Water - From Interfaces to the Bulk

September 1-5, 2008

Bologna, Italy

SPARC 4th General Assembly

September 2-6, 2008

Prague, Czech Republic

20th International Conference on High Resolution Molecular
Spectroscopy

September 6-10, 2008

Zurich, Switzerland

Latsis-Symposium "Intramolecular Dynamics,
Symmetry and Spectroscopy"

September 7-12, 2008

Annecy, France

IGAC Science Conference "Bridging the Scales in
Atmospheric Chemistry: Local to Global"

September 7-12, 2008

Aussois, France

Gordon Research Conference "Molecular and Ionic Clusters"

October 20-24, 2008

Rosen Shingle Creek Resort and Golf Club

Orlando, FL, USA

AAAR 27th Annual Conference

December 15-19, 2008

San Francisco, CA, USA

Fall Meeting of the American Geophysical Union

2009 Meetings

May 21-23 2009

Cologne, Germany

Bunsentagung 2009

March 1-6, 2009

Galveston, TX, USA

Gordon Research Conference on Gaseous Ions:
Structures, Energetics and Reactions

March 24-27, 2009

Istanbul, Turkey

7th International Conference on Air Quality - Science and Application

June 14-17, 2009

Stockholm, Sweden

12th EuCheMS International Conference on Chemistry
and the Environment (ICCE 2009)

July 5-10, 2009

New London, NH, USA

Gordon Research Conference on Radiation and Climate

July 25-30, 2009

Savonlinna, Finland

30th International Symposium on Free Radicals

August 2-7, 2009

Holderness, NH, USA

Gordon Research Conference on Chemistry and Physics of Liquids

August 23-28, 2009

Waterville Valley Resort, NH, USA

Gordon Research Conference on Atmospheric Chemistry

September 6-11, 2009

Karlsruhe, Germany

European Aerosol Conference 2009

October 26-30, 2009

Minneapolis, MN, USA

AAAR 28th Annual Conference

“In Case You Missed It”

Particulate Air Pollution Linked to Risk of Deep Vein Thrombosis

Baccarelli et al. (*Archive of Internal Medicine*, 2008, 920-927) examined the association of exposure to PM10 with deep venous thrombosis (DVT, a type of blood clot which usually starts in the legs) risk in 870 patients and 1,210 controls from the Lombardy region in Italy between 1995 and 2005. The researchers reported a robust positive independent association between long-term exposure to PM10 with enhanced prothrombotic mechanisms and risk of DVT. Previous studies have linked particulate air pollution to heart disease and stroke. This study introduced a new type of PM-related adverse health effect, which suggests that the health burden posed by air pollution may be even greater than previously anticipated.

Health Effects of Carbon Nanotubes Compared to Asbestos


An international team of researchers led by Ken Donaldson of the University of Edinburgh's Centre for Inflammation Research reported that carbon nanotubes may pose a health risk similar to that induced by asbestos (*Nature Nanotechnology*, doi: 10.1038/nnano.2008.111). By exposing the mesothelial lining of the body cavity of mice to long (>20 micrometers) multiwalled carbon nanotubes (MWCNT), the researchers identified asbestos-like, length-dependent, pathogenic behavior. The result raised concerns that widespread use of carbon nanotubes may lead to mesothelioma, cancer of the lining of the lungs.

Biological Ice Nucleators Ubiquitous in Snowfall

Christner et al. (*Science*, 2008, 319, 1214) examined the concentration and nature of ice nucleators active at temperatures > -10°C in 19 fresh snowfalls collected at mid- and high-latitude locations from Oct. 2005 to June 2006. Their results reveal that biological ice nucleators active at warm temperatures are abundant in fresh snow samples and are ubiquitous in precipitation from worldwide locations. This study suggests that 'bio-precipitation' might be much more common than was suspected. The role of biological ice nucleators in the precipitation cycle may have important implications in understanding the relationship between the biosphere and climate.

Less Particulate Pollution, More Drought for Amazon Forest?

In 2005, large areas of the Amazon river basin experienced one of the most intense drought episodes of the last 100 years. A recent study conducted by Cox et al. (*Nature*, 2008, 453, 212-215) suggests a strong tendency for the sea surface temperature conditions associated with the 2005 drought to become much more common, owing to continuing reductions in reflective particulate pollution in the Northern Hemisphere. The researchers simulated the 21st century using the HadCM3LC coupled climate-carbon-cycle model. They predicted that the conditions surrounding the 2005 drought were approximately a 1-in-20-year event, but will become a 1-in-2-year event by 2025, and a 9-in-10-year event by 2060.



Anticipating the Association's 27th Annual Conference

**Bill Nazaroff,
Conference Chair**

We eagerly look forward to meeting you in Orlando, FL Oct. 20-24, 2008, at the 27th Annual Conference of the American Association for Aerosol Research. This year's annual conference will extend and further develop the great traditions of this conference series. Those who have submitted abstracts will have an

opportunity to present their latest findings to an intellectually astute and professionally dedicated community. All in attendance will benefit from learning about the latest advances across the full frontier of aerosol science and technology. The annual conference will continue to be an excellent opportunity to renew old acquaintances and meet new colleagues. For those of you new to, or on the edge of the aerosol field, I recommend the conference as an excellent way to engage this welcoming community.



Tutorials, Plenary Sessions and Symposia. AAAR's 27th Annual Conference will begin on Monday, Oct. 20 2008, with a full slate of 16 tutorials, spanning a range of introductory and advanced topics. This year we will feature two themes in the **tutorials**: (a) nanoparticles/nanotechnology and (b) aerosols and climate. Each of the succeeding four days of the conference will begin with a **plenary lecture** from a distinguished scholar, addressing these topics: (i) aerosols, climate, and health; (ii) from molecules to droplets: nucleation, growth, and structure; (iii) physical, chemical, and toxicological characteristics of particulate matter from mobile sources; and (iv) particles, drops, and crystals: recent advances in understanding aerosol-cloud interactions. In addition to the plenary lectures, the technical program features parallel platform and plenary poster sessions with plenty of scheduled breaks for informal exchange. Three **special symposia** are being organized to focus attention on (x) frontiers in megacity aerosol research; (y) applications of the electrospray; and (z) particulate matter and mobile sources. The exhibit area, open Monday through Thursday, will provide an opportunity to engage with and learn from leading companies offering instrumentation and services in aerosol science and technology.

This year's conference will be held at the Rosen Shingle Creek Resort in Orlando. This recently opened facility offers diverse amenities including a full-service spa, an 18-hole championship golf course, outdoor swimming pools, lighted tennis courts, nature trails, fishing, and a sand volleyball court. The site is conveniently close to Orlando International Airport (10 mi). In October, we can expect the weather in Orlando to be pleasantly warm (average high = 29.5 °C; average low = 18.5 °C; average sunshine = 8 hours per day). The city is renowned for its array of tourist attractions, including the nearby SeaWorld Orlando (3 mi), Walt Disney World (13 mi), and Universal Orlando Resort (17 mi). Come early! Stay late! Bring your family!

Hats Off to our Inaugural Student Chapters

Britt A. Holmén
and Student Chapter Contributors

Since the program was initiated in September 2007, seven universities (Carnegie Mellon, U. Cincinnati, Clarkson, Colorado State, U. Maryland, Washington University, and Yale) currently have **AAAR Student Chapters** in the inaugural program. Intended to promote undergraduate and graduate student involvement in the mission of AAAR activities, development of student chapters involves an application process with details available on the AAAR Web site at: http://aaar.org/misc_content/student_chapter_program.pdf. Benefits include networking opportunities, complementary subscriptions to Aerosol Science & Technology and limited financial sponsorship by the association. Applications for new student chapters are due annually by November 15. Below are some highlights of current activities taking place around the country as self-reported by the student groups.

The **Carnegie Mellon University (CMU) Student Chapter of AAAR** was active this spring. At the chapter kickoff meeting in April 2008, there were two prominent invited speakers, both from Pittsburgh: **Paul O'Neill**, former CEO of ALCOA and secretary of the treasury in George Bush's first term, and **John Craig**, former editor-in-chief of the Pittsburgh Post Gazette. These individuals have teamed up to form the Pittsburgh Regional Indicators Consortium that features real-time environmental indicators, and they delivered a most exciting presentation displaying their Web site (www.pittsburghtoday.org), followed by a reception and dinner. Other activities are planned for the fall 2008 semester.



CMU dinner at the International Aerosol Conference in St. Paul in September 2006. Left-to-Right: Gabi Engelhart (Chapter President), Tim Lane, Amy Sage, and Emily Weitkamp.

Congratulations to Gabi Engelhart (President), Lea Hildebrandt (Vice President), Marissa Miracolo (Secretary), Kristina Wagstrom (Treasurer), and Yunha Lee (Chapter Representative) for organizing and leading the CMU Chapter that is advised by Cliff Davidson.

Sheryl Ehrman, faculty advisor to the AAAR student chapter at the **University of Maryland**, reported that the UM Chapter has formally registered for student group status, and is planning an initial activity to take place during the summer of 2008.

University of Cincinnati (UC) Student Chapter's inaugural event was held at the Department of Environmental Health and included a seminar by Dr. Paul Baron (NIOSH, Cincinnati) on aerosol-related nanomaterial research at NIOSH. The seminar was followed by a social hour with food and networking opportunities among attendees representing

students, staff, and faculty from the Colleges of Medicine and Engineering at UC, NIOSH, EPA, and Dayton Air Force Institute of Technology.

Jennifer Ehrhardt, secretary of the **Clarkson AAAR Student Chapter**, reports that the chapter was started in October 2007 and has approximately 20 students (from chemical engineering, mechanical engineering, and environmental science and engineering departments). The chapter, mainly graduate students with one undergraduate member, has outlined several activities they will initiate in summer 2008:



University of Cincinnati Student Chapter Inaugural Event. From left: Dr. Sergey Grinshpun, Dr. Paul Baron, Mr. Umesh Singh (vice-president of the student chapter), Dr. Tiina Reponen (faculty advisor), and Mr. Rob Eninger (president of the student chapter) in the Environmental and Occupational Hygiene student room during the inaugural event.

- Short courses on a variety of software programs commonly used in aerosol research will be offered to broaden the abilities of the students involved and help with the research being performed. Two programs that will be taught this summer are LabView and Tecplot with final course materials posted online.
- Developing a chapter Web site that will share information about members encouraging them to network and use each other's skills to help further their abilities. This Web site will also include news related to the field, planned chapter events, and job opportunities. This will also help them network with students from other schools who have related interests.
- Fall 2008 seminars in conjunction with the school of engineering and its departments. These will bring in speakers related to aerosol research in order to teach members more about a variety of topics.

AAAR JOB POSTINGS

Career Opportunities in Aerosol Research

To post a job opening on the AAAR Web site (and a short version in the newsletter), please submit a description of the job electronically by e-mail or in an ACSII text file to AAAR (e-mail: info@aaar.org). The price is \$150 U.S. for a maximum of 200 words. The posting will remain as long as needed, up to six months. Please send a check (payable to the AAAR) to AAAR, Attn: Deanna Bright, 15000 Commerce Parkway, Suite C, Mt. Laurel, NJ 08054, and note that this is payment for a job posting on the AAAR Web Site. Sorry, we are not able to accept resumes.

Post-doctoral Research Position in Nanoaerosol Measurement and Characterization

Division of Applied Research and Technology at CDC's National Institute for Occupational Safety and Health in Cincinnati

Post Doctoral Researcher

Yale University

Postdoctoral Associate on Aerosol Nucleation

Kent State University Atmospheric Chemistry Group

Postdoctoral Associate

Department of Environmental Sciences, Rutgers University, New Brunswick, NJ

Director, Analytical Laboratory Facility

Center for Air Resources Engineering and Science (CARES) at Clarkson University

Postdoctoral Fellow and PhD student positions

University of Toronto, Canada

Postdoctoral Position

Pacific Northwest National Laboratory

Senior Program Manager (Biotech/Defense)

BIT Group, San Diego, CA

Program Supervisor (Special Monitoring)

South Coast Air Quality Management District, Diamond Bar, C

To see full descriptions of classified ads, please visit
www.aaar.org/index2.cfm?section=Career_Opportunities





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Particulars is published by the American Association for Aerosol Research as the primary information source for Association members.

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AAAR 27TH ANNUAL CONFERENCE

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