

**National Atmospheric Deposition Program (NADP)
Council of State and Territorial Epidemiologists (CSTE)**

Aeroallergen Monitoring Science Committee Meeting

Monday, May 10, 2021; 3:00 PM – 6:00 PM Eastern Time
(2:00 PM – 5:00 PM CT; 1:00 PM – 4:00 PM MT; 12:00 PM – 3:00 PM PT)
Virtual via Zoom

Meeting Minutes

Participants: 21

Henry Anderson
Leonard Bielory
Katie Blaydes
Claudia Brown
Daniel Coates
Catherine Collins
Camille Danielson
David Gay
James Hermanson
Andrew Johnson
Anna Kelley
Michael Kolian
Bob Larson
Amy Mager
Mark Olson
Melissa Puchalski
Christopher Rogers
Jamie Schauer
Paul Sierzenga
Richard Tanabe
Greg Wetherbee

1. Welcome – Logistics – Introductions:

AMSC Chair Andy Johnson opened the meeting at 3:05 PM ET and welcomed all attending participants. A few basics of the Zoom platform and the meeting's protocols were reviewed as helpful minders to the participants. Andy decided we would not take the time to go around "the room" for participants to personally introduce themselves, since the Program Office confirmed it would provide a list of the meeting participants' names and that the proceedings were being recorded.

2. Approval of October 26, 2020 meeting minutes:

The Chair called for a motion to accept the October 26, 2020 fall meeting minutes as submitted. Greg Wetherbee moved to do so, and Len Bielory seconded the motion. Greg said he had noted a few minor typos, none of which were a big deal. The minutes were then subsequently approved with all participants using either a thumbs up icon or a "yes" to indicate their vote.

3. Recap of activities since October 26, 2020 meeting:

Andy reported that during the November 2020 – February 2021 timeframe, he, Greg, David Gay, Dan Coates and Landon Bunderson had spent a good amount of time working on finalizing the details of and launching the aeroallergen monitoring methods comparison study, as promised during the fall meeting. An update on the status of the study is an upcoming agenda item for this meeting.

Andy also shared that in January 2021 he had been asked by his Council of State and Territorial Epidemiologists (CSTE) contact to be a reviewer of submissions in response to their request for contract proposals to conduct a review and an assessment of National Allergy Bureau (NAB) pollen data. Only one proposal was received – from Dr. Jeremy Hess et al. Claudia Brown confirmed that his proposal was accepted and work on the project has been underway. A final report was to be due in May 2021, along with a webinar on the report's contents. Andy promised to share any news / details about the report via the Committee's e-mail distribution list.

Claudia spoke about the CDC's Climate & Health webinar series in general and particularly about the one involving pollen held on March 31, 2021. A commonly noted issue among the presenters was the overall lack of pollen data nationally and the difficulties in accessing what data is already available. This provided an opportunity to bring up the need for establishing a national monitoring network to provide nationwide data.

At Andy's request, David gave a great presentation on the aeroallergen monitoring methods comparison study to NESCAUM's (Northeast States for Coordinated Air Use Management) Ambient Air Monitoring & Assessment Committee at the April 8, 2021 session of their annual meeting.

Greg reported on unfortunately an unsuccessful grant proposal to restore full funding from USGS to the National Phenology Network (NPN), after they cut NPN's funding by 75%. The proposal for a "network of networks" has now been revamped as a 2-page statement of interest and is planned to be shopped around to a variety of foundations for some funding support hopefully. This proposed network of networks would include components of NADP, NPN, AmeriFlux, PhenoCam, and Pollen Sense, and bring each network's datasets together on one platform to facilitate access and assessment. He also mentioned this idea would be one of the topics discussed at this Friday's NADP Spring meeting session on "Collaboration for Network Sustainability".

Andy also reported on being asked by a Maine CDC colleague a few weeks ago to explore an opportunity to apply for some funding to support an aeroallergen monitoring effort in Maine via a competitive renewal to their existing climate and health grant from the US CDC. It is hoped we can leverage some of those funds to support one of the Maine Climate Council's recommendations to establish an aeroallergen monitoring network in Maine. He said he would also keep the AMSC updated on any progress along this front.

Len shared that the American Academy of Allergy Asthma & Immunology's (AAAAI) NAB faces the same challenges with regards to finding and maintaining adequate funding and resources to keep components of their activities going. He also reported that Kean University in New Jersey has approved the development of a Center for Aerobiologic Research, which will include particulate matter, pollen, molds and viral particles (e.g. COVID). They are also

pursuing the development of an inexpensive impaction sampling device that would hopefully allow expansion of pollen monitoring across the country.

4. Update on aeroallergen methods comparison study:

David gave the following PowerPoint presentation: "Pilot Study for Aeroallergen Monitoring within the NADP". Following the presentation, there was an opportunity for members to share comments and/or ask questions.

Greg: The rotorod samples collected at Duke Forest in NC are being analyzed by Aerobiology Research Laboratory (ARL) in Ottawa, Canada. ARL's certified staff are performing the pollen counting and identification tasks. ARL will also be used to perform some QA/QC checks of other sites' samples/data, such as those from the Wisconsin State Laboratory of Hygiene (WSLH). The Madison, WI NAB site is right across the street from where the Pollen Sense and high-volume samplers being used in the study are located. Our understanding is the data from this NAB site, sponsored by Dr. Moss at University of WI Madison, will be made available to us at the end of the pollen season (i.e. after October). The role of sites doing traditional pollen monitoring methods (like those in the NAB and ARL networks) will play a vital QA/QC roll going forward as a check on the performance of any new methods, continuous/automated systems, etc. adopted as part of any efforts to establish a lower-cost, spatially well-distributed national aeroallergen monitoring network. The study's sample collection runs from March 1 – October 31, after which the work on assessing the data will ramp up in earnest as part of producing a report/paper, if the data lends itself to doing that. If so, a few NAB folks should be asked to be reviewers.

Claudia: Researcher at Emory University has three Pollen Sense devices in Atlanta: one is located close to the NAB site there for data comparison purposes; and the other two located at increasing distances away, to assess local variability. She offered to reach out to them and help make that connection with us, which was very welcomed.

Dan Coates: asked David if there is a comparison of the GRIPS 99M systems (what we are calling rotorod samplers) to Pollen Sense and Burkhard? David answered that in Madison there is a collocated rotorod sampler and Pollen Sense unit across the street from the NAB site there; the same collocation exists at the NC site; and if the Las Vegas site joins the study effort, Dr. Chin has 2.5 years of collocated rotorod and Pollen Sense data (we do have this collocation at the UT site). David also shared that the Artificial Intelligence (AI) that Pollen Sense uses can always be updated as better ways to identify particles are discovered, so that one can always go back and reanalyze the archived digital images. The AI also uses particle size as its primary means of distinguishing one pollen genus from another.

Len: confirmed that AI is a very good tool for doing pollen identification. It's in widespread use in the European Union. Has excellent correlations to rotorod results for some genuses, and some not-so-good for others. He also shared some other thoughts and questions about the Pollen Sense unit and how it works, along with a couple of examples of others who have made similar comparisons, with varying outcomes. He supports the idea that any future network's data should be publicly available. While there are remaining challenges and areas for improvement with the Pollen Sense unit, he thinks they are all addressable. Also, if the pricing of them can be made very affordable, along with the convenience factor of having real-time data, he thinks they could very well replace the manual rotorod method as the standard for aeroallergen monitoring. Additionally, he mentioned about the development by the Center for Aerobiologic Research of an inexpensive rotation impaction pollen device, to goal being to

foster increased sampling at many hundreds of sites across the country, and two papers of his that were recently published in PNAS. The AAAAI has created a task force to look into pollen “alerts” and what those actually mean from an eyes, nose and lungs perspective.

Jamie Schauer: noted the distinction between the real-time use of data by clinicians for their patients, and data use at a later time by public health researchers; and suggested that NADP should discuss that in more detail to better define what we mean by making the data publicly available, in recognition that there are different data needs, goals and audiences. On finding government funding and resources for generating national aeroallergen data for free public consumption, he stated that’s an important conversation to have, where we need to make the right argument for that, with the right people, to help them better understand the public health benefit of funding such an effort, like is currently done to provide air pollution data for multiple purposes and audiences.

In response to a question, David confirmed the Pollen Sense unit is providing pollen counts per cubic meter of air sampled.

It was noted the importance of developing QA/QC measures for the collection of aeroallergen data by each instrument, such as measuring and verifying flow rates of the Pollen Sense unit and the high-volume PM sampler, and that the person doing counting & identification work of manual methods is certified.

Andy shared his view of how there is a spectrum of aeroallergen data needs and uses out there, and how one monitoring method may be best suited for one type and a different method for another. Costs, ease of deployment/operation, timeliness of data availability, pollen speciation, etc. are all factors to be considered in selecting the best option. Anna Kelley commented how the Pollen Sense method represents a huge time-savings for any agency’s staff involved in aeroallergen monitoring efforts over the more manually intensive methods.

David mentioned how hopefully down the road at some point exploring the use of DNA techniques to identify genus/specie type would be an interesting avenue to pursue. Len shared some details about others who he knew of who were already exploring and working on that.

5. Stakeholder Updates:

- National Aeroallergen Network Steering Committee – no rep present / no report. Andy had previously provided the background on the creation of this committee. It was intended to play the same role as NADP’s Executive Committee, having representation from and acting on behalf of the health-centered federal players (i.e. CDC and EPA) and CSTE, along with NADP reps for the monitoring side of things. However, it has basically been inactive for the past few years.
- Council of State and Territorial Epidemiologists (CSTE) – no rep present / no report. Andy shared that they recently had another change in personnel for their contact/liaison staff person since our fall meeting. Alyaa Altabbaa is the very new contact (as of like 3 weeks ago). Claudia touched on CSTE in her CDC update (see below).
- Centers for Disease Control (CDC) – Claudia is with the CDC’s Climate & Health program, and is their technical monitor on the CSTE’s Climate, Health & Equity subcommittee. She explained how CSTE has reorganized their workgroups, which are now broader in their scope of topics they focus on. It did recently fund some pollen data work being done by Dr. Jeremy Hess at the University of Washington, to translate it into useful indicators for

use by a public health audience. The subcommittee's stakeholders are state & local public health officials who have been communicating their desire and need for access to pollen data, which they currently don't have, in order to better communicate with their constituents on this subject. CDC sent a data request to the NAB three years ago, and is still awaiting a response. The goal is to host and share that information on CDC's Environmental Public Health Tracking Network as one effort to help meet the health officials data need mentioned above. It could also be incorporated into a similar online dashboard, like their Heat & Health Tracker one recently developed last year. Len and Claudia agreed to follow-up with each other about resolving the issue of not yet having received a response from NAB to CDC's data request.

- Environmental Protection Agency (EPA) – Mike Kolian had to leave the meeting before this point in the agenda, but stated in the chat he fully supports the NADP's efforts on this topic. EPA is coming at this from a climate change and health perspective. And more importantly, the need for sustained data collection efforts and data that is publicly available.
- CitiDep: Greg shared the group is still working on a National Science Foundation (NSF) Research Coordination Network (RCN) proposal that Leora Nanus at San Francisco State University is the lead on. Co-principal investigators include Pam Templer at Boston University, Alexandra Ponette from University of Northern Texas, and Janice Brahey from Utah State. The purpose is to bring together several different disciplines in urban air quality to hold workshops for outreach with an aim to grow the number of NADP NTN sites in urban areas, as well as to engage in more collaborations with folks doing air quality monitoring in cities. Also want to link what we're doing with a human health component, which is where the link to AMSC comes in, with its connections to environmental health professionals in cities, in hopes they would collaborate in this RCN. No progress on this has been made since last fall's meeting, however Leora will soon be going on sabbatical and she has promised to refocus her energies on the proposal. Still a work in progress.

6. Priority Task Force Areas:

Andy reported he had no updated news to share on this item. Once again, he expects to have more time to spend on aeroallergen issues, and to reach out to the individuals who had previously volunteered to work on a task area topic, to confirm they are still interested in doing so, as well as to identify ways to help get more folks engaged and interested.

7. AMSC Reauthorization at NADP Fall Technical Committee Meeting:

Andy invited members to share their thoughts on this, as to whether we should pursue reauthorization of AMSC by the Executive Committee (EC) at the Fall 2021 meeting, or not.

Jamie: absolutely thinks we should request reauthorization. We're beginning to work on some things that are really important. Also, to think about the best model/means/strategy is to connect with folks interested in this topic going forward. He thinks there's a lot of good science going on and a good opportunity for an important contribution to public health to be made. One potential goal for the next four years might be to reach out to other individuals and entities involved with aeroallergens and work together to make a special issue in a journal, to help build a community, where we could maybe serve as a hub for it.

Greg seconded that emotion. 😊

Dan agreed with seeking a reauthorization. The U.S. has needed a proper network for a very long time. He has been on several other committees to do this and stated AMSC has gotten the furthest along of any of them. Several members made recognition of the greatly appreciated help, support and encouragement he and ARL have given to the AMSC over the past four years, offered their sincere thanks for that and look forward to continued collaboration going forward.

David moved that the we formally ask the EC for reauthorization as a science committee and provide a 3 to 5-year plan at their fall meeting for their review. Greg seconded the motion. There was no further discussion offered, and the vote on the motion passed (meeting host stated that Zoom icon indicators indicated up to 12 affirmative responses on the motion, and no negative ones).

8. Wrap-up and adjourn:

Andy encouraged those whose schedules and interests allowed to take advantage of “Zooming” in on the remaining NADP spring meetings taking place the rest of this week, and to visit the NADP for details about how to do that.

Jamie thanked everyone for their involvement and contributions to this meeting and to AMSC. Andy in turn thanked Jamie for his support of AMSC going back to the very beginning of the WSLH and UW becoming the new host of the NADP program. Jamie asked if Greg could stay on after we adjourn to chat some more about Dr. Chin and his Las Vegas data.

Greg, Dan and David worked out the details for ARL to return Greg’s filters from his Denver sites to the Program Office.

Andy asked for a motion to adjourn, which David made. Jamie seconded it. Motion passed and the meeting was adjourned at approximately 5:40PM Eastern time.

The Zoom video and audio recordings, along with a copy of the chat text, are also considered digital representations of this meeting’s proceedings and are available via the NADP website to complement these minutes.

Submitted by Andy Johnson
Chair, AMSC