

Joint Subcommittee Meeting

Milwaukee, Wisconsin

April 10, 2018

Meeting called to order at 8:04

Welcome, Logistics and Introductions - David Schmeltz

1. Motion to approve minutes from Fall 2017 Joint meeting (San Diego, CA) - David Schmeltz
Motion: Greg Wetherbee Second: Pam Padgett

2. State of the NADP - Mike Olson
 - Review of transition items from the past couple of months
 - Outline:
 - i. WISC NADP structure
 - ii. Program Office Operations
 - iii. Sites in Jeopardy
 - iv. Miscellaneous
 - v. Transition timelines
 - 2017 Sept RFQ sent out by EC
 - Sept/Oct 2017 paperwork submitted; Dec 1st, officially notified WSLH will house the PO/CAL
 - Transition teams/Lead team/Lab team/Finance/IT/Site support/Communications
 - WSLH visited U of I CAL/PO in Dec 2017
 - Jan 2nd, 2018 first hire – Mike Olson; on Jan 3rd trip to U of I PO/CAL
 - Jan/Feb – it was in place, communications & updates were sent out, working on financial items/lab transition was moving forward
 - Feb 26 – washers arrive at Henry Mall, Feb 27-28 NED and PO moved
 - March 1st – PO open for business
 - New employees – Mark Olson/David Gay/ Bob Larson; NED operational – first equipment shipped – site support started
 - March/April, new CAL employees – Amy Mager/Camille Danielson
 - Begin search for lab manager/senior chemist/associate chemists
 - Acquire instrumentation and completed installations – began QA verification
 - NADP housed in two facilities – Henry Mall on campus (PO/bucket washing/supply shipping/NED) & SLH Ag drive (chemical analysis)
 - Structure – part of WSLH program support outside of NADP – IT/admin/HR/Finance/purchasing/communications
 - NADP PO/CAL located in the Environmental Health Division of WSLH
 - Existing infrastructure in place for shipping/receiving
 - All enquiries should go through the PO
 - NADP structure – Jamie Schauer PI
 - CAL structure; Camille Danielson (QA), Chris Worley (lab manager), Amy Mager (data and site support manager)
 - Hiring associate chemists to bucket wash/site support to build interest to potentially move into analytical roles
 - PO structure – Mike Olson Program Coordinator
 - Mark Olson Field Operations Manager
 - Bob Larson, Richard Tanabe, Jen Phelan, site support/outreach specialist(assessing)
 - NADP QA Director Martin Shafer – special studies

WSLH Funding Mechanisms

- Transition period March 1 to September 30
- Subscriber fees remain the same as U of I current rates
- Sent quotes and contacted all subscribers
- Payment terms and conditions are flexible – want to meet the needs of the subscribers
- Sub-award from U of I to transfer remaining Federal NADP funds
- Need to begin planning for 2nd sub-award
- HATCH Act funds for 2017 (and 2018) are in place
- Oct 1, 2018-Sep 30, 2019 -subscriber fees remain the same as U of I 2017 rates
- Begin to transition to WSLH structured billing
 - o Fees based on annual subscription fee
 - o Invoiced quarterly (but can be flexible)
- Currently have 83 subscribers
- Sites with potential logistical and administrative concerns – sites under concern or haven't responded to initial outreach

Madison supersite plans

- Actively searching for a location in Madison
- April 4th met with UW Arboretum; Great outreach showcase site; Possibly a research site
- 100 years of ongoing ecological restoration
- Other options; WDNR, Federal agencies – USFS – Forest Products Research Lab
- UW campus, College of Agriculture & Life Sciences

Site support summary

- Mark Olson will go into more detail

Sites in Jeopardy

- FI32 – on hold due to staffing issue
- IN21 AMNet shut down May 30 due to funding
- UT97 only keep AMoN going; AMNet/MDN/shutting down
- CA20/PA37 MDN – EPRI is no longer funding Hg research

CAL transition

- Martin/Amy/Camille will go into more detail
- Timeline – samples will begin to be shipped to Wisconsin on June 1st

Fall meeting

- 40th anniversary – Albany, NY November 5-9, 2018
- 40 years of Monitoring Atmospheric Deposition – Historical legacy and a look ahead to the future

Planned outreach

- Jamie Schauer - Association of Public Health Labs, AAAR, IGAC in Japan in September
- Mike – National Ambient Air Monitoring Conference

HAL contract plans

- WSLH actively working with Bob Brunette at Eurofins to finalize a contract
- Expect to have in place by June 1st

3. NADP Transition Recap - Donna Schwede

- NADP the long and winding road from Illinois to Madison
- Started at spring meeting in 2017 – U of I-PRI and ISWS management
- Financial discussions
- Refused to allow passage of Litterfall Network as a full network
- July 2017 – Executive Committee (EC) conference call with PRI to express concerns on action PRI was taking with the program and the lack of communication with EC

- Aug 2-3 Budget Committee meeting – motion developed for presentation at fall meeting on the need to evaluate all options for hosting NADP including staying at U of I
- Aug 9 – PRI email stated that it didn't make sense for them to maintain the program at U of I
- Aug 23 – Program Chair appealed to U of I Vice-Chancellor to keep NADP at U of I
- Aug 29 – response from Vice-Chancellor that he supported PRI/ISWS decision
- Sept 15 – notification from PRI/ISWS of 2018-02-28 termination date
- There was never a problem from EC perspective with the work of the PO or the CAL at U of I

Looking for a new home

- Ad hoc committee to start new host university
- FRIQ developed and sent out
- U of I invited but did not submit
- Applications received and reviewed
- Narrowed down to top 3 universities
- WSLH was selected

The Transition Process

- Real team effort from both universities
- New Vice-Chancellor promised to support network transition to avoid data gaps and ensure smooth transition
- Transition teams formed – lead, budget, site support, lab, IT, communications
- Regular conference calls
- Monthly transition newsletters sent out to the NADP community

The Transition Process – PO

- Lots of paperwork – contracts/agreements
- Lots of financial aspects, Move meeting contracts from U of I of WSLH
- Equipment; IT aspects

The Transition Process – Lab

- Priorities – QA/continuity/communication with sites
- Development of detailed lab verification plan
- Development of detailed handoff protocol

Path Forward

- PO transition to WSLH started March 1st
- Lab will transition on June 1
- Some functions remain at U of I
 - o Lisa Volk (budget), Chris Lehmann (PI) Sybil Anderson (interim CAL director)
- Thanks to everyone
- Collaborative effort
- Many, many people put a lot of extra hours in addition to their normal job responsibilities
- U of I PO/CAL staff have been very helpful and professional during the transition
- WSLH has made a big investment in NADP in time, energy and money to get the network up and going – thanks for believing in the value of the program.

4. Data Management/IT Transition Update - Bob Larson

- General approach – don't change anything unless we have to
- Great support from WSLH IT staff and Tom Bergerhouse
- WSLH much better IT support services; Staffing level was an issue as people from PO dropped off

Priorities

- No loss of data; No loss of data quality; Minimize increase in data lag time; Maintain data access options

Databases

- Moved to new version of SQL; All PO databases transitioned

Web server

- Redirect started at 4pm on 2/28; Some things had to be re-coded
- Data access by google; Data plotting

Data retrieval

- For now csv downloadable, Made some backlog changes – Br

Search engines

- Checked Google, Bing, Yahoo, Searched acid rain

E-mails

- e-mail is being forwarded
- mailing lists are all functional nadp-xxx@lists.wisc.edu

Software installed and operational

- PO data processing
- Precipitation processing/review
- AMNet
- Sites/addresses/SAP/trouble ticket

File resources

- Everything discovered and accessed was transferred
- Some things need to be updated when CAL moves

Data status

- NTN Nov 2017; MDN Jan 2017; AIRMoN Dec 2017; AMoN Dec 2017

Immediate priorities

- Get the CAL data systems operational
- 2017 data/maps
- Expand data retrieval options

Short term priorities

- Train site support team in precip review/gage support
- Move source code into version control system
- Engage other IT members at WSLH

Longer term priorities

- Streamline data processing
- Redo maps

5. Site Liaison/NED Update - Mark Olson

- Background with NED, U-of-I Site Liaison was let go in September 2017; duties fell to the QA Manager (M. Rhodes) and AMNet SL (M. Olson)
- QA Manager departed in December 2017
- Site support picked up by AMNet SL, PO Coordinator (D. Gay) and Database Manager (B. Larson)
- Network equipment move; U of I was resistant to release the equipment
- Was finally released Monday Feb 26th, Unload and established on March 1st
- Fully operational by Monday March 5th
- 465 Henry Mall specifics; Lots of room and storage
- Site Liaison; Richard Tanabe detailed from ECCC, Richard started April 1, 2018, he has extensive experience with all collectors and rain gages
- Site status updates
 - Proactive email and calls to operators, Weekend emails about rain gage problems
 - Noisy load cell, blocked sensors
- Trouble tickets

- All caught up and addressing each upon entry
- Need to streamline tickets from CAL, entered late in the week, tough to get equipment by the next Tuesday
- CAL trouble tickets – parse from NED trouble tickets
- NED activity March to present
 - 5 NOAH IV shells in circulation, 5 repairs, 3 in process, 4 need repair
 - 7 ACM motor boxes sent out and 6 returned, 15 PDA and paired dongles sent
 - Half dozen dongles for use with Android
 - 2 sensors, 1 transformer
 - Only one site not actively being repaired
- Phone support
 - Same NED Hotline 800-952-7353; NED cell hot line 608-772-2025
 - All calls and emails forwarded to NED Cell phone Hotline
- Moving forward
 - Training for operators; Brief videos with info in 5 minutes
 - Make troubleshooting guides available to operators – post on line – Do these need NOS approval? Wetherbee – No.
 - Goal – SL call all operators in first months
 - Improvements to networks – rain gages/collectors – will be discussed in NOS

6. CAL Report - Sybil Anderson (Interim CAL Director) <http://go.illinois.edu/NADPCALReport>

Overview of Staff

- Mike Snider – Bondville operator (30 plus years) retired December 31, 2018
- Wyatt Sherlock is now the primary Bondville operator
- I-CAL Staff Changes – Mike Snider, Lee Green, Pam Bedient, Anita Brown, Chris Lehmann

Laboratory Operations

- Sample counts by network: NTN-440,007 AIRMoN-32,645, AMoN-15,377, nearing 500,000 total
- AMoN laboratory blanks are lower, stable; AMoN travel blanks have come down in concentration
- Full year of new pH instrument – EasyPREP Titrec
- NTN/AIRMoN Archive Sample Distribution – NTN ~6,600 samples, ~80 filters, 12 research groups
- Archive Sample availability: NTN archive 5 years/AMoN 2 years/AIRMoN 2 years

Quality Assurance

- 2017 QA report on website; 2017 QA Plan is finished and online
- SOPS – 53 published online /NADPCALSOP
- 2018 Instrument Detection Limits (IDL) and Method Detection Limits (MDL) – adjustment made on the calculation

Data Management

- Data deliverables: Data lag (12 mo avg) NTN 44 days, AIRMoN 44 days, AMoN 50 days
- Will analyze samples up to May 31, 2018
- Coordination with PO, SITES database and Trouble Ticket moved to WI

Laboratory Transition

- Hosted several visits from WSLH, Coordinating transfer of SITES database
- Participating in NADP transition meetings, Providing SOPs, samples, test supplies, etc
- Provided modified source code for CAL supply and lab data programs

Other Activities

- Bondville Field Station; AMoN, AMNet, and NOAA Aerosol
- Phase 2 this summer – upgrade the remainder of the electrical systems
- Accreditation
 - o Internal Policy and Procedure Review, looking to purchase a LIMS system

7. Lab Transition Status - Martin Shafer

- CAL Transfer Implementation Philosophy

Transition goals

- Maintain continuity of operation and comparability of data
- Document lab performance and verify readiness
- Ensure transition is non-disruptive and transparent to operators
- Approach – if its not broken, don't fix it (yet); Time frame is short
- Illinois shop optimized and established protocols over decades – working
- Adopt Illinois protocols
- Wisconsin/Illinois cooperation – transition would not succeed without collaboration between both; Illinois provided SOPs, physical examples of shipping boxes, forms, labels, supply and vendor lists, PT and rainwater samples for internal validation program

The CAL at WSLH

- Large organization (i.e. 500,000 samples per year) with existing departments/systems
- Illinois model for NADP is not necessarily the ideal one for WSLH
- Differences in structure; Lab operation, identify clear NADP identity within the WSLH

CAL Organization at WSLH

- Lab Manager, Data and Site Support Manager, QA Manager
- 3 supervisors constitute the management team

Staffing

- All positions were open recruitments; 3 supervisors have been filled
- 7 new chemist positions, recruitment has been completed
- Recruitment Assistant Data Manager will open shortly

CAL Space Allocation and Remodelling

- Two major laboratory facilities
- Space being remodelled, anticipate it to be ready by late April/early May
- Henry Mall major washing operations, shipping of NTN supplies, frozen sample archive
- Ag Drive NTN/AIRMoN sample log-in and initial processing
- AMoN shipping/receiving/processing
- All major instrument platforms
- CAL data and QA IT systems, LIMS
- HEPA clean spaces

Instrument Platform Status

- Long history of operating NADP relevant instrument platforms, great institutional knowledge for NADP analytes
- Will create NADP presence, order new suite of instruments
- ICP-OES installed, FIA installed (2), IC (2) mid-April installation

Supporting Equipment and Supplies

- Specialized equipment has been fabricated (i.e. filter apparatus)

Ammonia Measurement Facility Plans

- Dedicated clean room for AMoN
- 2 scrubbing hoods, freezer, washer, small HEPA hoods with ammonia scrubbing to be installed over FIA autosamplers

Validation and Verification Plans

- Instrument platform validation plan (IVP)
- Laboratory Readiness Verification Plan (RVP)

AMoN Network Transfer Timeline

- May 29, 2018 – if 2 week deployment starts on or after May 29th, you will use samplers supplied by WI and send to WI for analysis
- April 25th – W-CAL provides documentation
- April 30th QAAG sign off of W-CAL supply cleaning readiness
- May 11th W-CAL ships clean Radiello samplers and trip blanks to large majority of AMoN sites

NTN/AIRMoN Network Transfer Timeline

- May 29th, all subsequent deployments will be shipped to WI

8. Lab Transition Update, QA - Camille Danielson

QA at WSLH

- Department specific
- Overarching systems – occurrence management/EHD QA team/WSLH QA Committee/Support – HR/IT/Facilities
- Accreditations vary by department: NELAP/WI Lab certification
- NADP department within WSLH
- Maintain certification level practices in parallel adjacent departments
- Utilize overarching systems

Transition QA Activities

- Internal Instrument Validation Plan – method development/detection limit determinations/precision and replication/accuracy/carryover checks, method blanks
- Readiness Verification Plan (RVP)
- Standard/Reagent tracking; Instrument/supply tracking
- Demonstration of capability requirements; Preparation of NADP SOPs/QAP
- Development of metrics

Lab QA – confidence in data quality based on lab-wide systems to ensure accurate, precise and reproducible results

QA goals

- Ensure highest data quality data; Participate in PT programs
- Develop QA reports for all networks; Update all documentation
- Consider accreditation/overlap; Regular internal audits
- Monitor instruments/equipment calibrations
- Find areas for improvements; Train staff on importance of QA
- Incorporate QA in special projects

9. Lab Transition Update, Site Support & Data - Amy Mager

Implementation Plan

- Ag Drive – sample receiving/data entry, sample inspection/filtration/pH-conductivity
- NTN/AIRMoN/AMoN analyses; AMoN prep and analyses
- Henry Mall – bucket and bottle washing, supply receipt and shipment
- Data management and review – hire assistant data manager

Transition activities

- Ordering supplies – buckets, bags, boxes, bottle, brushes
- Prepping the spaces – remodelling; Shipping – stocking with supplies, UPS Worldship

CAL LIMS

- I-CAL applications/programs recompiled at W-CAL
- Sample entry, bench chem, instrumental chemistry, data review, DBM Tool, NADP shipping

- Testing is underway for software on test workstations

Transition Date Prep

- All samples/supplies will come in after June 1st, start with May 29th deployment
- AMoN – sites will be supplied with materials from W-CAL
- NTN/AIRMoN – June 1st and onward, dirty supplies to WI
- Communicate transition plan with sites

Data and Site Support Goals

- Successfully receive and login samples; Receive/track and ship out
- Maintain timely data review

10. HAL Report – Bob Brunette

- Mercury Regulations Update – EPA Mercury Air Toxics Standards (MATS) background
- New MATS website – Sept 2017 <http://www.epa.gov/mats>
- MDN Site Closures/ New Sites 2017/18
- Lost GA33/PQ17/SK28/NE25; New MO46
- Pacific Northwest MDN Hg Deposition
- CA20 in jeopardy
- MDN equipment modernization; ACM 47, NCON 47, Belfort 5, Digital 89
- Site liaison activity; 2018 Email:52; toll free:25
- 2017 Hurricane Irma – MDN impacts lost very few samples (some 2 week samples)
- 2015 HAL Review update – 12/19 findings closed 65%
- HAL data base conversion – access to SQL progress update
- Distribution of quality rating codes (2006-2017)
- There has been a steady decline in total samples processed
- Data delivery schedule is on time; 2016 QA report is online
- HAL/MDN trace metals sites
- MDN outreach focus on the west, great lakes, Louisiana, Oregon
- Upcoming HAL Activities
 - o EPA region 6 and 8: RARE 2017-19 “Post MATS Total Hg Deposition”
 - o MDN bottle sample train (PETG)
 - o ICP-MS/MS (QQQ) Triple Quadrupole – MDL studies being performed, possible support of NADP interest in Phosphorous
 - o DOECAP – Dept Of Energy Consolidated Audit Program

11. Overview of Agendas for Subcommittees

CLAD- Jason Lynch; EROS - Pam Padgett; NOS - David Schmeltz

Adjourn until Wednesday afternoon

Wednesday, April 11, 2018

12. QAAG Report/Lab Readiness Verification Plans - Greg Wetherbee (Interim QAAG chair)

Conference call 2018-04-02

External Reviews

- HAL originally scheduled for 2018, postponed
- CAL not scheduled until 2020, but readiness verification plan calls for on-site visit, suggest a formal review take place this summer, July 2018. Suggested combined with Budget.
- PO scheduled for 2019, could do a combined review in July along with the CAL, input from NOS/Joint?

HAL 2016 review report – Section 7

- HAL and PO database mismatches due to rounding and significant figures. New vb.net application should address the issue

Document status

- 2017 QA reports; EEMS – almost done, CAL – in progress, HAL started, goal to finish in June, AMNet 2017, 50% complete
- QA plan; 2017 CAL QAP complete; 2016 HAL QAP – goal to update by August

QA Documents

- AMNet
- AMoN siting criteria rule for proximity to large CAFOs will be discussed
- NTN/AIRMoN – CD/AM/MS are working on SOPs and other QA docs

Site operator training

- Sample changeout QR sheets
- QR symbols are working, AMoN needs to ship to sites
- Training videos; Turn over/backup operators
- Lots of operators out there with minimal training or need refresher training
- Mark Olson – WSLH is going to make progress on site operator training; a priority by fall meeting
- Need to coordinate between PO Site Liaison and tier II support entities like USGS
- Operator training flow diagram; Greg Wetherbee/ USGS engage site operators

Site survey Program

- EEMS has new staff Corey Devins
- Spot reports will be distributed to PO staff

Dark sites

- USGS has 5 sites in various states of disrepair/neglect: GA99, ME08, TX02, AZ99, OR09
- Other sponsors may have similar problems – delay to Trouble Ticket system, this can delay shipment of equipment or repair calls by a day or so. PO will improve.

Special studies

- Ott Pluvio 2-S: need to evaluate and approve this gage already installed at OH16 MDN
- Collector testing – on back burner
- Sensor study – Wetherbee has data from Rhodes. Need to evaluate, write up, wrap up
- PETG bottle – Ryan Nelson – NOS approved use of bottles
- Tekran 2537x comparison white paper – Mark Olson/Tim Sharac almost done

CAL Readiness Verification Plan (RVP)

- Compare W-CAL and I-CAL analytical performance with respect to:
 - o Detection limits
 - o Bias – 32 natural matrix spike samples shipped to 6 labs CIES, ECST, AMEC-FW, NRS, WCAL, ICAL
- 100 NTN split samples from ICAL to WCAL
- Blanks; Variability – replicates
- Low volumes – 60 natural matrix spike to WCAL only;
- Supply cleanliness – buckets, lids, bottles, filters, bags, brushes
- AMoN supplies: bodies, core, jars
- Compare ICAL criteria from SOPs, QA reports
- Non-routine analysis
- AMoN capability
- RVP reviewed and approved by QAAG
- AMoN collocated study – 12 sites with 2 sets of duplicate samples; 2 from ICAL, 2 from WCAL
- Variability of duplicates
- Compare bias between labs; Compare trip blank cleanliness; Evaluate overall performance
- Schedule - flexible, will run as many as possible (May)

13. WSLH/NADP QA Program Visioning - Martin Shafer

NADP QA

- number one objective is to maintain the high level of excellence and value
- top down review of the QA program
- will conduct comprehensive review of QA at all levels of the program
- more prominent role for CAL QA manager, will be a core member of lab management
- available for direct contact
- work closely with PO QA Manager on design and implementation of systems QA projects
- key member of WSLH lab wide QA team
- elevate the visibility/respect for QA in the CAL
- QA protocols: WSLH and NADP
- WSLH has operated under rigorous QA constructs for decades as most sections are nationally, or state accredited
- continue and expand PT programs
- utilize WSLH central QA systems where practical, certain areas will receive more attention

CAL QC

- more QC responsibility to chemists, develop new CRMs that better address the network needs/samples
- build QA systems in the CAL that require less review in the PO, however still have many eyes on the data

PO QA (re)focus

- reduce some of the duplication of efforts between PO and CAL
- emphasis on higher level system design and management
- continue as lead for QA on special projects

PO QA: selected issues

- examine system level QA checks in the PO
- further automate PO level QA data
- explore alternate strategies for rainfall data review
- build systems to more effectively identify field QA issues

PO QA: focus

- new approaches for assessing the higher level accuracy and precision of network data
- keep abreast of new technology/tools that lead to more robust data
- bring in some Ph.D. students/post docs to explore network QA issues
- consider calculating and propagating uncertainty for NADP analytes and build in systems that can capture and report these uncertainties

14. Mercury Litterfall Network Report - Doug Burns

- Transition operations from USGS Indiana to USGS New York
- Discussions and communications with Marty Risch
- No change from current lab USGS Middleton, WI
- Since San Diego – how to make it work financially and operationally
- Few challenges to discuss at EC

Challenges and issues

- Do we make this a permanent network
- Challenges – transferring funds from WSLH to USGS
- WSLH has expressed interest in operating this network
- future vision for network
- near term for next 1-3 years and long term beyond 3 years

Positives

- Marty Risch left it in good shape, supplies, SOPs

- Hg literature continues to demonstrate the importance of litterfall measurements – important vector of deposition
- opportunity to grow the network beyond MDN

15. NADP Opportunities at WSLH and UW-Madison Followed by Open Discussion and Brainstorming

Jamie Schauer: Where would you like to see NADP go? What are your ideas for keeping NADP relevant? (e.g., analytes, measurement technologies, partners, etc.)

Developing a vision for NADP: 2020, 2030 and 2050

- where we are, and where do we want to go?
- shared governance at Wisconsin, not top down, but by committee
- governed by the Wisconsin Idea, boundaries of the university are the boundaries of the state and beyond
- WSLH unique, one of few public health laboratories,
- not proposing anything specific, setting a framework
- opportunities at WSLH and University of Wisconsin
- committed to core principles of NADP
- improve programmatic efficiencies while maintain commitment to QA/QC and partnerships
- WSLH mission includes research and outreach work to advance NADP research and outreach
 - o expand data interpretation
 - o new analytes
 - o enhance outreach with UW partners
 - o expand NADP partners local, national, international
- programmatic efficiencies
- WSLH organizational structure
- parallel activities at U of I but we seek to improve efficiencies and eliminate duplication of efforts

2020 expand data interpretation and analysis

- primary data analysis, pursue journal publications
- facilitate data analysis research with UWM faculty graduate students
- explore new analytes
 - o black carbon/organic nitrogen/OC and organic compounds
 - o dust trace metals
 - o isotope analysis
 - o biological components

2020 outreach with UW-Madison partners

- UW Arboretum, enhance diversity within NADP and associated disciplines
- connection UW system campuses
- web based tools for outreach and engagement
- leverage expertise ecologist

Long term considerations for NADP

- frame opportunities within the context of NADP goals
- support dry deposition; lead or integrate global networks
- increase temporal and spatial coverage; improve efficiencies

What 2030 may look like for NADP

- more dry deposition measurements; new analytes; local integration
- automation in sampling; real time monitoring low cost sampling
- web portal for stakeholders; more data products

What 2050 may look like

- sensor networks with lab based measurements for QA/QC

- high temporal/spatial resolution; integrated big data analysis tools
- real time mapping of data; biomonitoring of deposition impacts
- fully integrated global networks; phasing out of some analytes
- integrates source apportionment

Discussion:

- Doug Burns: isotopes down the road
- Eric Prestbo: education/advocacy(lobbying), Jamie Schauer: UW is not allowed to
- Donna Schwede: NADP has created statement of fact summaries, what do others do with it?
- Jan Klawitter: provide educational information,
- Jamie Schauer: articulate the science,
- Jan Klawitter: other organizations can advocate
- Donna Schwede: some future ideas cost money,
- Jamie Schauer: different technologies may save money

16. Subcommittee Reports – Refer to individual subcommittee minutes
CLAD – Mike Bell; EROS - Pam Padgett; NOS - David Schmeltz

17. Science Committee Reports – Refer to individual Science committee minutes
Total Deposition - Chris Rogers; Aeroallergen Monitoring - Andy Johnson

18. CityDep & NUANC Update - Greg Wetherbee

CityDep

- Filling gaps in understanding of atmospheric nitrogen pollution in urban ecosystems
- Why measure atmospheric nitrogen pollution
- N dep remains significantly elevated
- Hot spots of N deposition in cities
- More than half of planet's population lives in cities
- Data collected at CityDep sites can help manage
 - o Urban storm water
 - o Regional parks
 - o Urban forest watersheds

SCUAM Subcommittee for Urban Atmospheric Monitoring aka CityDep

- 2 Boston sites – Pam Templar
- Bronx – Tom Whitlow
- 6 NUANC sites – Greg Wetherbee

CityDep report for Joint Subcommittee in Fall 2017

- USGS implemented a wet-deposition monitoring sub-network of 5 NTN sites in Denver/Boulder urban corridor to collect reactive nitrogen deposition data (NUANC). Split samples are being analyzed for stable isotopes by Ty Coplen, USGS Reston Isotope Lab.
- Boulder Creek Critical Zone Observatory installed an urban site at Betesso Reserve
- Discussion with EROS about bringing in EPA NCore personnel for co-located sites in urban areas
- Draft brochure drafted to distribute to potential new site sponsors

Network for Urban Atmospheric Nitrogen Chemistry (NUANC)

- Review of sites in NUANC
- Inorganic N wet deposition data from first year, tracks well
- CityDep data are needed to improve the maps
- Market in cities and get more NTN/MDN sites
- Showed maps without NUANC sites, and with NUANC sites
- Measure what the influence is for areas
- Particulate washout 40x: scary pictures

It's raining plastic!

- 90% of samples collected have particulate plastics
- Pieces of tires? Try laser ablation to determine what the carbon particulates are
- Pollen with plastics; Gypsum crystals;
- How much is locally derived vs long range transport?
- Use particulates as tracers
- Rocks; Critters, insect particulates
- Loch Vale samples loaded with plastics
- CityDep is cool. Everyone wants to be one of the cool kids. So, sponsor a CityDep site!

19. Update on Fall 2018 NADP Meeting and Scientific Symposium - Doug Burns

- Albany, NY
- November 5-9, 2018
- Albany Hilton
- 40 years of Monitoring Atmospheric Deposition: Historical legacy and looking ahead to the future
- Tentative Keynote: Gene Likens invited – the century- long arc of acid rain and its ecological effects at Hubbard Brook
- Gene among the first to demonstrate that acid rain was a regional problem
- 8 session themes
 - o 40 years of Monitoring Atmospheric Deposition: Spatial and Temporal
 - o Atmospheric Deposition and Environmental Cycling of Mercury
 - o Atmospheric Deposition in Urban Settings
 - o Isotopes as tracers of atmospheric deposition and related cycling process
 - o Surrogate and proxy measurements- legacy stores of atmospheric deposition
 - o Ecosystems response to changes in atmospheric N deposition patterns
 - o Recovery of terrestrial and aquatic ecosystems from acidification by atmospheric pollution deposition
 - o Future scenarios of emissions and atmospheric deposition
 - o Other possible sessions: Uncertainty in deposition estimates
 - o Session focused on agriculture

20. Motion to adjourn: Eric Hebert

Minutes prepared by: Richard Tanabe, NOS Vice-Chair