



CUAHSI Board Meeting Minutes

January 26-27, 2016

Roll Call

- 13 members are present, 10 needed for quorum
- "X" indicates Director is present

Term expires 12/31/2016

Michael Gooseff, Colorado State University X (did not attend on 26-Jan-2016)

David Hyndman, Michigan State University (Chair) X

Holly Michael, University of Delaware X

Todd Rasmussen, University of Georgia X

Al Valocchi, University of Illinois Urbana-Champaign (past-Chair) X

Term expires 12/31/2017

Erkan Istanbuluoglu, University of Washington X

D. Scott Mackay, SUNY University at Buffalo X

Kamini Singha, Colorado School of Mines X (did not attend on 27-Jan-2016)

Scott Tyler, University of Nevada, Reno X

Term expires 12/31/2018

Matt Cohen, University of Florida X

David Genereux, North Carolina State University X

Gordon Grant, Oregon State University

Erich Hester, Virginia Tech X

Steve Loheide, University of Wisconsin-Madison X

Jeanne VanBriesen, Carnegie Mellon University X

Officers & Staff Present: Adam Ward (Secretary), Martin Saul (CUAHSI), Rick Hooper (CUAHSI)

Minutes prepared by Adam Ward

Item 1: Community Modeling

1. Overview of community modeling efforts
 - a. Hooper reviewed CJAHS' existing modeling-related activities including the National Flood Interoperability Experiment (NFIE) and the HydroCLM effort. The planning for the 2016 NFIE is currently underway. A key goal of the HydroCLM effort is to improve the representation of continental-scale hydrology in the Community Land Model (CLM). Hooper described one goal of the community modeling effort as an opportunity for our community, but also as a change from the status quo from current disciplinary model development.
 - b. Tyler requested a summary of funding in support of these efforts. Hooper reported funding in the CJAHS cooperative agreement with the NSF included funding for a subaward to support a post-doctoral researcher at Rutgers University, co-funded from an INSPIRE grant to Rutgers University. The post-doctoral researcher is Justin Perket, currently working at NCAR.
 - c. Rasmussen asked about the NFIE grant and the involvement of the NSF, if any. Hooper reported that the National Weather Service is transferring funds to the NSF, and the NSF is making a supplemental award to CJAHS to support the NFIE. Hooper also reported that this effort is related to the National Water Center in Alabama.
 - d. Valocchi suggested that hydrological forecasting is a logical application of hydrologic science, with clear relevance to the engineering field. The group discussed existing and upcoming forecasts.
2. Presentation by David Maidment (National Water Model), Martyn Clark (HydroCLM), Ying Fan Reinfelder (HydroCLM), and Justin Perket (HydroCLM)
 - a. Clark, Reinfelder, and Perket gave a presentation focused on CJAHS' evolving community modeling efforts which have culminated in the current HydroCLM effort.
 - i. Rasmussen asked about overlap between CJAHS initiatives and European initiatives. Clark reported that Hooper and Gordon Grant are attending a post-EGU workshop. Clark continues to work to keep these connections active.
 - ii. Valocchi noted that one motivation was whether improved representation of surface processes would improve climate predictions. He asked if the reverse would be true (i.e., can hydrologists explore new questions given these tools)? Reinfelder reported that the HydroCLM model would be useful tools for the system as a baseline for their work, integrating climate, biogeochemistry, land management, and hydrologic processes.
 - b. Maidment gave a presentation on Continental Hydrology as part of the NFIE effort
 - i. Clark and Maidment discussed delineation of riparian zones at the scale of the CONUS as a requirement for stream and river hydraulics and flood forecasting.
 - ii. Hooper noted the efforts of the HydroCLM and Continental Hydrology projects are facing very similar challenges, with a key difference of forecasting in response to climate vs. weather.
 - iii. Reinfelder and Maidment committed to regularly discussing progress and looking toward future collaboration.
 - c. Hooper initiated a discussion on the role of the academic community and CJAHS in prototyping important products and conducting synthesis activities as part of these projects. The degree to which CJAHS should embed these sorts of activities in the

CJAHSI Science Plan was discussed. The group discussed the need to articulate these project ideas and their direction in a planning document, with an ideal audience of the NSF.

Item 2: Budget Overview

1. Hooper reviewed the budget information distributed in the briefing book. An important upcoming change is that the cooperative agreements for the core operations and water data center will be combined into a single agreement by 2017.
2. One important item is that the most recent approved overhead rate is about 66%, but the effective rate is about 38%. From the NSF perspective this is settled on an annual basis. A challenge is that CJAHSI must use the same overhead rate for the NSF and for other funders, resulting in challenges with negotiating contracts for non-NSF funders because CJAHSI must charge all grantors its Federally approved rate.
3. Valocchi and Hyndman requested the CJAHSI Organization Chart be added to the website along with headshots and brief bios about each employee.
4. The group discussed the funding for a deputy director as part of the core costs for CJAHSI. Hyndman reported that he has discussed the issue of a deputy director multiple times with the NSF.
5. A request was made to have a 1-to-1 correspondence between named CJAHSI activities and the budget pie chart categories in future board briefing books.
6. Hooper reviewed the budget request to the NSF for 2016 operations, broken down by CJAHSI activity and by NSF category.
7. Motion to approve Resolution #1.
 - a. Motion: Genereux
 - b. Second: Rasmussen
 - c. Discussion:
 - i. The group discussed working through programmatic activities in more detail prior to budget approval by the BoD in future years.
 - ii. VanBriesen clarified that the previous BoD endorsed the budget when it was submitted. Hooper reported that this was the case, but the CJAHSI BoD has traditionally voted concurrence with the budget.
 - iii. Hooper noted that the CJAHSI audit committee, fully independent of the BoD, receives and reviews the audit.
 - iv. VanBriesen requested that the CJAHSI financials be circulated.
 - d. Vote: Approved (unanimous)

Item 3 (Part I). Other Programmatic Activities for 2016

Item 3.1 Water Data Center

1. Hooper summarized key updates from the WDC. One item of note was the need for a software developer, but limitations in the ability to pay a competitive salary. The current strategy is to work with a temporary software engineer on a contract basis. In the longer-term, the group will actively recruit a PhD-level domain scientist with a software engineering skillset.
2. Valocchi asked if CJAHSI should recruit more in Europe. Seul noted that there is a need for someone with a hydrologic background in order to help with the technology and skills that compliment his own expertise.
3. Seul gave a presentation to update the BoD on recent Water Data Center activities.
 - a. The group discussed the role of CJAHSI in validation of user-developed tools.

- b. During Seoul's demonstration of the beta version of the WDC, the group requested that the keyboard list be dynamic with place, such that only records that exist in the map view are provided as keywords (i.e., keywords for non-existing data sets are not displayed).
 - c. Cohen asked how additional government data services are discovered, particularly at state and local levels. Seoul responded that they add services when they are discovered, with a long-term vision of expanding the user base and data harvesting as the user base increases. Hooper provided examples of researchers gaining permission to publish local data on an ad-hoc basis.
 - d. VanBriesen asked how CJAHSI acts to correct data if problems are discovered. Hooper discussed the addition of a "report a problem" feature, or a more generic suite of user feedback tools. Hooper and Seoul agreed that this is a capability that is needed. Hyndman and VanBriesen agreed this should include dosing the loop with the person who reports the problem, so they know when it is resolved.
4. Hooper reported that the client has reached a stable, functional build. The catalog is moving to an open source format, which will move CJAHSI off of an expensive and proprietary technology. Along with this move, he expects improved functionality for users. He noted the need to make data publication easier for users.
 5. A key area of opportunity for the WDC is for projects to include funding for personnel to work with CJAHSI WDC staff, such that researchers can develop or upgrade tools and they can be seamlessly integrated into the WDC after the project is complete.

Item 3.2 Training

1. Hooper summarized the upcoming in-person training courses for 2016, several of which have already sold out.
2. The group discussed virtual short courses as a very low-cost way to reach members of the community.
3. To help reach/recruit more potential short course instructors, Genereux suggested that perhaps member representatives could identify water researchers at their universities who are not currently receiving CJAHSI information by e-mail, and ask them if they would like to sign onto the listserv.
4. Hyndman summarized two distinct issues of (1) getting the word out, and (2) getting additional volunteers to lead short courses.
5. Singha suggested inviting CJAHSI members to include short-course organization and leadership as part of their broader impacts activities. The group also mentioned agency scientists, consultants, and high-school teachers as possible audiences for these courses.
6. Hooper noted that a standard hydrologic field techniques course would be of interest to the community, based on discussion at regional meetings. The group discussed a substantial investment of time and resources to offer a course, possibly including region-specific courses.
7. Tyler expressed the opinion that CJAHSI's role on the cutting edge of technology was a strength for CJAHSI, and that a typical curriculum may not be as high profile.
8. Cohen noted that archived virtual courses being made available after the fact continue to be a resource for the community.

Item 3.3 Education Services

1. CyberSeminar Series
 - a. Hooper reported that organizing the CyberSeminar hosts is often a last-minute process, and the future planning could be improved. He suggested early career scientists may be

a good target for hosting the series as way for them to engage with CJAHS and their research communities.

- b. The topic of continental hydrology was discussed as a possible theme for a seminar series.
 - c. Hyndman suggested focus on early career scientists as speakers would be beneficial to them but acting as hosts might take too much time for their stage of career.
 - d. Hooper reported that the Pathfinder Fellowship program has steadily grown in number of applicants and high-quality applicants. He noted that Rasmussen has largely taken the lead on organizing reviews and recommendations for funding, but this has generally been organized informally. Hooper envisions a chair that would organize mail reviews and then convene a second review panel to make the final recommendations, with a goal of making announcements prior to the Fall 2016 AGU meeting.
 - e. Hyndman concurred, noting this is a highly successful program for CJAHS and engages a group of upcoming faculty. The Pathfinder Fellows are also invited to present their work at the biennial.
 - f. Genereux questioned the need for three mail reviews for each proposal in addition to a committee. The group suggested this helps screen applicants for the panel to consider.
2. Let's Talk About Water
 - a. Hooper summarized the LTAW program's origin and the matching grant program.
 3. Instrumentation Discovery Travel Grants
 - a. Hooper reported that 4 of 10 potential grants were awarded in 2015, and funding was requested to continue in 2016. He noted interest at the membership meeting. This idea was endorsed by the instrumentation standing committee.
 - b. Ward asked if these funds could be used to send a student rather than faculty member. The group generally agreed that it would be reasonable to allow graduate student travel to be supported on this effort.
 4. Data-driven Education
 - a. Hooper discussed the history of this program. CJAHS' role is to help vet problem sets for this forum, and adapt problem sets to leverage existing data services from CJAHS and elsewhere. Hooper discussed the potential of working with SERC to develop additional modules and content. The prototype site can be viewed at: <http://serc.carleton.edu/hydromodules/index.html>
 - b. Hooper reported the role of CJAHS in this was to help produce a limited number of modules and vet submitted modules as a test of this platform.

Item 4. Discussion with NSF Program Manager Tom Torgersen

1. Hyndman asked Torgersen about the future of GEO at NSF, particularly anything that CJAHS should be aware of. Torgersen reported that budgets have been flat within GEO for several years. Torgersen reported that the INFENS program is a likely opportunity for hydrologists working in interdisciplinary teams. Hyndman followed up regarding a potential budget cut that has been discussed for the NSF. Torgersen reported that his budget is likely to be about 90% of the previous year budget, with the remainder being part of different initiatives.
2. Valocchi asked about needs related to combining cooperative agreements for CJAHS. Torgersen reported that there are no immediate needs from CJAHS. Torgersen noted that CJAHS has a role in serving the community, and that it is important to be sure the community values the services that are provided. Hooper reported that the HydroShare advances have been working toward this outcome, with improved services for the community.

3. Torgersen noted that the NFE defines a number of additional types of data for the WDC. He suggested that additional effort for other types of data, such as the social and economic data being generated by WSC and INFEWS projects, needs to work seamlessly with the WDC.
4. Torgersen suggested hydrology is central in meeting needs of society, providing on-the-ground knowledge that is useful to resource managers. He noted it is important to include all components of the water cycle in an integrated system. He identified coupling the surface water expertise and modeling that exists to soils, geologic, and other types of earth systems data.
5. Tyler explained that there is an upcoming White House Water Summit in Spring 2016. He asked if there are any ways that QJAHS can help Torgersen prepare for this event. Torgersen reported that he has been working with these organizers, particularly with respect to the Water Sustainability and Climate program. He felt this summit would highlight economic opportunities related to water. Hooper reported that the White House is looking for new announcements to unveil at the summit. Torgersen suggested that an active social media presence to advertise this effort would be helpful. Torgersen has also engaged the organizers in the upcoming WSC PI meeting to see the progress of the group.
6. Genereux asked Torgersen how he describes QJAHS and its role to others who have not heard of the organization. Torgersen emphasized the role of QJAHS in building the base for water data in the US, meeting the need for information about hydrologic data to inform management. Torgersen also highlighted the role of QJAHS in aggregation of different data types and translation of this information into useful inputs for modeling and forecasting.
7. Valocchi reported on the status of the Executive Director search committee. He noted that a total of 6 applications have been received for the position, and that the search remains open. Valocchi reported that the committee will move forward with phone interviews and will provide regular updates. Torgersen articulated the need for a smooth transition of leadership. Torgersen reported that by the end of Year 4 of the current cooperative agreement QJAHS would need to be preparing a renewal proposal. Torgersen reported that both he and Russ Kézl will be engaged in managing the cooperative agreement.
8. VanBriesen asked Torgersen for his metrics in defining QJAHS as a world-renowned success. Torgersen responded that this is a function of the services that QJAHS is providing to its user community. Torgersen expressed concern about activities that can be viewed as completed tasks in comparison to ongoing services. He encouraged QJAHS to chart a course of providing continual service to the community. He suggested a repository of models that are useful to others, including possibly standard benchmarking activities for models and evaluation criteria, was a possible direction.
9. Hooper asked about the role of instrumentation in the future of QJAHS, in the model of the CTEMPS. Torgersen responded that instrumentation, as a service to the community and supported by stable funding, would be reasonable in the proposal. He articulated this as an incremental build upon the well-established base. Torgersen stated the need to articulate what it would take to reach the "next level" of hydrologic science, including data management, observation networks, modeling, organizing personnel, training, or any other relevant activity.
10. Hooper reported that QJAHS increasingly collaborates with NCAR. He asked Torgersen if there was any advice related to working collaboratively with NCAR. Torgersen noted the recent DCL was to enable people to translate rainfall from the atmosphere to the landscape and translate ET signals from the land surface to the atmosphere. He noted this interface is important to both communities, and that cross-disciplinary teams working at the land-atmosphere interface is the central challenge for that DCL. As a result of the funding line for NCAR, no NCAR scientists are able to submit for NSF funds. As such, any activity with NCAR requires that funds would come from outside of NCAR, though they can act as a subawardee. The group discussed opportunities

for AGS to fund NCAR staff, though that was not standard and would have to be part of NCAR's budget. Torgersen suggested that if a collaboration would be ongoing and useful to NCAR's goals that support could be directly written into the NCAR cooperative agreement.

11. Tyler asked if CUAHS should be advocating for funds to be included within NCAR to support their staff to work on collaborative initiatives. Torgersen stated that if WRF-Hydro is not satisfactory to the CUAHS community that CUAHS should advocate for a role in helping advance the tool. He suggested the base established from the NHE is a useful justification for pursuit of terrestrial hydrology advances.
12. Mackay asked about possible follow-ons to the current CZO network, and what the future would be for that program. Torgersen stated that the CZO program was currently underfunded because of flat funding within the GEO directorate. He reported there is general agreement that CZOs have a unique value, but the ability to expand access to the CZOs to the community is a struggle for the community. Torgersen expects some additional 5-yr increment in funding, if they demonstrate science and utility by the community in a unique way.
13. Hooper asked about the role of CUAHS in helping to sustain relevant efforts coming out of EarthCube and similar programs. Torgersen suggested that CUAHS could position itself such that it would be a collaborator on GSE initiatives, providing a service to facilitate data use and archival in addition to a contributor on programs. Torgersen noted Track 2 of the INFWS is along the lines of adding cyberinfrastructure relevant to hydrology. Hooper summarized that CUAHS needs to be seen as a desirable partner for sustainability and community engagement, but more importantly as a partner in research.
14. Hooper suggested a design related to building, running, and maintaining a national water model. This would include the necessary cyberinfrastructure to operate the model and meet the initiative.
15. Hooper asked if a short write-up of the future of a national water model and the associated infrastructure and investment would be useful. Torgersen agreed this would be useful, particularly in defining common ground between operational forecasts, research advances, and support from a range of possible agencies such as NWS, NSF, and DOE.
16. Torgersen asked about progress related to business and science planning for CUAHS. Hooper reported that CUAHS has reviewed each activity for possible business opportunities. One key area for growth is that the data services in the WDC, which were discussed with the USDA. A second growth area may be in the management of instrumentation and data management services for the community, such as data telemetry. Hooper also reported discussion of services to foundations, and possibly selling access to the data catalogue. Valocchi added that the engagement with the National Water Center may be an area for future growth. Torgersen suggested that Don Klein, who recently transitioned to the USGS, may be an opportunity to address groundwater more substantially in addition to continued effort with the NWS. Torgersen also noted that both short- and long-term goals and milestones should be developed, and documentation of community endorsement of these activities via user metrics is important.
17. Torgersen noted the importance of a succession plan, risk plan, and business plan for CUAHS. Valocchi noted having a deputy director in place will help with these planning items and the sustainability of the organization.

Item 5. Nominations for Chair and Executive Committee

1. Hooper reported that the Board of Directors needs to select a chair-elect and one at-large members for the Executive Committee. Hyndman summarized that the chair-elect would serve a three-year term as chair-elect, chair, and past-chair. The ExCom consists of the three chairs, plus

two at-large members from the Board of Directors. Hooper noted the ExCom is often used as a sounding board to vet ideas and prepare proposals for the Board of Directors to take action.

2. Hyndman opened the floor for nominations to the position of chair-elect. Nominations were made for Todd Rasmussen and Dave Genereux. Jeanne VanBriesen was nominated as an at-large member of the ExCom.

Wednesday, January 27, 2016

08:00 EST Call to Order

Item 3 (Part II). Other Programmatic Activities for 2016

Item 3.4 Instrumentation Services

1. Hooper discussed CUAHS as a hub for community instrumentation, which has been an interest since CUAHS was established. The group discussed the vision of the virtual hydrologic measurement facility as a hub to allow the community to self-organize themselves as nodes. The group discussed NSF support for instrumentation facilities in general, including the challenge of hydrological instruments as smaller, spatially distributed networks rather than single major instruments.
2. Hooper reported two existing success stories in hydrology as the CTEMPS service and the X-band radar with Wittek Krajewski.
3. Tyler agreed that the model of the current services has not been successful. He stated that the instrumentation node is not well-aligned with CUAHS' evolving mission. He endorsed CUAHS moving away from being an instrumentation provider as a strategic direction.
4. Hester agreed that the Instrumentation Committee was supportive of the idea of dropping the current model.
5. Hooper reported that CUAHS and CTEMPS have had discussion over the past several years. Tyler reported that Jim McNamara served as a link between CUAHS and CTEMPS in past years. Hooper suggested CUAHS assume a role of helping support CTEMPS in current operations and possible future expansion.
6. The group discussed the possibility of melding community support via CUAHS to successful PI-led initiatives such as CTEMPS.
7. Gooseff asked Tyler about the vision for a CUAHS-CTEMPS partnership. Tyler stated that CUAHS helped with the initial effort of CTEMPS and continued to help in advertisement. He also noted that CUAHS would be helping with training activities and outreach to the community. Gooseff asked about management of CTEMPS data as a feedback to the CUAHS WDC. Tyler endorsed this idea, noting that the data types are not currently supported in the WDC. Gooseff suggested that training on data management and the WDC would be useful to CTEMPS users. Hooper indicated that other groups require data to be published publicly as a condition of use. Tyler reported that CTEMPS currently archives all data collected and makes it available, though access could be improved.
8. Hyndman asked about the potential of expanding the CTEMPS model to include additional types of instrumentation. Tyler noted CTEMPS has been expanding in recent years, but also noted that the existing CTEMPS investment by the individual PIs gives them a feeling of ownership.
9. The group discussed the role of CUAHS in advertising NSF-funded services. The group discussed the need to support additional requests from the community in the future. Hooper mentioned WyCHG as an example of a large NSF investment where CUAHS may play a role in helping sustain this investment.
10. Hyndman suggested CUAHS' role is, at minimum, identifying existing and available resources and advertising them to the community.

11. VanBriesen asked about the strategic directions of QJAHSI and strategically building on these areas of excellence with partnerships. Hyndman stated that there is community support for instrumentation activities, but it has not been clear how QJAHSI will achieve this.
12. The group discussed instrumentation as part of the existing strategic plan, including the potential and challenge related to a "lending library" of equipment. The management of shipping, receiving, calibration, and maintenance was noted as an existing strength of CTEMPS.
13. Gooseff articulated the model of a small group of creative PIs rallying around a technology to the benefit of the community, as was prototyped by CTEMPS. He suggested QJAHSI helping facilitate this as a future effort would be a use to the community.
14. Rasmussen suggested the construction of low-cost sensor networks and managing data feeds was another emerging area of interest to the community.
15. VanBriesen asked how QJAHSI demonstrates support for instrumentation.
16. The group discussed modifying the strategic plan to be actively seeking partnerships with CTEMPS-like efforts, not initiating new nodes. Gooseff suggested highlighting the role of QJAHSI and why it would be valuable to an instrumentation effort is something useful to articulate on the website. Hooper suggested one way to demonstrate this is by establishing this sort of partnership with CTEMPS, which was endorsed by Hyndman.
17. Hester reported that the instrumentation standing committee has been focused around training activities. The committee has been discussing how QJAHSI can supplement CTEMPS and other instrumentation efforts, noting the need for clear direction on their role. VanBriesen suggested that the committee be charged to develop and bring forward instrumentation-related proposals consistent with the strategic plan.
18. Motion to approve resolution #2.
 - a. Motion: Rasmussen
 - b. Second: Tyler
 - c. Discussion: (none)
 - d. Vote: Approved (unanimous)

Item 6. Election of Chair and Executive Committee

1. Genereux and Rasmussen each gave brief presentations of their vision for QJAHSI.
2. The BoD voted by secret ballot, electing Dave Genereux as the chair-elect.
3. Jeanne VanBriesen was elected unanimously by verbal vote as an at-large member of the Executive Committee.

Item 3 (Part III). Other Programmatic Activities for 2016

Item 3.5 Community Meetings

1. Biennial Meeting
 - a. Michael summarized progress on organizing the Biennial Meeting for summer 2016.
 - b. Hooper discussed the need to engage students in the Biennial, particularly those at institutions within driving distance to the site.
 - c. Gooseff suggested the biennial as an opportunity to advertise the WDC and instrumentation services.
 - d. The group discussed possible nominees for the community service award.
2. Hydroinformatic Conference
 - a. Hooper discussed hosting a hydroinformatics conference in 2017, building upon the 2012 and 2014 HIS conferences, plus the 2016 capstone event after the NRE program.
 - b. The group discussed hosting hydroinformatics conference in the opposite summers of the biennial as a regular event.

Item 3.6 Dissemination

1. The group discussed the effectiveness of CJAHSI attendance at GSA and AGU relative to their costs. Hooper reported the booths may be limited in their effectiveness. The group discussed possible integration with AWRRA, EWRI, and other conferences. Tyler suggested integration of CJAHSI with additional groups at meetings.
2. CJAHSI AGU Events
 - a. Hooper summarized existing activities at the AGU meeting, including the early career luncheon and community reception. Hooper reported both were generally well received by the membership.
 - b. The group discussed the cost of the early career luncheon and opportunities to find different venues that would be more cost effective.
 - c. Istanbuluoglu asked about the change of format from the previous meetings at the Hyatt to the current format. Hooper reported that the cost was about \$15,000 for the meeting at the Hyatt. The group discussed that the previous format of the event was repetitive with the membership meeting, and the strengths were community-building.
 - d. Michael suggested increased dissemination of CJAHSI materials at the event. VanBriesen suggested reinforcement of event sponsorship and outreach to the membership could be increased.
3. CJAHSI Marketing and Portfolio
 - a. Hooper shared prototype designs for marketing portfolios for CJAHSI.
 - b. Hooper discussed ongoing upgrades to the website. He is seeking bids on revising the back-end of the CJAHSI website. The group discussed the need to build back-end functionality to support content management and indexing of data. Hooper will continue to work on this with CJAHSI staff.

Item 3.7 Regional Meetings

1. Hooper reported that 2-3 regional meetings per year were held in a 3-yr cycle, ending in 2016. He has budgeted for a new cycle to begin in 2016. Hooper led a discussion of the cost of these meetings relative to their benefit to CJAHSI. Hooper stated that the benefit is engagement with CJAHSI members and engaging them with CJAHSI, as well as advertisement of CJAHSI services. Hooper suggested the activity be continued with the new director.
2. Hyndman reported that the activity is also useful for community-building within each region.
3. The group discussed the opportunity to add WDC training to the meetings.
4. Gooseff suggested organization by basins rather than states to leverage common interests. VanBriesen agreed this would be a useful framework.
5. Loheide suggested increased face-to-face time for a new Executive Director would be especially important in the coming years.
6. There was general agreement of the Board that this was useful to continue.

Item 3.8 Governance

1. Hooper reported that the size of the Board is large compared to other, comparable organizations. Hooper raised the question of whether there should be a smaller Board and/or non-elected members who represent groups (e.g., early career) or people with specific expertise (e.g., legal).
2. Hooper reported that any change of the Board structure would require a vote by the membership.

3. Valocchi noted that adding business expertise to the Board was suggested during the management review.
4. The group discussed past efforts to diversify the Board in terms of connections from hydrology to other disciplines, noting that such linkages are useful but need to be balanced with a representation of the core community.
5. Hyndman noted that the new Executive Director may benefit from a larger board, or from an ability to help direct the future of the Board. The group consensus was to discuss this with the new Executive Director upon hire.
6. Tyler suggested a subcommittee be formed to evaluate the current Board and options for future structure.
7. Motion to approve Resolution #3.
 - a. Motion: Gooseff
 - b. Second: Loheide
 - c. Discussion: (none)
 - d. Vote: Approved (unanimous)

Item 7. Business Planning

1. Hooper summarized recommendations of the NSF Management Review.
2. Hooper has worked to summarize key activities and their justification, current funding levels and sources, and identify possible future funding mechanisms for each activity.
 - a. Hooper summarized four potential funding opportunities for CUAHS as part of the business plan. Activities are including selling data publication services to other federal agencies, providing data management services, charging for commercial access to the HISCentral Catalog, and funding from private foundations.
 - b. Hooper suggested that CUAHS could move to adopt the HydroShare software stack and integrate this effort with the WDC. He noted that it would require additional development to improve scale and reliability in performance. The group discussed the ability of HydroShare to include model inputs and executable. Hooper suggested that the first step would be to review the HydroShare code, identify specific requirements to make the system ultimately portable to the WDC, and identify the resources required to achieve these steps. Hyndman asked if HydroShare resources could be used to help enable some of this transition.
 - c. VanBriesen asked about the value of HydroShare to CUAHS. She led a discussion about the funding to support this effort. The general theme was that CUAHS' plan and the HydroShare project would proceed in parallel, with an ideal end-goal of CUAHS considering expanding the WDC to eventually merge HydroShare into the portfolio of CUAHS-maintained community resources. The business opportunity here would be to expand CUAHS-provided services to the community, and broaden the portfolio of services that would be of interest to other agencies.
 - d. Rasmussen discussed the role of CUAHS in helping funders meet their data management requirements. It was noted that most universities are advancing their long-term publication of data sets, generally with a discipline-agnostic digital holding system. Hooper noted that discoverability of data is an important service provided by the WDC, via cataloguing data and making it searchable.
 - e. The group discussed potential collaborations with different agencies and funded projects such as the LTER network.

- f. Tyler and Seul discussed the person-hour cost to receive new data sets from the community. Seul estimated 1-2 days of employee-effort to bring in a new data set to the WDC, on average.
- g. Hooper led a discussion about corporate sponsorship of training or fellowship activities, possibly through naming rights. The group also discussed challenges with allowable overhead support from non-federal funders.
- h. The group briefly discussed community modeling advances as a possible opportunity to expand the funding base beyond the NSF. For example, building on the success of the NFE the NWS may be interested in supporting the development of additional tools or services, organized by CUAHSI.

Item 8. Board assignments

1. Hyndman identified the following Board needs and assignments of responsibility:
 - a. CyberSeminar Organization – Singha
 - b. Pathfinder fellows program – Rasmussen, Istanbuluoglu
 - c. Ad-hoc committee for Board Structure - Valocchi, Tyler, Cohen
 - d. Business Plan – VanBriesen, Mackay
 - e. Education and Outreach liaison – Loheide
 - f. Instrumentation Committee liaison – Hester
 - g. Informatics committee liaison – Mackay
 - h. Membership engagement and distribution – Genereux
 - i. CUAHSI Liaison to the CZO Program – Grant (pending discussion)
 - j. Strategic Plan
 - a. the standing committees have been charged with providing input in each of their respective areas
 - b. Hooper requested Board members review the strategic plan in preparation for the February 2016 BoD meeting. He will circulate a version edited by himself, Hyndman, and Valocchi in addition to the previous un-edited version.
 - c. Hooper will coordinate with committee liaisons to help define the charges for each committee
2. Hyndman and Hooper discussed the need for committees to fill their membership with active, engaged members and committee chairs.

Item 9. Approval of Minutes

1. Ward reports minutes from Dec. 2015 approved with the following vote.

Carey	Approve
Hannigan	Abstain
Johnston	Approve
Krajewski	Approve
Waldron	Abstain
Gooseff	Approve
Hyndman	Approve
McGlynn	Abstain
Michael	Approve
Rasmussen	Approve
Valocchi	Approve

Istanbullouglu	Approve
Mackay	Approve
Singha	Abstain
Tyler	Approve

Item 10. Personnel Actions (closed session)

1. Motion to authorize the Executive Director to offer Martin Seul the position of WDC Director.
 - a. Motion: Tyler
 - b. Second: Rasmussen
 - c. Discussion: (closed session)
 - d. Vote: Approved (unanimous)

Item 11. Executive Director Search update

1. Valocchi, Tyler, Gooseff, Seul, and Efi Foufoula-Georgiou have met and discussed existing applicants. Valocchi reported that the advertisement will remain open. The search committee intends to conduct phone interviews and present what they consider to be the finalists to the Board. At that point, the committee expects additional interaction from the Board.
2. The group discussed the balance of the President and Executive Director positions, if they should be split amongst different people. In the past the Board had indicated a preference to keep these combined, though noted this could be considered depending upon the applicant pool.

Item 12. Membership Recruitment and Retention

1. Hooper summarized members who have recently dropped membership. He requested that Board members work with any contacts and non-member or dropped institutions to follow-up on possible membership.

Item 13. Logistics and Administrative Housekeeping

1. Hooper reported that the staff are implementing new software for membership billing. This will also formalize the procedure for tracking Board membership.
2. Hooper led a discussion of moving to Google Docs rather than Central Desktop. Hooper will work on moving in this direction for future meetings, implementing Google docs and drives.

Motion to adjourn.

1. Motion: Gooseff
2. Second: Tyler
3. Discussion: (none)
4. Vote: Approved (unanimous)

14:27 EST Adjourn

RESOLUTION #1

Concurrence on CJAHSI 2016 Budget

The CJAHSI Board of Directors,

Noting:

1. The budget negotiations with NSF on the 2016 CJAHSI Community Cooperative Agreements (EAR 13-38606),
2. The distribution of these funds to support the services of the Consortium as described in Item 2 of the 2016 Briefing Book

Recognizing:

1. The final budget for the Community Cooperative Agreement has not been determined by NSF
2. The No-cost Extension for WDC Cooperative Agreement has not yet been approved

Considering the objectives of the Consortium as laid out in the strategic plan.

Concurs with the budget as outlined in the briefing book and

Requests:

1. The Executive Director report back to the Board when the budget for the Community Cooperative Agreement is approved.
2. The Executive Director reports any significant deviations from the proposed budget.
3. The Executive Director include financial statements for the previous year in future Briefing Books, and more directly linking the budget categories to CJAHSI activities.

RESOLUTION #2

Defining Strategic Directions for Instrumentation

The CUAHSI Board of Directors,

Noting:

1. The terminology virtual Hydrologic Measurement Facility has been nebulous to the community, and
2. the strength of CUAHSI in education and training, data management, community engagement, and facilitation of community-driven initiatives.

Recognizing the desire of the water science community to access increased instrumentation services

Directs: the instrumentation standing committee to articulate a strategic direction for CUAHSI related to instrumentation, providing a report for discussion the Board of Directors in advance of the July 2016 Board of Directors meeting.

RESOLUTION #3

Subcommittee on CJAHSI Board Structure

The CJAHSI Board of Directors,

Noting:

1. The importance of efficient and effective governance
2. Limitations in the current structure of the CJAHSI Board of Directors

Recognizing

1. That any change to the board structure will require amending the CJAHSI corporate by laws

Appoints Scott Tyler, Al Valocchi, and Matt Cohen to a subcommittee of the Board to summarize the current Board status, evaluate the structure of other comparable Boards, and synthesize options for improving the structure and operations of the CJAHSI.

Requests

1. The Subcommittee chair report on progress at the April board meeting
2. The Subcommittee chair provide a final report to the Board in preparation for the July Board of Directors meeting