



Roll Call

10 members are present, 10 needed for quorum. “X” indicates present

Term expires 12/31/2022

Aditi Bhaskar, Colorado State University X
Anne Jefferson, Kent State University X
Anne Nolin, University of Nevada-Reno X
Ashok Mishra, Clemson University X
Jay Zarnetske, Michigan State University X

Term expires 12/31/2023

Jesus Gomez-Velez, Vanderbilt University
Safeeq Khan, Univ. of California, Merced X
Sarah Ledford, Georgia State University X
Margaret Zimmer, Univ. of California, Santa Cruz X

Term expires 12/31/2024

Holly Barnard, Univ. of Colorado - Boulder X
Alejandro Flores, Boise State University X
Gretchen Miller, Texas A&M X
G.H. Crystal Ng, Univ. of Minnesota X
Steven Loheide, Univ. of Wisconsin - Madison X
Gigi Richard, Fort Lewis College X

Officers: (terms expire January 31, 2023)

Troy Gilmore, University of Nebraska (Treasurer) X
Adam Ward, Indiana University (Secretary) X

CUAHSI Staff & Officers Present: Jerad Bales, Troy Gilmore, Adam Ward

Guests Present: L. Lautz, R. Martin, V. Samadi, D. McCay, D. Karwan, B. Wemple, C. Grady

Minutes prepared by Gilmore & Ward

Thursday, 6-Jan-2022

11:00 EST Call to Order

1. Welcome, Introductions and Expectations

- a. Flores initiated each Board member sharing their vision of how they will contribute to CUAHSI. There was much passion for DEI in the organization and community, including the role of CUAHSI in tribal water issues.

2. Report from Executive Director

- a. Bales made a presentation to the Board (slides archived). Key points included:
 - i. CUAHSI presently has 15 full-time staff, 5 holding PhDs, 1 holding a Project Management Professional certification, and most of whom have direct experience in the water resources domain.
 - ii. Bales reviewed 28 current projects and six pending proposals. He noted that CUAHSI has done well in attracting support and diversifying funding streams. He reported the focus on a lesser number of projects with higher dollar amounts has been his focus and that this was reflected in the data presented.
 - iii. The group discussed the process by which CUAHSI engages on new efforts, and the cost vs. benefit of letters of support or other, smaller roles in projects led by other individual PIs or organizations.
 - iv. Bales presented his priorities for 2022 including:
 1. CUAHSI website update.
 2. HIS modernization, including the ability to enable streaming sensor data directly to database
 3. Getting audits up to date and reorganizing financial management (to be discussed tomorrow in more detail)
 4. Launching a CZNet data portal, helping direct users to HydroShare, EarthChem, and Zenodo (using prompts regarding metadata, etc.)
 5. Potentially hosting CUAHSI and CZNet all-hands meetings
 6. Leadership succession for the organization
- b. Bales **summarized travel anticipated including (a) monthly RDU to the CUAHSI office in Boston; (b) FIHM meeting, June 19-25, 2022.**

i. Motion to approve Bales travel as summarized above.

- 1. Motion: Jefferson**
- 2. Second: Nolin**
- 3. Discussion: (none)**
- 4. Vote: Approved (unanimous)**

3. Standing Committee Reports

- a. (note that each committee presented written updates prior to the meeting, archived with the meeting minutes and materials)
- b. Education and Outreach
 - i. Key 2021 Efforts included drafting committee charter, new member recruitment and term regularization, archiving committee records & staff

transition, holding an All-standing-committee-chairs meeting, FIHM planning for educationally-related sessions, Pathfinder promotion and review process update, and Outreach via HydroLearn & AGU H3S communities

- ii. Pathfinder update: no solicitation was made in 2020 due to COVID. The 2021 call focused on collaboration with CZ network, receiving 14 completed proposals, with reviews presently underway.
 - iii. The committee proposed 4 sessions to FIHM including outreach to AGU H3S (student) community
 - iv. Outreach: HydroLearn community; 50+ modules from 58 participating instructors, NSF grant expiring; noted in June 2021 HydroLearn workshop that not many were aware of CUAHSI/resources
 - v. 2022 Plans: Pathfinder review, ID 2nd board liaison; regularize new member recruitment and onboarding; develop 2022 work plan; build community among members, board liaisons, and staff
 - vi. Jefferson initiated a discussion of who would pick up effort associated with new processes for the committee.
 - vii. Gomez-Velez asked about metrics that the committee uses to evaluate its efforts and progress.
 - viii. Bales noted HydroLearn is a useful resource and expressed a desire to not let the project sunset or fade away. The group discussed possible mechanisms for support.
- c. Instrumentation Standing Committee
- i. Spring 2021 Instrumentation Discovery Travel Grant (IDTG): 5 proposals we received, 3 were funded
 - ii. Anticipated efforts for 2022:
 - 1. Recruit committee members; finalize charter; increase/diversify membership; review/revise IDTG call
 - 2. Revisit: what is an instrument? Better incorporate field observations and experiments?
 - 3. Discuss future workshops/clinics/etc
 - 4. Strategize including blog, instrumentation wiki, etc.
 - 5. Set new committee priorities to reflect new membership
 - iii. The board discussed the potential to rebrand the committee “Observation and Data Generation”, broadening the scope beyond instruments per se to a focus on primary data generation (to which instrumentation remains essential).
 - iv. Jefferson suggested the potential for training on social science methods including survey research and interviews.
 - v. Flores asked about a role for CUAHSI instrumentation that would reach community partners.
- d. Diversity, Equity, & Inclusion

- i. The group discussed the need for clear and appropriate Codes of Conduct for all CUAHSI events, including sound policies with reporting and investigation necessary
 - ii. Nolin discussed access to field equipment and sites as an issue for DEI
 - iii. Zarnetske asked about intersections between this committee and other standing committees, noting that collaboration would be important to ensure DEI was integrated during activities by other committees, such as fellowship proposal reviews.
 - e. Informatics Standing Committee
 - i. Hydroinformatics Innovation Fellowships continue to be a high profile task for the committee. Flores asked to what extent proposals are leveraging vs contributing to Hydroshare? Vidya notes that ability to use CUAHSI products is part of rubric & estimates 70-80% proposals have strong components. McCay noted data services staff introduce fellows to data services, etc., before they start their project to maximize the use of CUAHSI services in each project.
4. Board Discussion of Standing Committees
 - a. Reflection and summary of reports
 - i. Jefferson recalled conversations from Spring 2020 discussing whether standing committees should be tasked by the Board vs. should operate autonomously. That decision was to mix the two, but Jefferson noted that there was little direction being provided by the Board.
 - ii. Bhaskar discussed potential awards or funding via the DEI standing committee, noting all other committees have a fellowship to manage.
 - iii. Ledford suggested DEI is wanting/needing some visioning; what is CUAHSI going to do? What about larger hydrological sciences community? The Board discussed the need for DEI to be threaded through everything CUAHSI does, including through other standing committees. Miller asked if DEI needs a charge to serve in oversight role? Flores suggested all standing committees need to liaise with the DEI committee.
 - iv. Miller suggested tasking Board liaisons to report out regularly on their committee meetings and activities.
 - v. Jefferson suggested the Board should review and approve charters for standing committees, which was endorsed by several others. Flores proposed to bring back regular updates from standing committees at Board meetings.
 - vi. Miller was pleased to see standing committees taking leadership roles in sessions at the FIHM, wondering if a similar role may be appropriate at the biennial and/or AGU Fall meeting. The group discussed this as a bottom-up activity vs. top-down task.
 - vii. Loheide noted that two-way interaction between the Board and committees is important for assessing how CUAHSI is addressing the hydrological community. However, he also noted a tension between wanting big ideas from the committees vs. being able to implement big

ideas given resources of the organization. The group discussed the role of the Board to identify and secure resources to enable committees to expand, grow, and pursue big ideas. Bales, Jefferson, and others discussed ideation by the standing committees that would feed into the strategic planning and/or NSF renewal activities. Flores endorsed this with a “Yes and” approach to standing committees, wondering if CUAHSI could be a clearinghouse of sorts for ideas that may ultimately result in more resources for CUAHSI and for the hydrological community?

- viii. Zarnetske asked if the people on the standing committees have had an opportunity to provide feedback on their experience? Was their time well spent, etc? Anonymous or otherwise, would be good to have raw feedback to the Board as decisions are being made.
- ix. Mishra suggested one hydroinformatics committee next step would be highlighting the committee’s mission and effort in an EoS magazine article, particularly with elements of student engagement and outreach.
- b. 2022 priorities for the standing committees
 - i. The Board discussed the requirements for charters and charges for standing committees. Bales suggested that a few years ago the Board decided to have the same generic charge for all standing committees. While the generic charge is useful, there may be another layer of oversight with shorter-term objectives or priorities.
 - ii. Miller and Bales discussed the Board providing a charge and the standing committees responding. Several others noted that some aspects of what the standing committees included in their reports were more akin to bylaws for committees (e.g., term limits) as opposed to strategic efforts.
 - iii. Flores endorsed a two-way charge; where expectations for the board responsibilities, and expectations for standing committees were clarified.
 - iv. McCay noted that charters were more operational documents, in part because it was difficult to recruit members when it was not clear what the standing committee was doing.
 - v. Ledford noted there is no time where the whole board meets with a whole standing committee. She emphasized an earlier comment that there is not a good feedback mechanism from standing committee members to the Board, and this communication may be useful.
 - vi. Nolin desires more clarity in expectations for board liaisons, and also expressed a goal of staggered liaison responsibilities for continuity. Loheide agreed.
 - vii. Miller noted that being more thoughtful at the end of brainstorming sessions, including potential ideas and action items that are relevant to each committee, may be useful. Liaisons could fill this role.
 - viii. Khan asked about the role of the DEI standing committee with respect to implementation of the strategic plan. He asked about how to assess and evaluate success across CUAHSI’s portfolio.

- ix. Khan asked about the low number of applicants to small grants. Flores notes that those numbers were dropping pre-pandemic, but agreed they are low at present. He suggested clearly defining the purpose of each and advertising them with intent would be critical. Bhaskar asked about a standing committee review process, noting a document from John Pollak that outlined a proposal review system.
 - x. Jefferson suggested giving new board members an idea of what they can volunteer for before they join. Flores noted some of that was done yesterday during orientation, but agreed that it was important for engagement between the Board and standing committees and liaisons are a place many Board members engage early in their terms.
5. Report from NSF
- a. Lautz was pleased to note CUAHSI is receiving funding from multiple sources, including other NSF programs and other agencies.
 - b. Lautz made introductions of Hendratta Ali (rotator in Hydrological Sciences, in Critical Zone working group), Raleigh Martin (Geoinformatics, Geomorphology and Wind Driven Sediment), and Richard Yuretich (Critical Zone network).
 - c. Lautz reminded the group to review several programs, including:
 - i. NSF 22-540, the new Hydrological Sciences solicitation with quite a few updates, including broader impacts, and access + DEI support.
 - ii. DCL 21-124 Critical Aspects of Sustainability-Climate (GHG goals & adaptation; note hydrological aspects, such as climate impacts on water cycle/availability, land-atmospheric interaction; integration of GW in projections of water storage;
 - iii. DCL 22-025 Request for Information on Future Topics for the NSF Convergence Accelerator
 - d. Response to recommendations of Earth in Time report. Lautz reported that AGU is leading a national survey. ; Near-surface geophysics; also a letter from EAR Division Director “EAR-Climate” reminder of climate aspects that are part of EAR; note three major reports, Earth in Time (2020), Earth Systems Science (2021), Global Change Research Needs and Opportunities 2021-2030 (2021)
 - e. Lautz reported that the NSF is currently operating under continuing resolution, but the 2022 budget request includes possible new Technology, Innovation and Partnerships (TIP) Directorate, Public/private partnerships (“solution space” work). She encouraged CUAHSI to consider their role in technology transfer.
 - f. Lautz reviewed several current NSF-CUAHSI activities, including:
 - i. An evaluation of Hydroshare user experience, usage data, etc., including detailed outcomes and challenges for each level of evaluation. This will be critical input for strategic planning.
 - ii. The CUAHSI Management Review will be completed in first half of 2022, and will include review of water data services; community service, leadership, and involvement and CUAHSI’s mission, administration, and governance. The review will include independent ad-hoc reviews, a panel, and an NSF programmatic assessment.

- g. Jefferson asked about guidance from NSF on navigating the continuing pandemic, asking if any guidance should be expected beyond ‘contact your program officers’? Lautz noted that the prior communications still apply (e.g., what can PIs do). Elements of scope, flexible no-cost extension approach, and similar have been used to support PIs on a case-by-case basis. Some supplements have been used to support existing PIs, but this causes funds to be set aside from regular program dollars. The program is currently operating without knowing the 2022 budget.
 - h. Ali brought up COVID contingency plan concept; last year many proposals were reviewed after the pandemic started, so contingency plans were requested. Officers have now stopped requesting that documentation and are working on case-by-case basis.
 - i. Jefferson noted the longer-term impacts and career disruptions of the pandemic, asking if this impacts how people are perceived when submitting proposals in the future with gaps in publication, etc. Lautz noted a new mechanism in NSF - the solicitation for mid-career faculty - may be a mechanism to re-invigorating their research program via a sabbatical-like experience after COVID or any other disruption
 - j. Barnard asked about limitations for students, post-docs, and early career faculty who have been delayed and may have limitations around moving.
 - k. Ledford asked about inflation impacting costs.
 - l. Flores asked if GEO or EAR have thoughts about people with water domain expertise but needing software development expertise - is there a way that NSF might support the training and professional development of people with this kind of skill set? Martin responded that he’s well aware of the tension between earning power of a software engineer and what might typically be paid in hydrological sciences. Mission changes can help this, but stability is also valuable. CSSI has an explicit acknowledgement of this; explicit mentoring plan for research engineers
6. Adjournment
- a. Flores reviewed the schedule and plans for tomorrow. He opened the floor to any new business. Hearing none, the Board adjourned for the day.

16:45 EST Adjourned

Friday, 7-Jan-2022

11:00 EST Call to Order

1. Executive director search process
 - a. Flores initiated a discussion about the path forward for an executive director search. The prior search was led by an ad-hoc committee that included a past Chair, two Board members, and external-to-CUAHSI representative. The Board set priorities for the organization and characteristics for a leader before initiating the search to ensure the strategic needs of the organizer were being met. The

group discussed the grassroots recruitment vs. external search-firm approaches to fill the position. The Board reflected on their own experience in hiring, noting that care should be taken through the process to document decisions along the way.

- b. The group discussed the importance of identifying candidates who support the DEI mission of the organization, and ensuring leadership of strong character for the organization. Ng suggested that one role of an external search firm might be to aid in vetting of candidates. It was also suggested having a ‘search advocate’ with training from their home institution on the committee as a best practice.
 - c. Consensus of the Board was that a search committee should be formed in the near-term to initiate and formalize the process.
2. Responding to TACC Report
 - a. Bales summarized the engagement of the Texas Advanced Computing Center (TACC) group as a lead to review the user experience for CUAHSI’s data services.
 - b. Bales suggested that the Board review the report, but CUAHSI Staff take the lead in understanding and developing a formal response to the review and plan to address recommendations.
 - c. Bhaskar also suggested the informatics standing committee might be a logical lead to engage in interpreting and responding to this report.
 - d. Zarnetske suggested asynchronous review of the report and gathering responses from several Board members could be a logical path forward.
 - e. The group discussed the metrics used for assessment by CUAHSI and the metrics that are being used by other organizations.
 3. Responding to NSF Management Review
 - a. Bales and Flores discussed the management review and the initial response that Bales has prepared.
 - b. Lautz highlighted the unique requirements of cooperative agreement vs. standard awards. She underscored the purpose of the review is both for NSF’s oversight and for CUAHSI to gain feedback from an outside perspective. She noted the outcomes from this review would be a logical basis for ensuring any future strategic planning or proposals would be responsive to community needs.
 - c. The group discussed the challenge of finding reviewers who did not have a conflict with CUAHSI but were informed, noting that there is a significant amount of material to review to help inform the reviewers.
 - d. Loheide asked about the panel logistics. Lautz confirmed that the CUAHSI leadership and reviewers would engage directly, with an agenda set by the review panel chair. The panel would likely prepare questions prior to a briefing from CUAHSI, and likely generate additional questions as a result of a Q&A between CUAHSI leadership and the panel. The panel will produce a written report as a deliverable to NSF.
 - e. Flores agreed to draft a search committee charge and propose a composition for the committee. He would seek input from ExCom to revise and then circulate to the Board for input.
 4. Future of CUAHSI science meetings
 - a. The next CUAHSI Biennial meeting is scheduled for Tahoe in 2023, which carries over from a prior meeting canceled due to COVID.

- b. The Summer 2022 Board meeting will be the time to formalize the planning committee for the 2023 Biennial meeting.
- 5. Membership Application from Smith College
 - a. Bales reported that a complete application for membership was received from Smith College.
 - i. **Motion: Approve the application from Smith College.**
 - 1. **Motion: Ledford**
 - 2. **Second: Jefferson**
 - 3. **Discussion:**
 - a. **Zarnetske noted Smith has been active as a CUAHSI member for several years.**
 - 4. **Vote: Approved (Unanimous)**
- 6. Financial Update (Judy Soules, CRCFO, joined the meeting)
 - a. Bales briefly summarized the history of CUAHSI's accounting staff and approaches, noting that the primary bookkeeper resigned in 2021. Bales identified a firm to help support CUAHSI in the interim, engaging CRCFO to help with CUAHSI's finances. CRCFO has been engaged since late 2021, with Judy Soules acting as CFO. Key challenges include (a) a lack of complete audits for 2019 and 2020; (b) the need to transition CUAHSI to a new bookkeeping system; and (c) incomplete records. Bales reported that CRCFO is going to functionally rebuild the books from 2019 forward in the new bookkeeping system based on bank records. Soules reported that they are working to reconcile bank accounts, transactions, and documentation in the bookkeeping.
 - b. Miller asked about outstanding payments due. Soules reported she is working through past correspondence to ensure CUAHSI is caught up on payments and documentation exists for all transactions.
 - c. Richard asked if any COVID funds were received. Bales confirmed no funds were applied for nor received.
 - d. Nolin asked about any personal liability of Board members for CUAHSI's actions. Soules reported the insurance for the Board members and officers has been paid and remains in good standing.
 - e. Loheide and Bales confirmed that there are no known grants that have ended which should have had additional funds billed to them.
 - f. Jefferson asked about how this impacts CUAHSI's standing with NSF and core funding agreements. Bales reported that a visit from NSF including review and updating of finances, policies, and procedures was conducted in prior years.
 - g. Lautz discussed the need for the Board to be proactive in addressing the fiduciary responsibilities of the Board, and the need for additional reporting, review, and engagement by Board members. She also noted that the Board and Bales should proactively understand the basis for spending reports that are provided to the NSF.
- 7. Logistical Items
 - a. Approval of minutes:
 - i. Flores reminded the Board to please keep up on approval of minutes via action without meeting.
 - b. Spring 2022 Meetings:

- i. Board: 3rd W of each month, 12-1pm Eastern
 - ii. ExCom: 1st R of each month, 11am-12pm Eastern
 - c. Summer 2022 Board Meeting
 - i. The Board face-to-face will not be scheduled to coincide with FIHM.
 - ii. Bales will ask CUAHSI staff to circulate a poll to assess potential dates for the Summer 2022 Board meeting.
 - d. 2023 Chair Election
 - i. Nominations:
 - 1. Flores opened the floor to nominations for the Chair elect.
 - 2. Miller nominated Zarnetske, which was seconded by Nolin and accepted by Zarnetske.
 - 3. Jefferson nominated Loheide, which was seconded by Miller and accepted by Loheide.
 - 4. Hearing no other nominations, Flores closed the floor to nominations.
 - ii. The nominated candidates gave brief statements, and Board members voted by secret ballot (in this case via direct message to Adam Ward set by Zoom). Ward tallied the votes and Flores confirmed them by sharing screenshots of the votes via email.
 - iii. Zarnetske was elected as the 2023 Chair of the Board for CUAHSI.
 - e. New ExCom member election
 - i. Flores reminded the group that ExCom includes the past, present, and future chairs: Miller, Flores, and Zarnetske. Anne Jefferson will continue in her role as an external member. Thus, one new member for ExCom will need to be elected. Flores summarized the role of ExCom and opened the floor for nominations.
 - ii. Jefferson nominated Ledford, seconded by Miller and accepted
 - iii. Khan nominated Bhaskar, seconded by Gomez-Velez. Bhaskar declined the nomination, citing a desire to focus on standing committees.
 - iv. Hearing no other nominations, Flores closed the floor to nominations.
 - v. The nominated candidates gave brief statements, and Board members voted by secret ballot (in this case via direct message to Adam Ward set by Zoom). Ward tallied the votes and Flores confirmed them by sharing screenshots of the votes via email.
 - vi. Ledford was elected to ExCom.
- 8. Board Assignments
 - a. Chairs and ExCom:
 - i. Zarnetske, Flores, Miller, Jefferson, Ledford
 - b. Several members expressed interest in Executive Director search: Jefferson, Loheide, Bhaskar, Miller
 - c. Standing Committees Liaisons
 - i. Instrumentation: Richard, Bhaskar
 - ii. DEI: Ng, Khan
 - iii. Hydroinformatics: Zimmer, Mishra
 - iv. Education & Outreach: Gomez-Velez, Nolin
 - v.

9. Other business

- a. Jefferson reminded the group to participate in surveys about CUAHSI Virtual University.
 - b. Loheide noted plans for 2022 CUAHSI Virtual University are being finalized, and to reach out to him if anyone is interested in adding a module.
 - c. The group discussed how the virtual university served PUIs and makes educational opportunities equitable, which was tabled for a future meeting.
10. Flores opened the floor to any other business. Hearing none, he adjourned the meeting.

13:30 EST Adjourned