



**2009 Board of Directors Meeting
January 8-9, 2009**

**Notes for the meeting are recorded by the CUAHSI secretary (Kevin Dressler) as representation of the discussion topics and point and are not the opinion of the secretary

Minutes

Current Meeting Minutes, January 8-9, 20092

Thursday January 8, 2008

Call to order (Jay) – 8:30 am

Present (Quorum attained, 12 members)

Term expires 12/31/2009

Efi Foufoula, University of Minnesota X
Larry Murdoch, Clemson University (Synthesis Liaison) X
Fred Ogden, University of Wyoming
John Selker, Oregon State University X
Juan Valdes, University of Arizona (HIS Liaison) X

Term expires 12/31/2010

David L. Freyberg, Stanford University X
Patricia Maurice, University of Notre Dame
Jim McNamara, Boise State University X
Kenneth Potter, University of Wisconsin X
Claire Welty, University Maryland - Baltimore County X

Term expires 12/31/2011

Larry Band - University of North Carolina - Chapel Hill
Jay Famiglietti, University of California – Irvine X
Tissa Illangasekare - Colorado School of Mines X
Jennifer Jacobs - University of New Hampshire X
Scott Tyler - University of Nevada - Reno X (By Phone)

Officers:

President: Rick Hooper, CUAHSI X
Secretary: Kevin Dressler, Pennsylvania State University X
Treasurer: Brian Waldron, University of Memphis X

Others

Soroosh Sorooshian (Chair, Senior Advisory Committee) X
David Kirschtel X

X – denotes person was present

Kick-off (Hooper; powerpoint presentation) – review of purpose and spirit of meeting (Rick)

- Need to review CUAHSI's purpose and goals and then solidify those
 - Reviewed CUAHSI mission statement
 - Summary of CUAHSI Science Plan (3 Challenges and 3 Phases)
 - Need to further develop the implementation plan (5-10 pg document)
 - More strategic and focused than science plan
 - CUAHSI goals clearly stated, etc
 - Review traditional mode of study in hydrology versus a possible new approach in developing the implementation plan (that is, this subject and this kind of wording may be appropriate for the implementation)?

- Another way is to identify a key problem and then identify how to address that problem over X amount of years (that is, CUAHSI would advocate and do the science) – Selker

Hooper Suggests that the Implementation plan be organized around the following theme:

Frontiers for Hydrologic Science

- **Water and the Earth System.** Extend theory to account for couplings among parts of hydrologic cycle and among water, rock, biota, and humans
 - Richer descriptions of water movement
 - Need for interdisciplinary research
- **Enhance prediction across scales.** Establish generality of theory and improve predictive ability
- Technological opportunities
 - Web services
 - GIS for interpretive context
 - Fusion of data and models in space and time
 - Development of integrated hydrologic models
- Roles of CUAHSI
 - A. Organizer
 - Goal 1: Integrated Water Data Services
 - CUAHSI Water data federation
 - Liaison to agencies
 - Intersite Comparison
 - Workshop on Community Questions?
 - Follow-up (at Biennial Colloquium?)
 - Goal 2: Improve Integrated Water Cycle Models
 - Fundamental goal of CHyMP
 - Improved accessibility of remotely sensed products
 - Development of Regional Models (management models)
 - Link GCM and Regional Models
 - WRF-Like community model (some benchmark approach)
 - Goal 3: Supporting Synthesis Activities
 - Synthesis summer institute
 - Biennial Colloquium
 - Dahlem-type conference
 - Exploring alternative formats for community activities
 - Goal 4: Improved access to advanced instrumentation
 - Goal 5: Coordinating Existing Measuring Campaigns
 - B. Provider of tools
 - C. Catalyzer of activities
 - Communicator to community and agencies
 - D. Encourage multi-agency support of synthesis

Approval of minutes from October 2008 Board meeting

Motion to approve the October 2008 Minutes: Selker

Second: McNamara

Discussion: No

Approval: Yes

Approval of proposed agenda for today

An official approval was not voted on. After discussion of the day's tasks the group agreed to proceed.

I. Programmatic Overview

Review of Cooperative Agreement Year 1 Budget

The following items were discussed

- Activities/Deliverables
- Management Review
 - Should have implementation plan in place before
- Timeline
- Responsibilities
- Senior Advisory Council
 - Scheduling next SAC meeting
 - Engage when CUAHSI has specific questions
 - NSF requested that the SAC meet 1 or 2 times a year and also form an independent review
 - Coordinate the meeting at NSF and possibly a science seminar by one of the SAC members

Communicating CUAHSI Science Message

- Disposition of Science Plan – Web release
 - Develop the Implementation Plan (for program directors)
 - Need executive summary of both the Science and Implementation Plans
 - SAC meeting should be scheduled, in part, based on these developments (Most likely in summer 2009)
- Emerging Science Themes
- Getting our message out
 - Agency Liaisons, Seminars at NSF

II. Project Details

Observatory Standing Committee (McNamara)

McNamara posed the following questions and points to the Board to help establish direction for the committee

- Purpose
 - How should our original HO goal be modified in the new funding environment?
 - How do we inspire “observationists” to pursue CUAHSI’s 5 goals?

- Role relative to WATERS?
- Do we have a role in the renewed proposal?
- Assess what CUAHSI can do to further document the cause from HOs
- Advise BOD on the progress and direction of HO activities
- Coordinate new activities under the Water Data Federation
- Charge
 - Does the committee create an immediate product?
 - Produce a proposal?
 - Organize grass roots observatory efforts?
 - Position document?
 - What do we do independent of MREFC efforts?

Products Suggested from the BOD

- Advice on the Water Data Federation (incentives, what works, etc)
- Assessment of what CUAHSI can do with existing funding
- Bottom up strategy for observatory network establishment – Selker
- Survey to community for ideas
- OR alternatively take maybe 5 current watershed groups and demonstrate a network

McNamara to send draft charge to Executive Committee to finalize and approve some length of term for members

Sorooshian suggests contacting Steve Williams (UCAR) and Mike Smith (NWS) for their experience on developing network databases for similar purposes to CUAHSI

- Members (currently nine; may want to add one more LTER member)
 - Appointment of members
 - No appointments made

HIS Standing Committee (Valdes)

The following items were discussed at the meeting

- Charge
- Members
- Report of Standing Committee, July, 2008
- Project response/activities for 2009
- Transitioning responsibilities to CUAHSI
- Need to lay out the foundation for the Ontology (display to the community) and possibly reconcile with that being developed for CZEN
- HIS would like to define what needs to be done to incorporate the Web Feature Services of Google Earth, for example

II. Project Details (cont'd)

Education and Outreach Activities

The following items were discussed

- Members
- Responsibilities
- Revised Charge
 - Adoption of revised charge
 - Add: Ongoing evaluation of CUAHSI and its E&O activities (i.e identify opportunities)
 - Reword “background” section
 - Decide what can be done on both CUAHSI base funding for E&O and what opportunities exist beyond that (the vision; a few sentences of the previously crafted vision should be part of the charge)
 - No vote on a final charge
 - Hooper should appoint a separate committee for the evaluation of the Pathfinder Fellowship
 - Possibly invite chairs of the standing committees to future Board meetings

Unstaffed SC: Science, Synthesis, Instrumentation, Research Applications

- Open discussion but no formal decisions on these potential committees right now
- Part of charge for the synthesis committee would be to target what needs to be done beyond what is already funded
 - Also synthesis activities such as cross-disciplinary integration (e.g. bringing in Social sciences better)
 - Hooper to develop a draft synthesis committee charge

HMF Update

- Water Cycle proposal was declined
- Proposal as follow-on to Geophysics was also declined
- Proposing services to the entire community is hard due to not being able to be specific enough about the science results
- Four workshops to date: 1 on geophysics, 2 on DTS, 1 on Wireless sensors
- Selker advocated that the node model will be the best way forward, for it enables better targeting of sufficiently specific science outcomes
- Handbook of Hydrologic Methods
 - 40 accepted publications in WRR for hydrologic methods
- Selker proposes to write up what he feels the opportunities and directions are and pass to the Board as preliminary analysis by May 31, 2009
 - Keep an eye on education here as students have good opportunity to attend and work on items related to workshops
- Also plug in possible short course in instrumentation at the synthesis summer institutes, for example
 - Need to evaluate what workshops and how many are needed to keep HMF opportunities going
- Based on the final report for HMF’s current funding, could develop a new charge for a potential HMF Standing Committee

- Need to start thinking about who to populate a future HMF standing committee with and possibly populate during the summer Board meeting (time and place TBD)

Planning CUAHSI Biennial: Dates, Themes, Committee

→ Adoption of meeting dates

- Late July, August is best for NCAR facility, for example
- July 19-21:
 - Possible Overall Theme
 - Water in the Earth System
 - Water Across Interfaces
 - Board meeting on the 17th, SAC on the 18th
 - Propose to use NCAR facility again

→ Appointment of program committee

- Claire Welty has already heard from 6 people interested in planning

Possible Keynotes

- Head of OSTP? Marc Parlange?

Possible Named Lectures

- Eagleson: Tom Dunne
- Wolman: Maybe Wolman to do his own lecture

III. Financial Issues

Establishment of Committee for Unrestricted Revenue Stream (Waldron/Hooper)

- Financial Background
- → Subcommittee Charge
- → Subcommittee Membership
- No work was completed under this item at the meeting

Disposition of Residual Funds

→ Activities for ~\$80,000 residual funds from core (7/31/09 deadline)

- Consider joint workshop with agencies to address intersite comparisons?
 - And grass root observatory data and questions
 - ½ day HIS training
 - Invite some senior PhD students/Post-docs to give their fresh perspectives

→ Activities for ~\$90,000 residual funds for HMF (8/31/09 deadline)

- Selker proposes 5 or 6 three-part workshop events
 - Motion to use the residual funds on the workshops that were surveyed online, at a minimum (3 stages: planning meeting, workshop and synthesis activity to produce a white paper): McNamara
 - Second: Famiglietti
 - Discussion: No
 - Approval: Yes

IV. Open Meeting: NSF program officer(s) Join (Lina Patino, Doug James)

NSF Program Officers de-briefing

Lina Patino:

- Recommendation was that CUAHSI has done a great job for the community so far
- Many iterations of the budget and still in flux
 - Needed to set an overhead rate so that CUAHSI could seek other funding more easily
- Because CUAHSI was previously all direct monies, the initial overhead rate will be high
- How can CUAHSI be competitive with a high rate?
 - Cooperative agreement should be in place by January 31st
 - Budget in out-years 2-5 can change depending on CUAHSI's needs
- Management review (one early on and then one later in the out years)
 - To occur over the next year and date to be determined
 - Will convene a panel (not of all hydrologists; maybe some management expertise, etc)
- Will circulate a set of questions to CUAHSI ahead of time
- Panel will then convene, CUAHSI will give a presentation and then the panel will comment from the management perspective
 - The review may bring some insights toward the overhead rate and partitioning direct and indirect activities
 - Perhaps focus on where Staff time is devoted toward program development as direct activities – Doug James
 - Focus on what activities are best done through CUAHSI and justify it
- Because CUAHSI is establishing an indirect rate, it is easier to respond to solicitations in other divisions or directorates at NSF

Friday January 9, 2009

V. Engagement with Federal Agencies

Eleven CUAHSI Directors Present from yesterday. (Scott Tyler has not joined by teleconference; quorum attained)

Officers:

President: Rick Hooper, CUAHSI X

Secretary: Kevin Dressler, Pennsylvania State University X

Treasurer: Brian Waldron, University of Memphis X

Others

Soroosh Sorooshian (Chair, Senior Advisory Committee) X

David Kirschtel X

Agency Representatives Present

USGS

Matthew Larsen

Katherine Lins

USFS

NOAA/NWS

Pedro Restrepo

Annarita Marriotti

DoE

Nick Woodward

David Lesmes

NASA

Deborah Hayes (by teleconference)

Jared Entin

EPA

Mark Hamilton

NSF Representatives Present

Robert Detrick

Douglas James

Lina Patino

CUAHSI Overview: Accomplishments and Plans

- Powerpoint was presented by Hooper

CUAHSI Water Data Services and University Data Federation (Hooper)

- Science Context
- Current Memoranda of Understanding with USGS and NCDC
- Potential memoranda with NRCS, EPA
- Delivery of spatial metadata using OGC Web Feature Service
- *One of the most financially expensive parts of the WDS is maintaining the data catalog*
 - Must explore the formula for how this could be reconciled
- Larsen points out that the WDS is getting about 500 hits a day whereas NWIS gets about 1 million/day
 - Hooper comments that WDS has not been available very long and there has been a few bugs at the beginning
 - Hooper then demonstrated the Hydroseek system live online
- Hooper suggest that CUAHSI take a little more time to also work with CZEN before going into iteration and discussion with the agencies to take it to the next level
- Hamilton suggest that Hooper put forth a strategy that is contained and then he can use that to start the process at EPA

Community Hydrologic Modeling Platform (Famiglietti)

- Famiglietti reviewed the Science Context, Concepts and Planned Activities
- Integration with existing agency efforts
 - Look at a Service Oriented Architecture for the environment for the data, for example – Hamilton
 - How do you best build the community?
- Famiglietti discussed organizing on a regional basis so that contributors can test models in areas that they know best
 - Larsen suggested that there is a Federal Interagency group on modeling (ISCMEM)
- CUAHSI should collaborate with this group

Intersite Comparisons (Hooper/Famiglietti)

- Science Context
 - How do we relate measurements in a complex landscape to one-dimensional stores?
- Integration with existing experimental watersheds (ARS, USFS, USGS, DoE)
- Paths forward
 - Workshop to define “Community Questions”
 - Publication of data sets using CUAHSI WDS
 - Basis for conceptualizing regional models
 - Active participation with federal scientists
 - Highlight contributions of agency long-term data sets
- Follow-on activities
 - Campaigns
 - Development of regional models
 - USGS Water for America initiative
 - NSF Water Initiative
 - Linkage between water resources and management research

HMF

Workshop training on insipient technologies to continue to educate the community and also engage agencies (leaders or students) in what the opportunities for these technologies may be

Agency Reactions

Round Table Initial Discussion

Robert Detrick (NSF)

- The HIS and modeling activities are good community activities and the developing collaborations with the agencies is a good approach

Nick Woodward (DoE)

- Technology provider role leaves you with the question of how you put the data into the model
 - What is the science role of CUAHSI in this context?

- Deep aquifer water is increasingly being recognized as connected to active ground and surface processes
- Nanophases in the environment are ubiquitous
- Water measurements today are essential but need to conceptualize the problem correctly to make good predictions with those measurements

David Lesmes (DoE)

- DoE is moving more toward a holistic approach of coupling processes
 - Regional scale water cycle models coupled to GCMs, for example
 - Capture emergent properties at scales that are essential for prediction

Annarita Marriotti (NOAA)

- Interested in the CHyMP effort
 - Focused on interannual prediction and how CHyMP may contribute here

Pedro Restrepo (NOAA/NWS)

- Topics of interest
 - Characterization of uncertainty and sources
 - Data assimilation
 - Science behind the hydrologic models
 - Water Quality and low flow forecasting (need better groundwater modeling in this case)
 - Restrepo expressed that he would like to have more involvement and requested that agencies be able to formally meet with CUAHSI at least twice a year
 - Also expressed that he will collaborate with NSF very soon to begin developing a more formal working relationship, at least how it pertains to CUAHSI

Mark Hamilton (EPA)

- What is CUAHSI's role in science?
 - Governance role in the shaping of the strategy of what we have to deliver in the hydrologic community
 - Greater interagency cooperation toward common mission goals
 - The HIS, for example is a fundamental step in looking for future priorities, holes in the data, etc
- What are the agencies doing to advise on the impact of climate change

Jared Entin (NASA)

- Mission for SMAP (Soil Moisture Access Project) coming up soon
- CUAHSI should remember that they have a role to help the public make connections on what is important in water and why
 - Help target with the agencies what is needed and then provide the tools to do it
 - That is, how do you tell congress what we need?

Matthew Larsen

- Has had a number of collaborations with CUAHSI to date
- Encouraged by CUAHSI's 5 year vision
- Currently evaluating their data acquisition technologies
 - Looking to improve not only the technologies but also the techniques in-situ

- Water management in the future interfaced with climate change
- Water Census (water use and budgets at local and regional scales)
 - Need a modeling system to characterize these
 - Improved regional modeling for water accounting (one of CUAHSI's goal) is synergistic here
 - Improved role for hydrologic science in research policy

Katherine Lins

- Interaction with HIS
 - Started with the daily values database
 - Still a proof of concept because the robustness of the underlying system
 - Units values may be a follow-on (already did with NOAA)
 - EPA and NWIS were never really compatible databases
 - The HIS brought these together
 - Now considering a geospatial component in a web service
 - The real value of CUAHSI is to broker these data exchanges and cooperation
 - The issue is the very small dollars in IT for water at USGS

VI. Election

Election of Chair Elect and (at least) 1 At-Large Executive Committee member

Nominations for Chair-elect and At-Large Executive Committee member

Scott Tyler (second, Welty)
 Larry Murdoch (second, Illangasekare)
 Larry Band (second, Freyberg)

All three above candidates agreed to be considered for either position

Candidate statements for the absent nominees of Larry band and Scott Tyler were read aloud by Claire Welty. Larry Murdoch spoke on his own behalf

Discussion of all candidates was then held after Larry Murdoch left the room

A vote was taken on all three candidates for Chair Elect

- Larry Band won a plurality for the Chair Elect

Then a vote for At-large Executive Committee was taken for the remaining two candidates

- Larry Murdoch won a plurality for the At-Large Executive Committee member

Distillation of Action Items

Hooper to perform this task post meeting

Adjourned: 2:05 pm