**Minutes from W4190, Sep 28, 2023: Davis, CA**

W4190 Annual 2023 Meeting

Davis, California

September 28-29, 2023

2023 Officers: Chair, Lucia Levers

 Vice-Chair, Nicholas Quintana

 Secretary, Mani Rouhi Rad

Administrative Advisor: Glenda Humiston

NIFA Reps: Glenda Humiston

State reports were prepared in advance of the meeting. Details were e-mailed out by Lucia Levers.

**Thursday, Sep 28th**

08:30am-09:00am Roll call and Introductions

09:00am-10:00am Discussion of the W5190 Renewal

10:30am-12:00noon Collaboration Workshop

12:00: Leave to get lunch

12:30pm - 01:30pm Speaker, Carson Capps State Water Board

01:30pm Introduce Objectives/Overlap with Collaboration Ideas/Round 2

02:30pm Short Break

02:45-03:30 Group work: will split into groups interested in objectives and groups interested in discussing projects.

03:30pm-04:00pm: Business items: Vote on objectives, vote on new secretary, take volunteers, logistics for Friday.

04:00pm Adjourn

**Friday, Sep 29th**

08:30am Leave for Trip to [NRCS Plant Materials Center](https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.nrcs.usda.gov%2Fplant-materials%2Fcapmc&data=05%7C01%7Cmani.rouhirad%40ag.tamu.edu%7Cba2019549cf94305757308dbc0f801f5%7C9fd7580a64724d9ca142d131d3a7a116%7C0%7C0%7C638315943645329086%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=i50hyoLgZVxaW8nEyT6CJF9W8Owm6UAWXjBzWezPO1M%3D&reserved=0).

09:30am Arrive at PMC

09:30am-12:00noon Tour of the PMC

1230: Lunch at Tacos Romero

01:30pm Stop in Locke

02:30pm-:03:30pm Tour of Ryer and Prospect Islands

The meeting started with introductions and notes from the president Lucia Levers. She emphasized the role of collaborations on research and proposals and projects for the multi-state. We are also writing a proposal for W5190. The writing committee has been working on the objectives, to be discussed by the full group at the meeting.

Glenda spoke next.

Funding for the multi-state is stable but getting the renewal is critical. The peer review is rigorous. The money goes to the participating universities, and it is determined by the state how the money is allocated to members of W4190: it may not directly go to the program.

Renewal of the multistate into W5190 was a major part of discussion in this meeting.

**Renewal of the multistate project into W5190:**

**Initial Discussion of the Objectives:**

A title along with the following five objectives were proposed by the officers in the writing committee to the participants at the meeting.

**Proposed title**: “Management and Policy Challenges in a Water-Uncertain World”

**Proposed obj 1**. Characterize water resource and human system response to climatic and anthropogenic perturbations

**Proposed obj 2**. Quantify the use and natural capital value of water in different stages of the water budget

**Proposed obj 3**. Evaluate and compare alternative strategies and institutions to manage water and its relationship to ecosystems, land and energy uses

**Proposed obj 4**. Develop Translational water management science products

**Proposed obj 5**. Develop and refine integrated assessment models to study water-related responses to climatic and anthropogenic changes and the design of policies to address natural resource and environmental management challenges

Newly proposed objective for W5190: including natural capital valuation. Seong Yun is a new addition to the group that with expertise in natural capital valuation.

Newly proposed objective for W5190: Translational science, proposed by Steve Buck. Captures Extension, outreach, and other work that bridges research objectives to relevant stakeholders. Could also lead to efforts like a case study competition at AAEA, etc.

To help facilitate the creation of new objectives, the group will work on developing project initiatives that would then be classified under the newly proposed objectives.

The consensus on the “right” number of objectives seems to be ~3. As a result, the group discussed combining different objectives. One thing that emerged is the consensus to combine the 5 objectives into 3.

The plan forward for the W5190 renewal process is to approve the objectives in the meeting, have a writing committee in place and then get into the writing process, coordinating between the officers and the writing committee. We also need to know who wants to be part of which objective. The team discussed new project ideas proposed by the participants and also discussed writing up the projects that folks have ongoing right now.

Glenda added that: 1) the funding for multi-state is supposed to be thought of like seed grant to go after large grant money. 2) In our objectives we need to include environmental justice and DEI in the objectives.

Then the meeting proceeded with the introductions. The list of participants is added to the end of the annual report.

Steve talked about the Western Water Network (WWN), its history and the outcomes of the meeting in Fort Collins. The goal of WWN is to have an audacious plan for doing water related work in the West. Organizing (and leadership) committees of the WWN have developed a roadmap (recommendation).

1. A vision paper has been developed. Thematic areas that are important to focus on and what’s next.
2. Building partnerships, i.e., getting extension and others at the state level to buy in. The goal is to have a networks that crosses state boundaries and goes beyond academic research.
3. Sharing data between states 🡪 a datahub
4. Repository of ongoing and completed research (something like JPAL at MIT)
5. Cooperative extension campaigns at the multistate level. This is a bit unclear. But the idea is maybe to have permanently funded inter-state extension positions.
6. Having a visiting graduate student program.

There will be some updates and updated roadmap for the WWN in next year’s UCOWR and NIWR meeting in Sep 2024.

Glenda: WWN is an effort to make governors see Land Grant universities as their “science department”.

**Renewal of the multistate project into W5190:**

**Additional Discussion of the Objectives:**

Multistate Project Development Initiative:

Each member writes a new topic idea on a post-it note that may be interesting for collaboration.

After selecting interesting ideas, individuals gathered into 4 separate groups to discuss 4 topics in more detail, identifying research questions, data, and possible collaborators.

Each group presented the summary of the outcomes of the discussion from their group:

**Economic Value of Groundwater (contact people: Molly Sears and Nathan Hendricks)**

Topic 1:

* Tradeoffs between valuation of SW and GW: quality, availability (water rights and growing season timing), ecosystem services
* Regions: California, Great Lakes, MRVA.

Topic 2:

* Value of groundwater (without SW): appropriate discount rate.
* What is the market value of the rate of depletion?
* What is the discount rate in the market?
* Regions: Western US, Ogallala.

**Social cost of nitrate contamination (contact person: Karina Schoengold)**

* In both GW and SW
* Algal blooms (HABs), dead zones
* Health impacts
* Regions: Kentucky, California, Kansas have some data
* Extension folks can be included (public health)
* Systematic review paper in the short-term, but in the longer term (SAS proposal)
* Important DEI components here as well

**Drought and lost environmental benefits from electricity generation (contact person: Dilek Uz)**

* If there is a drought, we lose water, then there is lost hydro production
* Renewables may replace more dirty forms of electricity production (coal)
* EPA rulings affect the type of cooling system that electricity generation facilities can use
* Cost of decommissioning hydro-electric dams seem to be high

**Impacts of Conservation and production innovations (technical change) on water quality, quantity and environmental outcomes (contact person: Nico Quintana)**

* Innovative technologies are being invented to solve problems (production) but can create other problems
* There is a need for systemic analysis of new technologies.
* Rolling of center pivot across different states: has it conserved water?
* Marginal lands are brought into production and there are environmental externalities from it.
* This makes it a multi-state effort.
* There could be a special issue on Center Pivot?
* Data is important e.g., WIMAS in Kansas
* Some data around center pivot, could also come from satellite imagery

Carson Capps from the California State Water Board presented on the legal institutions that affect water resources in the state of California.

**Renewal of the multistate project into W5190:**

**Further Discussion of the Objectives:**

The group approved the creation of a writing committee that would lead the writing of the renewal proposal for W5190 and that the writing committee will determine the main objectives for W5190. The proposed objectives are:

Proposed Title: Management and Policy Challenges in Water-Uncertain World

Obj 1. Characterize water resource and human system response to climatic and anthropogenic perturbations

Obj 2. Quantify the use and natural capital value of water in different stages of the water budget

Obj 3. Evaluate and compare alternative strategies and institutions to manage water and its relationship to ecosystem, communities, land, and energy uses

DEI and environmental justice will be added as sub-tasks to the main objectives.

Todd: A point was made about making sure that everyone is represented by the objectives proposed.

Molly Sears (Assistant Professor, Michigan State University) is the new secretary

The group discussed next year’s meeting plan, since typical timing is close to UCOWR. Suggestions were:

* during UCOWR
* After UCOWR
* At MS delta/Memphis?

Since attendance in the meeting is critical for inducing collaboration, Nico Quintana (next year’s president) might do a doodle poll on the availability of individuals and pick the date with the highest attendance.

Participants:

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| --- | --- | --- | --- |
| Mahdi | Asgari | Mahdi Asgari | soon to be postdoc at U Wyoming |
| Steve | Buck | Steve Buck | U Kentucky |
| Paolo | D’Odorico | Paolo D’Odorico | UC Berkley |
| Todd | Guilfoos | Todd Guilfoos | URI |
| Nathan | Hendricks | Nathan Hendricks | KS State |
| Glenda | Humiston | Glenda Humiston |  |
| Munib | Inam | Munib Inam | Grad student |
| Lixia | Lambert | Lixia Lambert | OK State U |
| Lucia | Levers | Lucia Levers | USDA ARS |
| Alex | Maas | Alex Maas | U of Idaho |
| Gaby | Perez | Gaby Perez | U Tennessee |
| Jeff | Peterson | Jeff Peterson | Director Water Center and U of Minnesota |
| Nico | Quintana | Nico Quintana | MS State and National Center for Alluvial Research |
| Mani | Rad | Mani Rouhi Rad | TAMU |
| Karina | Schoengold | Karina Schoengold | UNL and Nebraska Water Center |
| Molly | Sears | Molly Sears | Michigan State |
| Dilek | Uz | Dilek Uz | UNR |
| Yixing | Yixing | Yixing | Postdoc working with Lucia Levers |
| Seong | Yun | Seong Yun | MS State |