

Oct 29, 2012 2:10pm PT
BioEarth Steering Committee Meeting

Location: Sloan 146

Teleconferencing at 509-335-4700, Meeting ID 3232#

Steering Committee Members Present: Adam, Brady, Chung, Evans, Kruger, Lamb, Stockle

Others present: Julian Reyes, Sarah Anderson

Agenda with Notes in red:

1. Announcements:

- a. Next Steering Committee meeting: Nov 26 at 2:10pm PT
- b. Upcoming visits:
 - i. Robin Dennis (Nov 7-9, **this was a great visit, you can view his recorded seminar at www.experience.wsu.edu, click on "Events Calendar" for Nov 8**). Spring: Ilkay Altintas (as a peer reviewer), others: Lejo Flores (Boise State) and Joe Cook (UW). Please let me know if there are others.
 - ii. **Yong Chen (BioEarth collaborator) will be visiting Pullman on April 12. His seminar will be at 3:30pm on agent-based modeling. There will also be an opportunity for BioEarth to meet with Yong informally.**
- c. "BioEarth Integration Topic Meetings". Schedule for fall:
 - i. **Nov 27 (new date)** – Brady and Keyvan, biophysical/econ integration topic; paper idea to look at the economic modeling of joint irrigation technology/cropping decisions and optimal combination over WA
 - ii. Dec 11 – Chad and Andy, decision making, via adobe connect
 - iii. Spring – CropSyst (last stand-alone model presentation), Kepler demonstration, others?
- d. Updates/discussion on recent meetings and events
 - i. Mark Fenn visit (**You can view his recorded seminar at www.experience.wsu.edu at "Events Calendar" for Oct 24**). Mark had mentioned to Dave Evans about a new document on critical loads (http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs80.pdf).
 - ii. Tri-Societies and USDA NIFA climate research PD meeting
 1. **This was a PD meeting for the CAPs, the standard climate change projects, the EaSM projects (next year's meeting will include the WSC projects)**
 2. **At the next meeting, it would be a good idea to ask USDA about having time for an informal discussion focused on stakeholder engagement processes with, e.g., Clyde Fraisse at U Florida, and others. We need to talk to USDA about organizing this. (ACTION ITEM, Jenny and Chad)**
 - iii. UCAR meeting/Yellowstone HPC visit. **We need to think ahead about acquiring use of this facility for next year. E.g., use up all of our current NCAR GAUs, plan for an application for next year, applications due September? We need to plan for this. (ACTION ITEM, Serena and Jenny)**
 - iv. Pacific Northwest climate conference ag session. **A need that was mentioned in this session is a single place for information from all of the regional climate/ag projects to be located at (or at least information on**

who to contact for information). Chad and CSANR folks are planning on working on this.

v. Others?

2. Updates/status from primary working groups towards next year milestones. Mainly, we had a formal update just from economics. A recent decision was made to parameterize the agent-based model (Yong Chen's work) to look at the interfaces between agricultural, residential, and forested systems. Data on zoning will be brought in so that spatial restrictions are not ignored.
3. Updates from newer working groups
 - a. RESM paper. We have been meeting weekly at 9am on Wednesdays. Please let me know if you'd like to join these meetings. We are making good progress on this paper. This paper will have 2 parts: 1) an overview of BioEarth (this part of the paper will be outlined by Nov 26 with very short writing assignments made to various individuals, due back by Dec 7); and 2) a research section with the following research question: How does bias correction of WRF-downscaled meteorological data (i.e., precipitation and temperature) impact the effect that projected climate change will have on variables relevant for decision making, such as April 1 SWE, crop yields, irrigation water deficit, etc... Our hypothesis is that the variables that are most sensitive to thermal accumulation (i.e., the number of degree days) will be most impacted, and these impacts will be strongest for temperatures closest to the zero degree isotherm. We are linking the following models to investigate this question: WRF, VIC and VIC-CropSyst, MEGAN, NEWS, and RHESSys. We are aiming for a Dec 19 submission to Climate Change, in a special issue on regional-scale Earth system modeling.
 - b. Field campaign. We have had a couple of meetings on this with some notes from Brian. Let me know if you'd like to be added to this group. We have discontinued meeting until after WSU has submitted a related MRI proposal, led by Steve Edburg in WSU civil engineering.
 - c. Forum
 - d. Student group. The CEREO students have acquired space in ELB. Contact Julian Reyes for additional information.
4. Timing of next all-hand meeting. A poll was created and sent out. This will occur sometime mid Jan to early March. This will not overlap with the BioEarth stakeholder workshop, currently scheduled for Feb 26-27.
5. Discussion and planning on project integration; revisiting our long-term milestones (attached are milestones from last All-Hand meeting), e.g.
 - a. WRF integration strategy. We have identified a time-line for the integration of the land surface models (VIC, VIC-CropSyst, RHESSys, MEGAN) with WRF, using the CESM flux coupler (CPL)
 - i. WRF/VIC-CropSyst integration (FOCUS is over agricultural landscapes)
 1. Complete VIC land cover dataset (nearly done), although we need to compare closely to Alex's dataset for MEGAN (ACTION ITEM, Mingliang and Xiaoyan)
 2. Get the beta version of the WRF-VIC (using older VIC version) coupling from Ruby Leung and test run on our systems at WSU. (by end of year 2012)

3. Complete final VIC-CropSyst coupling (Keyvan) with newest VIC version (v 4.1.12e). We need to think about using code versioning software to be able to update the VIC-CropSyst coupling with new versions of VIC as they continue to become available. (Jan/feb 2013)
 4. Calibrate (**AT HOURLY TIME-STEPS** in full energy balance model) the final VIC-CropSyst (with newest VIC version) over entire CRB (Mingliang) with a targeted focus on the Yakima (Keyvan). (mid spring 2013)
 5. Obtain new WRF-VIC coupling from UW (sometime mid spring 2013)
 6. Update this coupling to handle VIC-CropSyst (Mingliang) and test (by summer 2013),
 7. Bring in routing/reservoir modeling into online VIC-CropSyst (summer 2013) Kirti
 8. Integrate in economics (summer/early fall 2013) (Kirti, Mike, Yong)
 9. Integrate MEGAN as a step towards bringing in WRF-CMAQ-(VIC-CropSyst)-MEGAN simulations (summer-fall 2013).
 10. Bring in CMAQ: WRF-CMAQ-(VIC-CropSyst)-MEGAN simulations (end of 2013).
- ii. WRF/RHESys integration (FOCUS is over natural landscapes)
 1. Complete RHESys downscaling strategy for both forested and grassland ecosystems (spring/early summer 2013) (Jun and Julian)
 2. Complete upscaling of RHESys over the region using downscaling strategy and spin-up C:N:H2O variables (summer/early fall 2013) (Mingliang)
 3. Add in processes from VIC for incorporating full energy balance soil thermodynamics and snow model and test (summer/early fall 2013) (Mingliang, Jenny, Naomi)
 4. Update flux coupler for WRF-RHESys simulations and test (by end of 2013)
 5. Integrate MEGAN as a step towards bringing in WRF-CMAQ-RHESys MEGAN simulations (early spring 2014).
 6. Bring in CMAQ: WRF-CMAQ-RHESys-MEGAN simulations (summer 2014).
- b. Kepler – now that the tool is coming along, we may need to have a workshop to really nail down what sequence of models will be as we move from sequential, to iterative, to coupled. (**ACTION ITEM, Joe and Jenny**) Sometime in the spring we need to schedule a 2-3hr workshop to decide on model sequences to set up with Kepler.
 - c. Stakeholder workshops, do we need to think about how these are time-sequenced in terms of types of model outputs available?
6. Discussion on ideas for collaboration with other projects, leveraging resources, etc...? E.g. REACCH, NARA, WISDM, new proposals, etc.? Cailin Huyck Orr (WISDM lead) is

planning to meet with the BioEarth steering committee during the next meeting on Nov 26.

7. Other?