**CNH Team Teleconference Call**

**January 6, 2017**

In attendance: Weizhe, Joe, Kathie, Armen, Cayelan, Kelly, Paul, Hilary, Nicole, Mike S.

1. Agenda overview
   1. Data archiving at end of call
   2. Needs for workshop for Mendota
2. Team reporting
   1. Cycles (Armen)
      1. Update
         1. Kurt is working on P paper (in review), code not running yet
         2. Edited framework manuscript
         3. Databases for crop management simulation, difficult due to paucity of information (management fertilizer app rates, when, in which form, at which depth, by how many producers; can get numbers at county level or HUC-8 watershed; after that, they get an average, that needs to be distributed over landscape; initializing soil is also an issue)
            1. Bypass – go simpler
            2. Resolve – use more dynamic approaches
         4. If averages are correct, that will be sufficient
      2. Goals
         1. Database for Mendota
         2. Paper for P with code
         3. Paper on Cycles-SDP integration
   2. Econ SDP (Kelly)
      1. Update
         1. SDP yield function estimation, parametric and nonparametric
      2. Goals
         1. Cycles-SDP integration and paper
         2. SDP-GLM efficiency frontier paper
   3. PIHM (Paul on behalf of Chris)
      1. Update
         1. Close to calibrated model for Mendota; trying to figure out weir operations (subset of data covering 2005-2010)
         2. Data in next month to be passed and integrated with GLM
         3. Approx. 3000 grid cells (very large in size, a few ha each); this affects detail of management practices used in Cycles; grid cells differ in size across the catchments
            1. Size of cell depends on gradient (large changes mean smaller cell sizes); not automatic, set-up is manual
   4. GLM (Paul, Cayelan)
      1. Updates: Paul
         1. Integration of PIHM outputs and GLM, expect to be done first quarter of this year
         2. Calibration of GLM for Mendota and Sunapee, collecting observational data, understanding underlying parameters, running 1,000s of simulations
            1. Working on phytoplankton calibration over last month for Mendota (through HT Condor, using equipment capacity in another project to help this one)
            2. Hilary working on sensitivity analysis, identify levers we can change to effect changes in water quality, can be applied across lakes
            3. Possible inputs to Mendota over suite of scenarios, can explore that space through something like a sensitivity analysis (for the SDP-GLM analysis)
         3. Papers
            1. Phytoplankton distributions in Mendota (paper through PRAGMA) effects on water quality
      2. Updates: Cayelan
         1. GLM output to Hedonic analysis (aggregating to annual scale)
      3. Goals
         1. PIHM-GLM integration
         2. Paper dealing with sensitivities of system, understanding what kind of changes could potentially have a bit impact on Mendota
         3. Understand future of possible water qualities in Mendota, need to be able to deal with what’s flowing into the system and also what’s already there due to long histories of lakes; challenging to model in a way that’s effective over decades to centuries (lack data to understand sediments); working through another project on coring Mendota to get better quantification and mapping of nutrients in sediment (could also transfer to Sunapee)
         4. Paper on drivers of property values in watershed based on observational data
         5. GLM best practices and versioning control, documenting those (not a paper, an online document attached to GLM R package or GLM developer’s website)
         6. GLM for Mendota and Sunapee, individual papers likely to arise
   5. Hedonic (Weizhe)
      1. Updates
         1. Property values data for 3 lakes, cleaning at same time (finish Jan-Feb)
         2. Meeting with GLM team about observational data before first estimation of hedonic model (first-stage model estimation first, then move to second stage)
      2. Goals
         1. Paper on observational versus modeled data for first-stage hedonic model
   6. Social Science (Mike S.)
      1. Updates
         1. Recruiting graduate student – start ramping up that effort
         2. Data sources with Eric Olson
         3. Ad to Oneida Lake to elicit data sources from members/citizens
         4. Getting into conceptual part of the analysis, how to fit into framework paper
      2. Goals
         1. Data collection with grad student for at least 2 of 3 lakes
         2. Unlikely to have something until year 3 for social science paper, but maybe something looking at housing price changes and lake response
   7. Scaling Up (Joe on behalf of Pat)
      1. Updates
         1. Newest version of LAGOS released 4 days ago; analysis to be presented next meeting
      2. Goals
         1. Papers
            1. Scaling up question, given an individual lake, e.g. Sunapee, how do we identify similar lakes for scaling/extrapolation (150-200 lakes similar to our set of focal lakes)
   8. Broader Impacts (Kathie)
      1. Updates
         1. LSPA conversations, thinking forward to year 3 workshop
         2. Graduate student broader impacts (Nicole to report on paper work)
         3. Lake associations and working with Sunapee datasets (Nicole and Bethel) meeting weekly, back-and-forth with lake associations; impact about awareness of types of data necessary to understand lakes and watersheds (a new type of BI)
      2. Goals
         1. Strategic planning retreat with LSPA, interactions with projects like CNH part of the agenda – will report out next month
         2. How can we use linked models with visualizations to communicate with citizen groups
         3. Hoping to engage with Mike’s student in coming year
3. Paper Updates
   1. Framework paper (Kelly, Cayelan)
      1. Follow-up questions and round of review this month
      2. Ensure terminology is consistent
   2. Literature review (Nicole)
      1. Screening abstracts from search (~300) to include in review, finishing this weekend; projected to end up with 15-30 papers that fulfill requirements for inclusion in review
      2. Next steps: agreement in screening between reviewers within the group, plan how to pull information from papers for the actual review
      3. End goal: analysis, figures, tables to show everyone by May workshop
      4. Draft intro/methods to send out to coauthors in 10-14 days
   3. Team papers in Year 2
      1. Workshop in May – paper with full loop of models for Mendota (based on observational data with perturbation for workshop)
      2. Essential Management Variables and application to this and other CNH projects
4. Administrative items
   1. March 1 deadline for calibrated, functioning models for each model in the loop
   2. NSF report (Kelly)
      1. Send out to team & post some relevant items on the ODS site (rather than posting the whole thing on the site)
   3. Data archival (Cayelan)
      1. Concerns about dataset removal and need to archive the data now for the project
      2. What are the datasets needed for other modeling efforts? Is there a plan in place to archive?
         1. Armen – a lot of his data is in HydroTerre, but CropScape database is not there (1997-2015 for our watersheds)
         2. Econ data – we can password protect some of the data if need be
         3. Can upload data ourselves into CNH repository? Can we upload that in the next month or two?
   4. Invites for May meeting should go out soon, e.g. CLA, WSC, etc.