Planning meeting  
11 Jan 2017

* New proposal development
  + New solicitation will be similar to the previous, NSF is working on it
  + Long-term datasets make LTER unique, our research and proposal should reflect that
  + Eda will work to make long-term datasets easily visible on the website
* Conceptual diagrams
  + Change “drought experiment” on diagram to “throughfall experiment” (or whatever they decide)
  + Terrestrial/stream boxes – can make them look more similar in terms of word placement for easier comparison
  + Pictures from Katie Yost
    - Divide diagram into two halves, one half what is happening now and other half what we expect in 2100?
    - Diagrams important to illustrate linkage between stream and terrestrial
    - Diagrams for each question – drought yr/wet yr, pre and post hurricane, and land use interactions
    - Foley 2003 Frontier paper shows similar design for forested vs deforested areas
    - Hybrid approach of diagrams and descriptions will be necessary for more conceptual ideas
* Long term datasets assignment
  + 25 year canopy structure – resistance and resilience
  + 27 years canopy arthropods – Drought, hurricane response
  + Tree census data – Microbial signatures, land use
  + LFDP – species coexistence, disturbance response, metacommunity structure
  + Stream chemistry data – Coupled cycling of C and N
  + Fern data – ecology, disturbance response
  + Invert populations in microhabitats – Disturbance response
  + Aquatic insects, leaf litter, water level, shrimp, algae – Stream dynamics
  + Distribution and demography of tree species – regeneration dynamics, distribution due to moisture, hurricane impacts on ED2
  + Precip and weather data, soil O2 – redox dynamics and drivers of greenhouse gases
  + Algal primary producers – resistance and resilience
  + Walking sticks – Large scale and intense disturbance
  + Water budgets
  + Terrestrial gastropods – large scale disturbance
  + Phenology
  + Litterfall
  + Building LTD for microbial communities with CTE and LTEP – change in functional groups due to disturbance
* Up the mountain discussion
  + Should map trees >10 cm in each plot for georeferenced
  + Tana interested in collecting soil around trees to link canopy and ground microbes
  + Replicate micromet sensors at each elevation in case of failure
  + May be a slope or aspect bias with mixed forest plots because they are all on same side of Sonadora
  + Whendee interested in putting oxygen sensors in plots, or doing campaigns with static chambers for gas samples
    - Best to sample every 2 weeks, which would be difficult
  + Long-scale measurement of moisture
    - Soil moisture meters or ibuttons?
    - Take gravimetric soil measurements when changing temperature hobos (every 6 months)?
  + Need to standardize how we refer to plots and subplots – Mike working on draft of this
    - Also need consensus on keywords and labelling of files
  + Should consult with Eda before collecting data so she can help with metadata and organization of data collection
  + Need to take GPS coordinates at the corners of each strata
* Misc discussion
  + No one is responsible for climate data. Some proofing of data for individual sites, but not between sites and not extensive enough
    - Maria, Sarah, Bill, and Jess going to work on this issue
    - Monthly meeting can be used to discuss this issue

12 JAN 2017

**OVERVIEW TALK**

* White text in the first slide, cant see (why LTER slide)
* Litterfall graph – TS Erika, not Emily, caused 2nd peak
* Need description of bars on hurricane graph
* Weak on theory, modelling, aquatic and terrestrial linkages. Not “business as usual”
  + “We have greatly invigorated our modelling approach..”
  + Be more aggressive about addressing criticisms
  + Introduce all the models at once
* Needs general slide at end or beginning to show the key findings/overarching ideas
  + Use this to structure the rest of the talk, needs more organization
* Can cut down details of the CTE section since we have a field presentation and posters
* Place talk in larger context – how does this relate to the rest of the world?
  + Teleclimates
  + Puerto Rico is not an outlier; it is typical of the tropics despite size
  + What are the key questions related to these questions? (Doesn’t have to focus on PR)
* Biggest unknown in climate research is in disturbance regime – wind is a big disturbance in all tropics
* Make sure to consistently use the term “tipping point” - use “inflection point” or “threshold” instead in cases where it returned. Tipping point implies no return
  + We haven’t observed any tipping points yet – system is incredibly resilient
  + May not be good to emphasize stability – past is not going to be the same as the future
* Give them a list of definitions as we are using them as part of their booklet?
* Hugo challenged idea of what the forest was like – some original predictions from 1st proposal did not happen
* Baselines not available for most sites in tropics
* Put photo from CTE next to photo from Hugo to show similarity
* Roots dead during Hugo due to pre-hurricane drought
* Removal of canopy leads to decreased demand for nitrogen
* With new CTE – nutrient flux occurs 3-5 weeks from debris to soil, was picked up in lysimeters
* Nitrogen flux only seen if you do both trim and debris, not just one or other
* Talk about synthesis – special issues, books, etc
* Drivers of productivity and carbon sequestration would help to tie in to other LTER sites
* Timeline showing why we are an LTER site – before NSF, why we ended up in Luquillo
* Longest record of water chemistry, litterfall, etc
* Talk more about the variability instead of average responses – one of “fingerprints” of climate change is a large variability in responses
  + Look at long term variance instead of long term trends

**SITE REVIEW**

* Arrive no later than March 27th for prep on March 28th.
* Day 1 – EV and El Portal, Day 2 – Mt Britton and Sabana
  + Rental vehicles will need to be able to drive up Mt Britton Road – Possibly use van to access gate and then use other vehicles to get people up the hill
* Stream monitoring talk better on 2nd day due to time, but can point out monitoring station on Day 1
* Each step – LTER funding and other funding sources
* Day 1:
  + Start at Whendee’s array – also log decomp and Wadsworth plot
  + Elevation plot and throughfall exclusion
  + Stream drought experiment & Lunch
  + LFDP
  + Radiation center
  + CTE Block B
* Change start time to 8:30
* Talk about change to land use history
* Map could be useful to show in the field – Use tablet with GPS locations for interactive map
* 3-5 slides about what each person is going to talk about at the stops, or a laminated post, or combination
* **ARRAY (20 MIN)**
  + WHENDEE
    - Explanation of array and relation to hypothesis 2
      * DOE funded project
    - Interactions with NGEE tropics group
      * Helps link our site with Costa Rica, Amazon, Panama
  + JEAN
    - Log decomp
* **BRIDGE (20 MIN)**
  + LTER, CZO. Sonadora spot with longest record and most intensively studied
  + Stop over bridge at first good spot
* **THROUGHFALL EXP (15 MIN)**
  + Explain experiment – measurements, pre-post treatment, thermos with coffee
* **350 LTEP PLOT (SAME 15 MIN)**
  + Developing synoptic network, 2 transects
  + Predicted changes for future
  + Expand LTEE to elevation gradient in future
    - Mixing observational and experimental data
* **FLOW REDUCTION EXP (1 HOUR WITH LUNCH)**
  + Tarp for eating under, water refill station, snacks beforehand
  + If people want, they can go see pool 0 or diversion site, but they will have to eat lunch faster
  + Emphasize the long term data from the Prieta
  + Explanation of manipulation, pre-data
  + Linkage to terrestrial – litter inputs, emergence
  + Poster with map of two branches of Prieta
* **LFDP (15 MIN) 2:45 leaving**
  + History of LFDP
  + Chronosequence plots
  + CTFS, NGEE collaboration
  + Animal and microbal long term monitoring
  + Volunteer involvement
* **RADIATION CENTER**
  + Historical context
* **CTE**
  + 1ST trim in field, talk about 2nd trim results at El Portal?
  + Nitrogen flux from debris to soil to water
  + Fungi shift
  + Whendee or Omar to talk about soil? Or Just mentioned by other
  + Experimental design – overview and history
  + Posters in field – Bioscience diagram
* Point out schoolyard LTER demonstration plot
* Back to station by 4:30, shower and change at apartments (Bring soap and towels!), then to El Portal

**EL PORTAL (~5:30)**

* Poster session
  + “Approach” from proposal – have an overview poster
  + Long-term datasets
  + Modeling
  + History of LUQ-LTER
  + “Phylogeny of concepts”
  + Climate
  + Posters making sure to address areas of past “weakness”
  + Educational outreach – REU, schoolyard
  + Bisley experimental watersheds
  + LFDP, StreamFRE, CTE, LTEP – points of integration
    - Need to also show spatial coverage integration across the mountain
    - Met data from IITF
    - Show how mountain changes (maybe include this in booklet and not a poster)
  + Make sure posters have link to their part of LTER – ask them to identify this ahead of time so people can review
  + PDF of poster titles and abstract available online beforehand for reviewers
* Opportunity to meet with students
  + Social for the students the night before so they can meet and look at each other’s posters (Tuesday).
  + Auditorium for use with meeting is possible
* Can point out important posters in introductory remarks

**DAY 2**

* 8:30 – reach the top of mountain
* **MT. BRITTON (1 HOUR)**
  + Importance and uniqueness of cloud forest
  + Palm breaks
  + Top part of elevation gradient
  + Natural history and cloud forest ecology
  + Climate downscaling
  + Tamara
* **191 GATE (20 MIN)**
  + LCZO
  + Drought effects – remote sensing
* **PUENTE ROTO**
  + Bisley experimental watersheds
  + Mameyes
* **SABANA FIELD STATION –** NSF lunch by themselves
  + Talk about what goes on at Sabana field station – history, facilities
* **EDUCATION/OUTREACH**
* **WARMING EXPERIMENT (30 MIN)**
* **WRAP UP TALK (15 MIN)**
  + Remind them that projects they have seen are in various stages and part of a longer project
* Management committee needs to be in town on Friday morning to answer any questions from the review team
* Readout at hotel

**SITE REVIEW BOOKLET**

* Timeline or gap chart to show “milestones”
  + What we have done from the proposal, where we are now, and what we will do in the next 3 years
  + Can clarify any decisions we have made regarding scheduling and shows we are looking into the future
* Tana has a booklet prepared from the NGEE tropics visit, can use that for text and ideas
* List of significant cross site interactions/allied projects
  + Reviewers can decide if they want to hear more about these interactions or not during the visit
* 5 core areas of LTER should be addressed
  + Could organize LTD in terms of core areas
* List of ongoing continuous datasets
  + Eda can make a table with LTDs, core areas they relate to, and PI associated with them. Hypotheses from the proposal can be added

**MISC**

* Monthly meetings will be the 3rd Wednesday of each month at 2 pm EST