

2015 LTER ASM Estes Park, CO Working Group Report

LTER Undergraduate Education: Innovations and Cross-Site Opportunities

WG Session 4, Tuesday 13:30 – 15:30 Emerald Mountain, Glacier Basin

Organizers:

Clarisse Hart (HRF)

Art Schwarzschild (VCR)

Alan Berkowitz (BES)

WG Abstract:

Sites throughout the LTER network educate and/or employ undergraduate students in ecological research. This working group will provide a platform to share best practices, forge cross-site collaborations, and explore external funding sources to better serve students. Break-out group discussions will follow short presentations on the following topics: 1) engaging with LTER student alumni (i.e. providing opportunities for a second summer of research at another LTER site; tracking long-term impacts on STEM career and educational paths); 2) incorporating LTER sites/research into undergraduate course programming; and 3) creating an online clearinghouse for undergraduate opportunities at LTER sites, and partnering with student organizations like SEEDS to advertise these opportunities.

Participants:

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The Working Group began with quick introduction of people present followed by brief (15 minute) presentations by the 3 co-organizers.

Alan Berkowitz presented an introduction to topic # 1: Engaging with and tracking LTER student alumni, providing information from a BES survey. Art Schwarzschild introduced topic #2: incorporating LTER data into undergraduate courses, providing examples of activities taking place at the VCR-LTER. Clarisse Hart introduced topic #3: advertising undergraduate opportunities across LTER sites.

Given the size of the group and fact that all participants were interested in each of the 3 topics, rather than splitting up into break-out groups by topic, the co-organizers led a facilitated discussion of each of the main topics. Below is a summary of possible action items derived from these discussions.

Topic 1: Engaging with and Tracking LTER Undergraduate alumni/students

- *Site-level*: Get lasting contact information for interns (not school/university e-mail addresses) and provide expectation for annual follow-ups in order to better track outcomes. This may involve better use of social media
- *Site-level*: Emphasize the “Long-Term” in the LTER intern experience, providing opportunities for interns to remain engaged with the program after it ends.
- *Site-level and Network-wide*: Find out from students: what is distinctive about the LTER learning/research experience?
- *Network-wide*: develop a common survey for summer interns, REUs and other students that can be used by all LTER sites. This may include surveys before and after the internships/activities to gauge impacts.
- *Network-wide*: Determine how site and Network-level impact/outcomes data may be used for funders, prospective students, and sites’ home institutions.
- *Network-wide*: Standardize some minimum annual reporting metrics of numbers of students impacted by site activities each year.
- *Network-wide and site-level*: Develop an LTER Student Cohort using chat rooms, Facebook, blogs or other form of social media to allow students from across the LTER Network to interact.
- *Network-wide and site-level*: Include alumni in invitations to LTER Graduate Student Socials being held at National Science Conferences like ESA, AGU and CERF (or to smaller regional or site-level gatherings).
- *Network-wide, or subset of sites*: Develop an integrated/distributed REU activity or webinar open to undergraduate interns from across the LTER Network. This should be product oriented, potentially enabling REU from different LTER sites to collaborate on a project or share data.

Topic 2: Integrating LTER into the Undergraduate Experience

- *Site-level*: Determine, possibly through data archive web analytics, how many professors are currently using LTER data in undergraduate teaching. Communicate with some of those professors to see what else could be useful.
- *Site-level or Network-wide*: Develop “packaged” LTER-based lab or lecture activity that could be used by college classes across the LTER network.
- *Network-wide*: Develop collection/ library of archetypal lecture slides centered on foundational concepts in ecology/environmental science and based on LTER site specific data/examples that could be used by professors from across the LTER network and other college/university classes

- *Network-wide:* Develop one or more distributed undergraduate classes to be run by LTER PIs following the model used for the cross-site LTER distributed classes for graduate students. Example could be a course entitled “Introduction to Ecosystem Ecology” with lectures presented by PIs from a variety of LTER sites. With support from the new LCO, this type of distributed class could eventually be developed into a MOOC.

Topic 3: increasing visibility of LTER related Undergraduate Opportunities

- *Network-wide:* Develop and maintain a list of key contact points for undergraduate (and graduate) opportunities at all LTER sites, then maintain a public portal for those opportunities. List of opportunities should be updated every December with a confirmation/update each Spring.
- *Network-wide:* If data nuggets for sites are hosted on Network website, link data nuggets to student research opportunities available at that site.
- *Network-wide:* Compile and maintain an updated list of all LTER sites that serve as REU sites. Also make note of sites that consistently recruit REUs via supplement funding and sites that hire interns using other forms of funding. May also compile a list of volunteer opportunities at LTER sites.
- *Network-wide:* Begin to explore the possibility of a common application, with a single entry portal on the LTER webpage, for LTER REU sites.
- *Network-wide:* Work to develop a program for multi-year REU opportunities. May start with site reps who have exceptional interns providing contact information/references for opportunities at other LTER sites for the following summer. May want to couple this with Diversity recruitment/retention activities, in partnership with SEEDS. May also look to new LCO for logistical support.
- *Network-wide:* Develop some student alumni profiles online, and a network of students who would be willing to be contacted by prospective students.