



UHD Watershed Wonders Summer Research Camp

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NOAA Regional Workshop –May 2015

Brief Project Description:

The University of Houston-Downtown (UHD), Houston Independent School District (HISD), Cypress-Fairbanks Independent School District (CFISD), Galena Park Independent School District (GPISD), and George I. Sanchez Charter School (GSCS) seek to establish a joint research program entitled “**Watershed Wonder: Environmental Camp**”. **Watershed Wonder** will support and foster environmental problem-solving and stewardship among students from underrepresented groups with interest in science, specifically, biology and microbiology, chemistry, geology, environmental science education as related to meaningful environmental watershed experiences and research associated with the San Jacinto River and Harris County watersheds.

Field research will be conducted under the guidance of UHD PhD scientists and undergraduate research assistants with participant students and teachers forming teams. Watershed Wonder research will foster long-term environmental stewardship through field work and investigatory problem-solving experiences.

The Watershed Wonder research project will provide the foundation for student/teacher-based watershed research in environmental sciences and encourage environmental stewardship central to sustainability of urban and suburban environs. Watershed Wonder brings together participants with environmental datasets, which can be used by schools studying watershed mitigation of wetlands that surround major urban areas in the southern gulf coast areas of the United States.

MWEE Reflections:

Experiences are Investigative or project oriented
 Experiences are part of a sustained activity
 Experiences consider the watershed as a system

Lessons Learned Year 1 – Year 2:

Technical Lessons Learned-

- 1) Students would be placed together in one group
- 2) Link to UHD HUNSTEM portal for teachers sooner
- 3) Initiate UHD Minors on Campus procedures for all adults by the November 2-day workshop
- 4) Have UHD/NOAA Watershed Wonders certifications of completion ready for distribution by the last day of camp for all teachers and students
- 5) Encourage more uploading of photos depicting the process of summer research as part of the lesson plan

Program Lessons Learned-

- 1) Bring in teams from the campuses already connected to the Watershed Research Camp project
- 2) Include to a greater degree (plan more time) 1-2 activities to be pursued as “environmental literacy” events at each campus
- 3) Initiate PBWorks page development in the November 2-day workshop for teachers, thus allowing increased acclimation to the use of the shared wiki within the classroom
- 4) Use group brainstorming to generate increased number of ideas as to environmental activism as part of the Nov 2-day workshop; follow-up occurs in the summer week-long camp



- 5) Introduce the peer research leaders during the Nov. 2-day workshop, thus creating a pipeline for conversation among the PI/Co-PIs/undergraduate leaders and the teachers prior to the summer camp
- 6) Encourage return of year 1 teachers to year 2; thus encouraging peer expertise among teachers
- 7) Plan additional time to the national databases connection to the local watershed questions
- 8) Encourage teachers to document the process of research at PBWorks site through written and pictorial means
- 9) Continue to encourage uploads of post-camp campus activities

Technical Lessons Learned-

- 6) Ensure all teachers have name tags for easy conversation and discussion
- 7) Ensure all paperwork is completed by the last day of the November workshop
- 8) Give all teachers the software for use with the probes
- 9) Ensure all teachers have created their PBWorks prior to the end of the November workshop

Program Lessons Learned-

- 10) Provide teachers with a schedule for data collections from local watersheds prior to summer camp
- 11) Provide procedures for collection by Co-PI PhD researchers
- 12) Have teachers identify their watersheds during the November workshop
- 13) Encourage teachers to document the process of research at PBWorks site through written and pictorial means
- 14) Continue to encourage uploads of pre-camp campus activities
- 15) Upload a template excel spreadsheet so that all teachers are collecting similar data points, thereby allowing/encouraging comparison across the many watersheds within the year two population

PBWorks.com:

[http://uhdwatershedwondersresearchcamp2014.pbworks.com/w/page/81674144/UHD%20B
WET%20Project%202014-2015](http://uhdwatershedwondersresearchcamp2014.pbworks.com/w/page/81674144/UHD%20B
WET%20Project%202014-2015)