Feb 2nd, 9:30 AM - 3:30 PM

Research poster: Clark County School District involvement in the NSF EPSCoR Program, Education Component

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Clark County School District Involvement in the NSF EPSCoR Program, Education Component

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Cooperative Agreement
EPS-0814372

Introduction

The middle school education component goals are to create an educational infrastructure for middle school teachers and students by developing curriculum, lessons, and activities that explicate the science behind climate change research and awareness. This is achieved by engaging a crew of middle school teachers from Clark County School District (CCSD) in Las Vegas, NV (Table 1) and a crew from Washoe County School District (WCSD) in Reno-Sparks, NV. A group of fourteen teachers are currently involved in the program, split evenly between CCSD and WCSD. The format is such that each group of middle school teachers stays involved in the program for two years (Table 2) where they attend multiple courses and institutes to train them in climate change science while simultaneously creating curriculum to bring into their classrooms, which meet Nevada standards of inquiry-based learning-Nevada Science Unifying Concept A: E.8.A – E.8.A.6. Upon completion of the two years, a new crew of teachers rotates into the program with the same goal. This poster focuses on the accomplishments of the Las Vegas contingent.

Table 1: Participants from CCSD

<table>
<thead>
<tr>
<th>Middle School</th>
<th>Teacher</th>
<th>Grade</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob Miller Middle School</td>
<td>Erin Strait</td>
<td>7</td>
<td>Earth Science</td>
</tr>
<tr>
<td></td>
<td>Michelle Stratton</td>
<td>7</td>
<td>Earth Science</td>
</tr>
<tr>
<td></td>
<td>Kathryn Grimes</td>
<td>7</td>
<td>Earth Science</td>
</tr>
<tr>
<td>Cashman Middle School</td>
<td>Stephen Schiff</td>
<td>7</td>
<td>Earth Science</td>
</tr>
<tr>
<td>Coral Academy of Science, Middle</td>
<td>Lynn Wentland</td>
<td>7</td>
<td>Earth Science</td>
</tr>
<tr>
<td>Cortney Junior High School</td>
<td>Robert Adamovich</td>
<td>6</td>
<td>English</td>
</tr>
</tbody>
</table>

Table 2: Component Agenda

<table>
<thead>
<tr>
<th>Duration</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 2009: July 13-July 24</td>
<td>2-week Institute on Climate Change Science, Water Resources Focus. Instructor: Dr. Larry Rudd</td>
</tr>
<tr>
<td>Winter 2009: Ongoing</td>
<td>Implementation of lessons and activities from summer institute. NSC CBL-400, Instructor: Dr. Paul Buck</td>
</tr>
<tr>
<td>Spring 2010: Ongoing</td>
<td>JUNV on-line course ENV 779A - Advanced Topics in Climate Change Science. Instructor: Dr. David Hassenzahl</td>
</tr>
<tr>
<td>Summer 2010: July 26-August 6</td>
<td>2-week Institute on Climate Change Science, Natural Disruptions Focus. Instructor: Dr. Larry Rudd</td>
</tr>
<tr>
<td>Winter 2010: Ongoing</td>
<td>Implementation of lessons and activities from summer institute</td>
</tr>
</tbody>
</table>

Activities

Summer Institute – 2009

Images from a field trip to Lake Mead on the Forever Earth Floating Environmental Lab.

We participated in various activities involving Lake Mead water allocation, water chemistry and invasive species, and geology of the region. Forever Earth accepts middle school groups, teachers from Bob Miller Middle School arranged for their students to visit Forever Earth on Lake Mead in September. Cortney Junior High will take students in April.

A group field trip to the Desert Research Institute, Las Vegas where we toured Dr. Buck’s archeology lab (left) and various other lab spaces. The teachers were introduced to several DRI graduate students who spoke to them of their research on the hydrology of Lake Mead. The teachers learned that grad students and researchers will do classroom outreach.

A field trip to the LEED certified Springs Preserve, Las Vegas where we toured the ORIGEN and Sustainability facilities. Springs Preserve offers field trips tailored to specific age groups according to the Nevada State Standards. The teachers from Bob-Miller Middle School arranged for their students to visit the Springs Preserve where they learned about the prehistory of Las Vegas as well as the importance of water conservation, sustainability, and recycling.

Winter Semester - 2009

Each Teacher created a climate change based lesson and activity over the course of the summer institute. Which they then implemented into their Fall curriculum. Above is a teacher explaining her activity involving natural disasters and how they can affect climate change.

Additional Outreach

In Fall 2009, Nevada State College offered a Community Based Learning course (CBL-400), under the instruction of Dr. Paul Buck, where ~16 students brought several inquiry-based learning activities to the middle school classrooms. All students in the CBL-400 course were responsible for learning each activity, which included solar cookers (a lesson about heat transfer) and ice cores (a lesson about dating and understanding the role of ice cores in climatology). CBL-400 students were divided up into groups and distributed to each of the middle schools where they worked, directly, with the middle school students and taught them the scientific value of each activity.

Conclusions

Since our first meeting in July 2009, we have formed a strong, working relationship with four middle schools and seven teachers in the Clark County School District. Where teachers are actively implementing the climate change lessons and activities learned over the course of the Summer Institute 2009. This will be carried over to implement their knowledge gained during the on-line course taking place Spring 2010 as well as the second Summer Institute 2010.