History of Young Scientists Camp at California State University, Long Beach

As a small component of an NSF grant to support elementary math and science teacher preparation, CSULB started a summer science camp program. In 2000 the camp has a dual purpose of providing quality academic enrichment in science for 2nd – 8th grade children while also giving preservice teachers a mentored science teaching experience. The camp was developed to provide an opportunity for prospective elementary teachers to experience science teaching and learning with elementary aged children. The program partners an experienced mentor teacher with a pair of preservice teachers. As a team they spend a week planning and preparing for 35-45 hours of science instruction. Children come to campus for a half-day, hands-on science camp during the next two weeks. Camp is taught in the college’s labs, utilized college science facilities, and includes guest presentations by science faculty. Small grants enabled us to provide financial aid to some families, and GEAR UP partnerships enabled us to support large numbers of students. To date, more than 300 preservice teachers have taught in the camp, approximately 3,000 children have attended.

Benefits of the Camp for Preservice Teachers

- Mentored Teaching Experience – Camp is like a mini-student teaching experience in science. This is especially beneficial for elementary teacher candidates.
- Professional Development Built into the Program – The week prior to the camp is spent collaboratively planning.
- Action Research - Preservice teachers conduct Teacher As Researcher projects, mini action research projects about their own teaching. Mentor teachers collect and share data with preservice teachers about their teaching (to address their research questions).
- Feedback on Teaching – Mentor teachers provide copious written and oral feedback. Mentors team-teach with the preservice candidates.
- Employment as a Teacher – Preservice teachers are hired to teach at the camp so they have paid teaching experience on their resume before graduating. In addition to salary, staff get copies of the curriculum used during camp. Teams share their unit conceptual flow so they have unit and lesson plans for multiple grade levels.
- Opportunity to Share – Preservice teachers can share their experience and expertise with others by presenting model lessons at our NSTA/CSTA Student Chapter or by writing for our department newsletter.
- Improvement as a Science Teacher – Data show us that the preservice teachers have gains in efficacy, outcomes beliefs and actual ability to teach science.

In 2008 funding was secured to bring the camp to homeless children

While there was some financial aid money available, there was no way to make the tuition based science program available for the large population of homeless kids in our local area. In an effort to serve the homeless and highly impoverished in the local district, grant funding and donations were sought to develop a parallel camp. SEE US Succeed! started in 2008. To date ~550 children have participated in SEE US Succeed! (Science Education Experience to help Underserved Students Succeed!).

The need... Approximately 5-10% of a school district’s children are homeless.

The McKinney-Vento Homeless Assistance Act defines the term “homeless children and youths” as individuals who lack a fixed, regular, and adequate nighttime residence; and includes

- (i) children and youths who are sharing the housing of other persons due to loss of housing, economic hardship, or a similar reason; are living in motels, hotels, trailer parks, or camping grounds due to the lack of alternative adequate accommodations; are living in emergency or transitional shelters; are abandoned in hospitals; or are awaiting foster care placement;
- (ii) children and youths who have a primary nighttime residence that is a public or private place not designed for or ordinarily used as a regular sleeping accommodation for human beings;
- (iii) children and youths who are living in cars, parks, public spaces, abandoned buildings, substandard housing, bus or train stations, or similar settings; and
- (iv) migratory children (as such term is defined in section 1309 of the Elementary and Secondary Education Act of 1965) who qualify as homeless for the purposes of this subtitle because the children are living in circumstances described in clauses (i) through (iii).

McKinney-Vento Homeless Assistance Act ensures educational rights and protections for children and youth experiencing homelessness.

This act promotes: School stability and continuity • Access to school, classes and programs • Academic success, and • Child-centered, best-interest decision making.

In the Long Beach Unified School District more than 5,000 students are identified as being homeless. The actual number is greater. Students have academic year support through the district but lack summer opportunities. This project emerged to help fill that gap. Each year additional services and supports are added to the program.

2014 Evaluation Data

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Pre-Test Scores</th>
<th>Post Test Scores</th>
<th>p-value</th>
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<tbody>
<tr>
<td>71% of students showed an increase of at least 1 point on a 4 point scale for content. Matched pre/post test scores show statistically significant gains on content knowledge.</td>
<td>Mean = 0.95</td>
<td>Mean = 2.55</td>
<td>p &lt; 0.0001**</td>
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<tr>
<td>SD = 2.93</td>
<td>SD = 92</td>
<td>** extremely significant difference</td>
<td></td>
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<td>100% of students practiced and learned science and engineering practices and how to use science equipment during camp.</td>
<td>SEM = 0.09</td>
<td>SEM = 0.09 It was found that science camp significantly increased awareness of, and teachers at the homeless camp gained empathy for, homeless (and low SES) students and changed their preconceived ideas about this population.</td>
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<td>Preservice teachers had significant growth on STEBI and increased awareness of, and teachers at the homeless camp gained empathy for, homeless (and low SES) students and changed their preconceived ideas about this population.</td>
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Partnerships Enrich the Camp Experience

- District-university-business/foundations
  - District helps enroll K-8 children and provides space
  - University provides programming & staff
  - Businesses/foundations provide financial support
- City’s free lunch program provides mid-day meals for kids
- Informal science institutions provide additional programming & experiences, guest presentations, hands-on activities
- Dental screening and sealants provided by Smile Bright Foundation
- Vision Screening provided by St. Mary’s Low Vision Center
- Free glasses as needed provided by Downtown Lions Club and Vision to Learn
- School supplies & school uniforms provided by private donations

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