Building and Mentoring: Bringing science and engineering to Los Angeles schools

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What We Do

Building Engineers and Mentors (BEAM) brings hands-on STEM activities to underserved K-12 schools across California. BEAM was founded in 2008 by students at UC Berkeley [1,2], who adopted a two-part model for outreach.

**BEAM's outreach model**
- Student-taught class trains mentors
- Hands-on afterschool STEM program

In 2010, a new chapter of BEAM was founded by students at UCLA [3], who adopted the same outreach model. Each week, UCLA mentors attend BEAM’s student-taught class (Mechanical and Aerospace Engineering 194), to learn how to teach a hands-on activity. UCLA mentors then help the hands-on activity to about 100 students in grades 2-8 at afterschool STEM programs in three schools across Los Angeles. This program repeats weekly throughout the school year. BEAM also develops its own lesson plans, which are designed and written by UCLA students. By participating in BEAM, UCLA students learn how to become effective science communicators.

Who We Are

BEAM at UCLA is open to undergraduate and graduate students of all majors, which gives BEAM a diverse range of expertise. Although BEAM is supported by the Mechanical and Aerospace Engineering (MAE) department, we successfully recruit students from a variety of STEM fields.

**TANMS Partnership**

In 2013, BEAM partnered with TANMS based on our shared educational goal to increase the diversity of students pursuing STEM careers. This partnership has already led to two important developments:

1. (1) BEAM now offers UCLA students a 2-unit course for credit (MAE 194; [4,5]). This course began in Spring 2013, and will continue to be offered each quarter in future years.

2. (2) CSUN students developed and taught magnetism lesson plans in collaboration with BEAM at UCLA.

Get Involved

BEAM is always looking for community partners and sponsors. Community partners could supply us with lesson plans or specialized equipment to inspire a new lesson that we would develop. This is a two-way partnership, which can be modeled after the TANMS partnership. We are interested in diversifying our funding through additional sponsors. The majority of our funds currently come from the UCLA Community Activities Committee, which pays for our lesson materials and for transportation to the schools we serve.

References

2. BEAM at UC Berkeley: http://beam.berkeley.edu
3. BEAM at UCLA: http://beam.ucla.edu
4. MAE 194 Class Homepage on UCLA CourseWeb (Spring 2013): https://courseweb.seaas.ucla.edu/classView.php?term=13&dept=MAE&coursenum=194
5. MAE 194 Course Syllabus (Spring 2013): http://beam.ucla.edu/docs/MAE%20194%20 Syllabus%20PDF.pdf
6. Selma Avenue Elementary School: http://www.lausd.net/YOKA/Selma_Avenue_Elem_ School.html

Acknowledgements

This work was supported by the National Science Foundation through the Cooperative Agreement Award EEC-103999 for Subsidizing NSF 11-1377 (TEAM-ingenious) (D. Deborah J. Johnson). BEAM is also thankful to the faculty and students of the UCLA Mechanical and Aerospace Engineering (MAE) Department for their generous financial support. BEAM also thanks Prof. Arthur Levine (past MAE Dept. Chair) for helping BEAM start its first year, as well Prof. Tzu-Chin Tsao (current MAE Dept. Chair) for his current support. Finally, BEAM thanks all the officers, volunteers, Los Angeles teachers, and MAE Department staff (especially Assistant Director Shin Dong) for their hard work, without them, none of BEAM's efforts would be possible.