

Minutes from Student Retreat and ERC Annual Meeting

These minutes are a very BRIEF version of the handwritten minutes that I have from National Science Foundation (NSF) Engineering Research Center (ERC) Student Leadership Council (SLC) retreat and the ERC annual meeting. I have tried to focus these minutes on items that would pertain to a multi-institutional, multi-disciplinary ERC. As it turns out, the Earthquake research centers are not at all like most of the other ERCs. Therefore, these minutes are “annotated” for that reason.

Introduction by Jeffrey Berman

- Brief outline of what an SLC is.
- Briefly discusses the importance of student involvement at the ERC’s, it is necessary to voice opinions.
- Introductions of everyone in the room.

Alan Krauss - Creating a Student Leadership Council

- Take initiative - Go out on a limb, do something you would not normally do.
- Communicate - Practice talks with other students, multi-disciplinary talks are often useful.
- Personalize - Make the center YOUR center. Have some fun at meetings.
- Have Fun
- Realize Outside World - Invite guest speakers, go on field trips to places relevant to your ERC.
- Sum the Factors
- Serve others
- Then Alan began to juggle things, and it got a little weird.

Lynn Preston - Organizing Students to Strengthen ERCs

- Goals of the ERCs is to educate students to be productive employees right out of school.
- Briefly Lynn discussed the key features of an ERC and what the goals of the National Science Foundation are.
- Survey from firms that are associated with ERCs are seeing the benefit of having ERC students versus non-ERC students. Goal of educating a talented workforce is paying off.

Presentations From All ERCs

Below are some of the interesting ideas that was taken from the SLC presentations. Many of the ERC's are nothing like the Earthquake Engineering Research centers, however the information is still useful in order to try to maintain an active ERC.

- Most ERC's had at least 2 grad students at the meeting, some had even more (strength in numbers theory)
- One of the ERC's has a prize for the best two posters at their annual meeting; prize was a trip to Australia to attend a conference
- - CISST (Carnegie Mellon, MIT, John Hopkins) has a surgical robot competition for high school students - a four day event
- One of the Georgia Tech ERC's boasted 280 students on email list, 75 on slc
- Mid America EQ Center has monthly meetings via the web, slc purchased webcams
- Annual newsletter: A place for students to publish their work. Great for industry to see what the students are doing.
- It was typical for at least 2 students stay as active members of the ERC from the previous year to maintain continuity. Most students on stayed active for a year or two.
- A "best practices" is on the NSF web site that describes how one ERC was able to maintain an active ERC.
- Guest speakers were invited to ERC meetings. This encouraged attendance at meetings. This was also a great way to have industry involved in the ERCs.
- One ERC placed an interactive display at an interactive child place. This could perhaps be done at the exploratorium in San Francisco.
- Combine Groups if possible (i.e. like ASCE/PEER, or EERI/PEER which is better suited in this case)
- It was mentioned by more than one group that active advisors in the ERC makes active students in the ERC. However this was not mentioned for a multi-institutional

- SWOT analysis was done over an internet site, this would be most beneficial for a multi-institutional ERC. Easy for people to contribute their comments.

Pre-College Outreach Breakout Session

Research experience for Teachers. This is where the ERC makes an effort to teach High school teachers what engineers “really” do. This allows kids in high school to get a taste of engineering first hand. A long example of how kids teempted to find what was inside a milky container without actually seing it. High School freshmen were actual able to find a door stop sitting on a platform inside a large milky container. The SLC was responsible for all of the organization, and was completely sucessfull. Many of the high school kids were able to determine what was inside the milky container.

The speakers seemed to come from advanced high schools, and not necessarily from “average” classrooms. Which raised an interesting question - how do you pick which school to go to with limited resources and time?

This brings to mind similar activites that may be good for earthquake engineering. The shake tables to go to high schools, that we already have, we can sponsor some sort of Popsicle stick structure shake test, or perhaps some sort of lego structure tests, similar to the ones that were done at UC Irvine.

Industry/Undergraduate Research opportunities Program

The Center for Subsurface Sensing and Imaging Systems (CenSSIS) has created an interesting way to get students involved in industry. I felt that this parralleled the goals of our BIP intership. There is a web site that explains how CenSSIS is able to attract industry:<http://www.censsis.neu.edu/Industry/IUROP.html>. Basically here are the key features of their program:

1. An undergraduate, co-op student (intern) finishes working at least one-quarter at their corporate employer.
2. When the student returns to NU (or BU, RPI, or UPRM) for a 4 or 6-month academic period “The Company” provides a \$6K research fellowship. \$5K is paid directly to the student (no overhead is charged). \$1K (also, free of overhead) is transferred to the faculty mentor’s research budget for equipment, supplies, and travel to support the student’s research.
3. The student works a minimum of 10 hours per week on research that is of interest to “The Company” when he/she is at school taking classes.
4. The student has a faculty mentor and an industry mentor who guide the student in his/her employment and research experience. In addition, a co-op faculty mentor will help the student integrate these experiences with the student’s academic program.
5. A simple Research Fellowship Agreement is signed between “The Company” and the participating university. There can be no specific deliverables.

“The Company” generally provides this incentive to undergraduate engineering students for whom they have a serious, longer-term interest in as potential employees.

More information about the meeting is available by sending email to patxi@ocf.berkeley.edu