

INDUSTRY ADVISORY BOARD MEETING MINUTES

October 12, 2011

Chair – Brianna Lutes of Infrastructure Engineering Corporation

Host / Vice Chair – Maria Charles of Hamilton Sundstrand

I. Welcome & introductions

The October 12, 2011 San Diego MESA Alliance (SDMA) Industry Advisory Board (IAB) meeting was called to order at 1:03 pm by B. Lutes. B. Lutes thanked M. Charles for providing pasta and for hosting the meeting at Hamilton Sundstrand. M. Charles thanked Rick Elgin for providing pizza. E. Pamintuan introduced himself as the new program coordinator for the grant, resuming Angeline Yang’s duties.

Members present

| Name | Company | Phone | Email |
|---------------------------|----------------------------------|--------------|--|
| 1. Alvarez, Rafael | San Diego City College MESA | 619-388-3393 | ralvarez@sdccd.edu |
| 2. Balazs, Brett | Raytheon | 858-522-3056 | brett_balazs@raytheon.com |
| 3. Charles, Maria | Hamilton Sundstrand | 858-627-6232 | maria.charles@hs.utc.com |
| 4. Garcia, Theresa | SDSU MESA Engineering Prog. | 619-594-5679 | tgarcia@mail.sdsu.edu |
| 5. Gooden, Carol | NASLAND Engineering | 858-292-7770 | carolg@nasland.com |
| 6. Haynes, Kathy | Kennedy/Jenks Consultants | 858-676-7509 | kathyhaynes@kennedyjenks.com |
| 7. Lutes, Brianna | Infrastructure Engineering Corp. | 858-413-2400 | blutes@iecorporation.com |
| 8. Pamintuan, Eric | SPSD/MESA | 619-594-2680 | epamintuan@projects.sdsu.edu |
| 9. Ramos Espino, Jeanette | Imperial Valley MESA | 760-353-2860 | jramos@ecesd.org |
| 10. Schlotte, Wedad | NAVAIR – FRCSW | 619-545-9723 | wedad.schlotte@navy.mil |
| 11. Sheridan, Phillip | Bio4Front Inc. | 858-775-7191 | phil.sheridan@bio4front.com |
| 12. Topete, Luis | SDSU MESA Schools Program | 619-594-0310 | ltopete@projects.sdsu.edu |
| 13. Villegas, Lizzette | MWH Global, Inc. | 213-316-7008 | Lizzette.A.Villegas@us.mwhglobal.com |

Guests present

| Name | Affiliation | Phone | Email |
|--------------|-----------------------------|--------------|--|
| 1. Moon, Kee | SDSU College of Engineering | 619-594-8660 | kmoon@mail.sdsu.edu |

II. Review & approval of minutes

A motion to approve the August 10, 2011 meeting minutes was made by T. Garcia and seconded by J. Ramos; the minutes were then approved.

III. Focus topic: Development

- A. **NASA’s Summer of Innovation 2-week Aeronautic program** – involved hands-on and computer based learning for 225 Imperial Valley MESA students (6th – 9th graders). It also included a field trip to the Dryden Flight Research Center where students were able to simulate take offs and sit in a 747 cockpit. One of the lead engineers present at the tour turned out to be a MESA alumnus and provided motivation for the students. Although it was a 16 hour day due to travel and location, it was well worth it and the program was so successful that NASA wants to expand it to another MESA center.
- B. **MESA Student Leadership Conference hosted by PG&E** – partnered with MAES to hold a 3-day conference in Oakland on October 6-8th. More than 300 outstanding students developed career strategies through skill-building workshops and interaction with technical professionals. The conference now has other sponsors involved besides PG&E, such as SDG&E, and 4 MESA

students from San Diego City College and Southwestern College were also invited to attend in addition to the San Diego State University (SDSU) students. The Navy hosted a beautiful dinner aboard the USS Hornet. R. Alvarez thanked SDG&E representatives at the Public Utilities Commissioner reception and the SDMA will hold a post-conference lunch to award certificates and express their thanks.

- C. **Engineering Research Center (ERC) for Sensorimotor Neural Engineering** – Dr. Moon used the example of the Six Million Dollar Man and The Bionic Woman as science fiction that is no longer fiction, as we have the technology to do these feats now. With the increasing amount of amputees, prosthetic limbs are seeing more use. However, prosthetic limbs do not have full dexterities and senses. The ERC seeks to build bionics that will be controlled by the brain rather than artificial intelligence. The seed money accounts for \$18.5 million for 5 years and a maximum of \$40 million for 10 years. It is roughly a \$100 million research project that the team will still need to generate the difference through industry support and collaborations. MESA students at SDSU, San Diego City College, and Southwestern College will get to aid faculty with research and conduct community and high school outreach to inform them of the ERC's progress.
- D. **Current NSF STEP grant (SPSD) update** – will end in September 2012. One of the objectives of the grant was to increase MESA student enrollment at each campus by 10%. Thus, at the end of the grant, the programs will not be able to take in incoming students and will have to drop students from the program. At SDSU, this looks to be a drop of 320 students down to 200.
- E. **New NSF STEP grant (SPSD II) update** – Other proposals submitted to the National Science Foundation (NSF) are working with students in the 10's – 50's range. Our proposal, using MESA as its infrastructure, building upon the current grant SPSD, and formally utilizing the full SDMA pipeline (the two MESA Schools Programs (MSP) in San Diego and Imperial Valley), is dealing with 100's – 1,000's of students. It will also implement all five interventions as described in *Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads*, with three already being done under the current grant. The team thanked the IAB for their letters of support and hope that around April 2012 they can report that the proposal was funded.

IV. **Upcoming SDMA events**

- A. **Walk on Water Competition** – will be held on October 22 at the Southwestern College swimming pool. Logistics pertaining to judges were discussed. Industry was encouraged to form a team and compete themselves as well, at \$25/person.
- B. **Shadow Day** – will be held at various participating companies on November 17. There are still around 40 students that are unmatched due to lack of spots from industry.

V. **MESA program key updates**

- A. **San Diego State University MESA Engineering Program/Maximizing Science Potential** – is at their maximum program capacity of 320 students. Next year in Fall this will drop down to 220 if the new grant is not funded.
- B. **San Diego City College MESA** – is at 200 students. The program is entrenching the MESA culture into its students, even as they transfer to the university level.
- C. **Imperial Valley MSP** – works with approximately 700 students. They received \$10,000 from Sempra Energy Utilities to obtain refurbished LEGO robots. Last year students had them play soccer. This year they will use real life examples, such as picking up water and traveling to a nuclear power plant to extinguish flames. They also have to create a PowerPoint presentation based on research on the situation.

D. **San Diego MSP** – is starting to implement robotics as well because of the ERC collaboration. Dr. Westermo of SDSU will be training teachers, advisors, and tutors.

VI. **Other topics**

A. **Company announcements**

▪ **Raytheon** – will be hosting Catapult Into Engineering, a catapult design competition along with hands-on engineering activities and various STEM learning stations, on November 12, from 8:00 – 12:30 pm. Five years ago MathMovesU was created to introduce middle school students to STEM (Science, Technology, Engineering, and Mathematics). Raytheon is working with the San Diego Unified School District to expect approximately 200 8th graders to this first time event. Volunteers of any capacity are encouraged to contact Linda Anthony at lrathony@raytheon.com for help with coaching, traffic, etc.

▪ **SPAWAR** – will hold a Diversity & Inclusion Conference on October 20, from 10:30 – 12:30 pm. A reverse mentoring session with Dr. Fenner will expose 5 MESA students from San Diego City College, Southwestern College, SDSU, and UCSD to SPAWAR professionals.

The IAB shared a moment of silence to express condolences to Ms. Joyce Lloyd, SPAWAR Systems Center recruiter, who passed away two weeks ago.

B. **IAB agenda building** – Dr. Moon proposed that the IAB hold the next meeting at the new SDSU ERC location.

VII. **Adjournment** – The meeting adjourned at 2:55 pm. Minutes submitted by E. Pamintuan on November 7, 2011.

NEXT MEETING:

Wednesday, December 14, 2011
SDSU Engineering Research Center (ERC)
6495 Alvarado Rd., Ste 225
San Diego, CA 92120