About MESA…

The College of the Sequoias MESA Program is the foundation of COS Science, Technology, Engineering and Mathematic (STEM) programs. MESA has played an important role in helping science, math and engineering students transition from high school to college to universities. Our program helps students in personal growth, professional growth and in scholarship. MESA assists students by providing them a Study Center (often a second home for many students), individual and group tutoring, supplemental instruction via Academic Excellence Workshops (AEW), academic advising, internship opportunities, scholarship opportunities, university tours, lab tours and involvement in professional organizations. Belonging to our community of scholars is both intellectually stimulating and socially rewarding.
2014 SACNAS National Conference, Los Angeles Convention Center

Interdisciplinary, Highly Interactive, Transformative

The SACNAS National Conference motivates, inspires and engages participants to achieve their highest goals in pursuing education and careers in STEM fields. Conference programming is specifically tailored to support undergraduate and graduate students, postdoctoral researchers, and career professionals at each transition stage of their career as they move towards positions of science leadership.

Ten COS students were awarded competitive travel scholarships to attend the SACNAS National Conference in Los Angeles, California. These students were joined by six former students who were also in attendance. COS student, Mauricio Gomez, presented on his summer SURGE research project “Desiccation Crack Formation in Sediments”. Three recent-transfer students also presented on their research at this national conference.

Congratulations to the attendees, presenters and awardees.
MESA Student Leadership Conference

The SLC is an annual two-day conference which provides MESA undergraduate students from California the opportunity to develop their leadership and networking skills. These students are from MEP and MCCP programs throughout the state. Students are also exposed to STEM career fields and gain insight on getting into such career paths. This year the MESA Leadership Retreat was held in San Diego from October 31-November 2. A total of 200 California MESA students attended along with over 30 MESA directors. Four COS MESA students who have taken on active roles as leaders in COS clubs and community service attended this conference along with the COS MESA director. The four students are: Cristina Azuara, Mechanical Engineering major; Xavier Castaneda, Mechanical/Automotive Engineering; Perla Plascencia, Bioengineering; and Mauricio Rosales, Civil Engineering. During this conference students attended a series of five workshops focusing on the importance of leadership. Students also participated in mock interviews that were facilitated by industry representatives.

NASA’s Jet Population Laboratory (JPL) Open House

NASA’s Jet Propulsion Laboratory, Pasadena, California invited the public to its annual Open House on October 11-12, 2014. The event, themed “Welcome to Our Universe”, invited visitors to “ride” through the wonders of space. Highlights included a life-size model of Mars Science Laboratory, demonstrations from numerous space missions; JPLs machine shop, where robotic spacecraft parts are built; and the Microdevices Lab, where engineers and scientist use tiny technology to revolutionize space exploration. Fourteen COS STEM majors attended with engineering professor, Dr. Larry Owens and biology professor, Dr. Jesse Wilcoxson.
Pre-health and pre-med students from throughout the nation gathered at this 12th annual UC Davis medical conference. Nearly 8,000 students invaded the UC Davis campus attending many of the 300 workshops offered at this conference. The conference aims to educate, support, and recruit medical students. This two day excursions to UC Davis and the Sacramento area was a great trip. Through generous supporters, this year we were able to take 23 students to the Pre-Med Conference at UC Davis.

Eight students attended the MESA UC Davis STEM day. The students attended workshops that included: admission and applications, transfer student panel, STEM deans’ panel, and finances. After the morning workshops students were broken into groups by disciplines and toured labs where students interacted with graduate students and professors.
Clubs/Organizations/Student Chapters

COS has a Society of Hispanic Professional Engineers (SHPE), a Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) and a American Chemical Society student chapters. The Science, Engineering, Technology Association (SETA) is the largest campus club and offers several leadership and volunteer opportunities. Newer science clubs like BioFORGE (Future of Research in Genetic Engineering) and our Math club link STEM majors with peers within their discipline. These clubs provide valuable information in career paths, research and opportunities within specific disciplines.

**MISSION:**

*SHPE changes lives by empowering the Hispanic community to realize its fullest potential and to impact the world through STEM awareness, access, support and development.*

**SHPE** is the source for quality Hispanic engineers and technical talent, committed to enhancing America’s position in science, technology, engineering and math (STEM) with a strong talented workforce. With more than 300 chapters across the country and 10,000 members, SHPE continues to grow and positively impact the engineering industry, Hispanic community and national landscape. With new ventures into international chapters, the organization will only increase its outreach and effectiveness across the globe. SHPE involves networking professional and student chapters throughout the nation. By being a member of SHPE students gain leadership skills, professional development, and networks. Students also have the opportunity to volunteer to different projects therefore, gaining leadership skills.

**SACNAS is a society of scientists dedicated to fostering the success of Hispanic/Chicano and Native American scientists—from college students to professionals—to attain advanced degrees, careers, and positions of leadership in science.**

Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) helps develop students potential and connects them with many resources and opportunities that will help develop their education and future careers. Our COS SACNAS chapter focuses on internships, research, scholarships and leadership. Volunteer opportunities are also offered to increase student’s community involvement.
SETA is a student club at COS where science, math and engineering majors collaborate. Students receive information about internships, scholarships, transfer requirements, volunteer opportunities, and other pertinent information. During meetings, scientific presentations are given by faculty, by professionals in different STEM fields, or by students.

When: Every other Friday at 12-1 PM
Where: John Muir 101
Who: Math, Science and Engineering Majors

Members participate in:
- University visits
- Community Service
- Science conferences
- Networking with professionals
- Mentoring
- Study Groups
- Leadership and Professional Development

Like SETA on Facebook: https://www.facebook.com/pages/COS-SETA
The American Chemical Society is a group in which chemists as well as chemistry majors can explore the field of chemistry as well as support those fellow students in this difficult field of science.

**BioFORGE: Biology and the Future of Research and Genetic Engineering**

**COLLEGE OF THE SEQUOIAS MATH CLUB**
Volunteer Opportunities

The MESA program, COS science clubs and student professional chapters offer several volunteer/community service opportunities to the students. This gives students a chance to build leadership skills and to be role models for the younger generation of future COS students.

Expanding Your Horizons

Sponsored by the Tulare County Office of Education this one-day event took place on the COS campus. The purpose of the event is to inspire and introduce young girls to STEM careers. During the event, volunteers conducted 30 workshops. COS SETA volunteers ran workshops in rocketry, oil spills, chemistry and helped with other math/science related topics. During the workshops the young girls are provided with information on STEM career paths and are encouraged to engage in the experiments. The volunteers serve as role models and as an inspiration to the young females. Several other SETA volunteers helped BBQ over 700 hot dogs and prepared lunch sacks for the attendees.
Girl Scout Agri-Nation Event

*From Farm to Table: Agriculture Education*

Hosted by the Tulare, Kings, and Kern county Girl Scout troops, Agri-Nation gathers young ladies from across the valley to learn how our food supply comes from the farm to our tables. The event hosts numerous food and food science booths. COS STEM ladies shared their interest in the sciences with the young scouts. There was a lot of laughs, giggles and amazement at the booth.

College Night at Visalia Convention Center

Representatives from over 100 universities and colleges were on-hand to answer questions about entrance requirements, tuition, housing, and more. COS students volunteered to answer questions about COS STEM programs, courses, and clubs.
Research Experience for Undergraduates (REU)

MESA encourages and motivates students to apply for scholarships, internships and professional conferences. REU’s are summer research programs for undergraduates interested in the STEM field. These programs give students an insight to future career opportunities, research, and educational pathways. With research knowledge and experience, students are able to hone in on a career path that is right for them. This past summer, we had four MESA students who were accepted in research programs abroad. COS students Isis Frausto, Edgar Gutierrez, Erica Estrada and Bronte Hernandez earned a good stipend, explored the country, and contributed to science over the summer.

The COS Science Undergraduate Research Group Experience (SURGE) grant brought research opportunities to our campus. 18 COS students work on various short term projects and presented their research at our first STEM poster symposium (bottom right picture). Faculty advised students on many of the projects and a few students partnered with the USDA NCRS and the University of California.

Isis Frausto in her lab over the summer during her internship at NASA’s Jet Propulsion Laboratory.
Academic Excellence Workshops (AEW)

AEW, what is it?
Academic Excellence Workshops (AEW) are designed to supplement the instruction of a particular class. The AEW mission is to enhance the student knowledge of the course, encourage students to work in groups, and increase the student self-confidence.

AEW workshops are offered for most transferable STEM courses. AEW facilitators have completed the course with high achievement and have demonstrated a good understanding of the subject material. These workshops are a great resource if you are struggling in a course or just want to ensure you are mastering the material.

Fall 2014 workshops included:
Math 75, Math 76, Math 77, Math 80, Physics 6, Chemistry 20, Chemistry 1, Chemistry 12 and Anatomy, Microbiology, Human Physiology.
The MESA center is open to all COS students. The center has walk in tutoring for transfer level math and science courses. Students spend hours each day in the study center (a 2nd home to some students). The center is a great place to work in groups or somewhere to crank out those homework sets. The center provides computer access and limited free printing. The walls have plenty of dry erase surface to tackle those tough problems.

Attached to the MESA center there is a “social room.” Students can use the room to socialize, take a rest from the books or have lunch. There is a refrigerator for storing lunches and a microwave.

**Fall 2014 Study Center Hours:**
M-TH: 8am-7pm  F: 8am-4pm  *(hours vary by semester)*

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*Students are utilizing the study center for homework and/or preparing for a big test.*

*Fall 2014 MESA/PASEO staff (tutors/facilitators) along with the MESA director Duane Goodwin.*

*The “Enforcer”*