

MESA Milestones

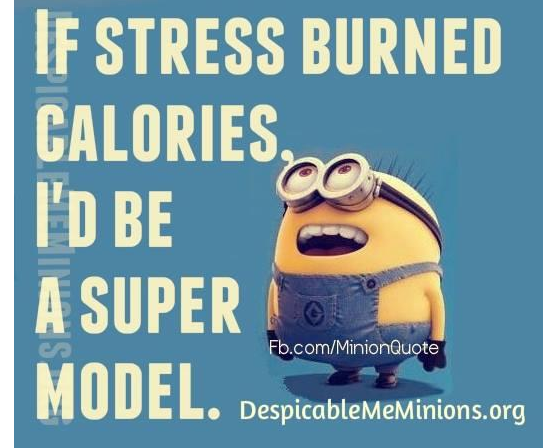
Featuring momentous affairs of the MESA program at Allan Hancock College

Spring 2016

Recognizing and Managing Burnout

by Christine Reed, MESA Counselor/Coordinator

As an academic counselor dedicated to serve STEM and MESA students and one who has the fortune of having her office amongst the walls of where the students study, collaborate, struggle, laugh, and form long-term relationships with their peers, I am also privy to witnessing the stressors and signs of burnout that some of them exhibit. Being a STEM major is tough! It is not an easy road and it demands a student's total focus. Students cannot half commit to school and be a STEM major and succeed. They must be "all in" if they are going to actually learn the material to successfully move on to the next subject in the series. Getting a "C" grade in Calculus 1 sets them up for a greater struggle in Calculus 2, where a "C" grade is going to cause them to struggle even more in Physics, and so on and so on. But many students don't understand this concept until they are well into their STEM studies. They try to do too much on top of their studies such as work, support a family, play with friends, etc. while taking a full load of STEM classes. They don't realize that for each unit of STEM course work, they must dedicate 3



hours of study time. That means for each 5 unit Calculus class, students must be studying 15 hours per week **at a minimum**. Most fulltime STEM students are taking 15 units. That means an additional 45 hours of

Burnout (aka: running out of gas) *noun*

1. the reduction of a fuel or substance to nothing through use or combustion.
2. physical or mental collapse caused by overwork or stress.

study; equating to a 60 hour per week commitment. That exceeds the demands of full-time employment by 20 hours per week! And for most fulltime STEM students this is a pace they will need to set for at least 5 years to complete their Bachelor's degree. They are prime candidates for BURNOUT!

Burnout – Who is At-Risk?

- Those who feel they can do it all and are passionate about what they do
- Those working long hours and carrying heavy workloads
- Those who put enormous pressure on themselves to excel

Burnout is a state of chronic stress that leads to:

- physical and emotional exhaustion
- cynicism and detachment
- feeling of ineffectiveness and lack of accomplishment



It does not happen suddenly. It creeps up over time like a slow leak which makes it hard to recognize. But there are warnings – watch for them!

- Chronic fatigue, insomnia, forgetfulness/impaired concentration and attention
- Physical symptoms – chest pain, heart palpitations, shortness of breath, dizziness, headaches, stomach aches
- Increased illness, loss of appetite, anxiety, depression, anger, loss of enjoyment
- Pessimism, isolation, detachment/disconnected, feelings of apathy and hopelessness, increased irritability
- Lack of productivity and poor performance

Strategies for overcoming burnout include:

- Evaluate how to modify situations to reduce stress
- Say NO to any new commitments
- Delegate, delegate, and delegate again
- Take breaks from big projects
- Control your gadgets
- Socialize
- Lessen the workload
- Reduce the need for perfection
- Seek support



Keep Your Spark and Avoid Burnout – Regular maintenance is really important.

- Stay committed to basic maintenance
 - Sleep 6-8 hours
 - Eat well and regularly
 - Drink H2O
- Just trying harder doesn't work, practice daily relaxation, breath, pay attention to your body
- Saying NO is OK, downsize
- Routinely exercise daily and breath
- Look for the positive, not focus on the negative
- Seek balance in your day and eliminate tasks that do not contribute to your #1 priority, disconnect a bit

Source: www.psychologytoday.com

Engineering Week 2016

by Angelica Enriquez, STEM Counselor

The MESA and STEM Centers were excited to celebrate this year's Engineers Week 2016! We had the pleasure of honoring our very own hard working engineering students, with a week of fun filled activities. Our students were proud to share with their peers and with the staff & faculty of Allan Hancock College, "The best things of being an Engineering Student."

Students shared their thoughts and reflected on their

educational goals of majoring in engineering and had nothing but positive things to say about their field of study. To kick off the week we promoted self-care activities and coping skills. Our students had access to coloring sheets, stress balls and play-dough, to allow them to take break and focus some of their time on de-stressing. During our second event, students were encouraged to introduce a female to engineering by bringing her along to an Ice Cream Social.



made ice cream sundaes and enjoyed their deliciously sweet concoctions during study breaks and in-between classes. A movie night was also part of our week of fun activities.

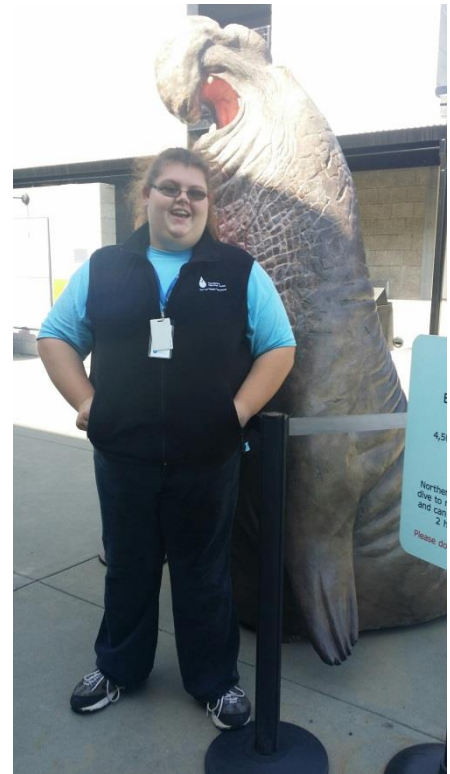
Students joined in the STEM Center to watch *Spare Parts*, a film about four Hispanic students that worked together to build a robot by using old car parts. To conclude the week students gathered at the MESA center for a potluck event where they enjoyed pizza, salads, chips, salsa, and pancakes during the lunch hour. We look forward to making this weeklong event a tradition as we plan to celebrate future Engineering Weeks with our wonderful engineering students for the years to come!

Chasing My Childhood Dream

by Megan Drap, Marine Biology, transferring to Cal Poly SLO fall 2016

My interest in Marine Biology began in the first grade while on a field trip to the Cabrillo High School Aquarium. I was captivated by the gracefulness of the creatures in the tanks, eager to learn everything I could. I wasn't afraid of anything, even kissing a sea cucumber to gain seven years of good luck. I distinctly remember one of the aquarium students informing my class that scientists know more about outer space than they do about our ocean. The student expressed that any one of my classmates could discover a new species and whoever did so would have the opportunity to name it. I wanted that person to be me. I didn't realize it at the time, but that was the deciding moment for me. It was in that moment that I became a Marine Biologist.

I went on to attend Cabrillo High School, where I was a member of the Aquarium Club for four years. Through this club I was able to go on a behind the scenes tour of the Monterey Bay Aquarium, learning how aquariums were maintained as well as all the job opportunities within an aquarium setting. With this experience I learned that there were many different branches of study for me within the umbrella of Marine Biology. In addition to participating in the club, I took the tourism class through which I learned about the creatures within the aquarium as well as how the aquarium worked, how to maintain its biological and mechanical parts, and how to educate the public on various topics in relation to the Aquarium. My senior year I maintained the hard corals and became a Curator of Public Relations. During my time at the aquarium I discovered my passion for maintaining aquariums and working hands on with different species.



With this new found passion, I wanted to find an organization I could volunteer for while attending Allan Hancock College that would broaden my scope of experience. In 2014 I learned about and became a part of The Marine Mammal Center. Over the past 2 years I have gained hands on experience working with five marine mammal species and logged over 225 hours of service. I have participated in workshops which have taught me about marine mammal and sea turtle anatomy, beginning and advanced medical practices for volunteers, and rescue techniques. When community outreach events arise I jump at the chance to work with the general public which has made me more effective at communication. With every experience I find a new passion for Marine Biology. It solidifies in my mind that this is the correct career path for me. I am proud of all that I have accomplished since my revelation in the first grade. I have worked with a large species list, one I intend to expand. I enjoy learning, and I know that I will always be able to do so while studying Marine Biology.

CHECK THIS OUT **Allan Hancock College** **Science & Engineering Club**

The club's primary purpose is to connect with industry professionals and expand students' education. As club members, students promote camaraderie and communication within the science and engineering departments by organizing lectures, peer advising, fundraisers, ASBG participation and field trips.

Interested in participating? Visit the STEM or MESA Center for more information.

Bridges to the Baccalaureate Happenings

by Warren F. Gabaree, Project Director, Bridges to the Baccalaureate

This academic year, the Bridges to the Baccalaureate (BttB) program, a NIH grant award, in addition to sponsoring the ongoing Anatomy lab, which provides opportunities for all anatomy and physiology students to be tutored and have added focused study time, the program has added two new and exciting components to help enhance the Bridges Scholars' experience and to help them prepare for their future success.



The Bridges to the Baccalaureate program has expanded its presence on the campus through its "Start Here...Go Anywhere" Guest Speaker series. Guest speakers from a number of biomedical careers presented the features and benefits of their chosen careers to our scholars helping them learn about the expanded world that awaits them. To date, they have heard from a group of dental professionals, a nutritional scientist, a microbiologist, and most recently, a physician's assistant and certified registered nurse anesthetist. Guest speaker presentations are open to all students.

The other exciting component added this year is the leadership development series that is designed to prepare the Bridges' Scholars to be the biomedical and behavioral scientist leaders of tomorrow.

This semester, the Bridges' Scholars will also be learning about the various summer research internships they will be offered by participating Cal Poly professors. This is always an exciting time. In preparation for their summer research internships they will be attending the annual ethics seminar, which is open to all students as well. They will also be attending the annual Research Boot Camp prior to the start of their summer internships.

Speaking of the summer research internship program, one of our BttB success stories is Monique Rosas. As a result of Monique's CalPoly summer research internship, she was invited by her Cal Poly professor mentor to participate in "The Society for Integrative and Comparative Biology" conference. Monique found herself the focus of attention as she discussed her research with interested graduate students and research professors!!

For more information about Bridges to the Baccalaureate, please visit their website <http://www.hancockcollege.edu/bridges/index.php>



"Most people say that it is the intellect which makes a great scientist. They are wrong; it is character."

Albert Einstein

It's Been a Journey

by Moisses Rodriguez-Hernandez, Biochemistry, transferring to Cal Poly SLO fall 2016

I have been attending AHC for three and a half years. Majoring in Bio-Chemistry can open a vast majority of options to many successful careers in life. Reaching for a Bachelor's degree or even a doctorate can unlock an unlimited amount of roads to many different jobs. In life it's never certain what the first career could be.

Throughout my life I have been going to public schools in Santa Maria. I started to finally decide on what I wished to become as a professional career in my third year in high school. Since my early days in elementary school I have had to rely on the help of glasses and hard contact lenses. My eyes did not have twenty-twenty vision from the start. My doctors would tell me that my corneas were weak and that I would probably need contacts or glasses for the rest of my life.

There was little possibility of having surgery on my eyes because of the fact that my cornea was already weak. What I wish to do is to help patients who have similar situations as my own and to help them regain their vision just as my doctors have helped me. I am inspired to discover new methods of helping patients recover their vision through hard work and research. If there are better and safer possibilities of performing eye surgery then I want to be there to help discover and introduce it to the Optometry field.



After hard working years in high school I prepared myself to enter college where my road in Bio-Chemistry would continue to unfold. I am a first generation college student. My parents had little or no experience in college. Both of my parents grew up in poor families in Mexico and they both came into the US in the search of a better life. My father at a young age crossed the border, where he faced many hardships, to search for a new opportunity and life. My mother came into the US as a student where she took few classes in the US and soon learned English. I've always had my parents support in my studies. There were some points where everything seemed so big and it was hard to imagine how I would



be able to get through different obstacles. Some semesters were harder than others and I grew desperate thinking it would take me a lifetime to learn so much in the many science classes I had taken. The stress at some points was indescribable and would make me grow tired much faster. It was not easy to study for tests. I soon learned about MESA and the benefits it had to being a member. I applied and was accepted into MESA where they have helped me with book loans, tutors, and access to school computers in my years at Allan Hancock. With all my science classes that I have taken at AHC I have always done my work at MESA. I'm able to concentrate and give my best work in an area where many students are focused on their work. Although not all classes were easy to start off with, I wouldn't be so easily beaten and until the last day of the final every day I would study for hours. On various accounts these countless hours of studying really helped me learn the information not just memorize the subject. It's important to learn the material and understand what is going on. Thanks to MESA I was able to learn about SESMC, a scholarship and organization that assists students in discovering more about their majors. SESMC provides students with faculty that are closely related to the student major in order to help give advice and recommendations on their career path. In time I joined student study groups, which helped me progress even further into my classes. I've been able to overcome the challenges of heavy classes and I'm ready to face many new challenges ahead.

Panthertronics Present to AHC Science and Engineering Club

by Adam Johnson, STEM student and Panthertronics Mentor

FIRST Robotics is an international organization whose mission is to inspire the K-12 youth to be leaders in STEM related fields. They achieve this goal through the use of four programs aimed to encourage innovation, self-confidence, communication, and leadership: FIRST Lego League (FLL) Jr., FLL, FIRST Tech Challenge (FTC), and FIRST Robotics Competition (FRC). Each FLL team has up to ten elementary age students, and the program includes three parts: Core Values, a Lego robot, and a real-world, problem solving project. Nearly every elementary school in the district has an FLL team, and this semester, a team from Patterson Road Elementary school gave a presentation to Hancock's Science and Engineering Club. The team is named "Panthertronics", and they showed us their idea for the *Panther 09* satellite that they believe can be used to clean up and filter space debris. Their team is competing for the \$20,000 Global Innovation Design Award, and is looking to enlist Hancock and Cal Poly students to help with their project.



Some of the students on the team include the son of Scott McLean, an engineering professional who gave a presentation at last semester's Professional Development Luncheon, as well as the son of the President of Hancock College, Kevin G. Walthers, Ph.D. In fact, some of the students in the Science and Engineering club that the Panthertronics presented to are alumni of the FIRST FRC program, including Nick Kremer and Adam Johnson, who are also mentors for Orcutt Academy's FIRST FRC team, Spartatroniks.

The lessons that the K-12 students in FIRST Robotics programs receive are life-changing and give the students experiences that can branch off into many different career paths, from aerospace engineering to business careers. Programs organizations like FIRST Robotics open up a plethora of opportunities for young students, and show them careers they never thought they could explore.

Latest MESA SLO Data

93% of MESA students, by the end of their final year at AHC, can identify a long-term support system including faculty, on-campus resources, professional organizations, and potential employers.

92% of MESA students who participate in supplemental academic support services such as tutoring demonstrate a command of collaborative work skills in their chosen field of study and exhibit the appropriate study skills to master the material.

100% of MESA students, by the end of spring term of their final year at AHC, demonstrate that they have developed the confidence required to successfully navigate the academic process at their accepted transfer institution.

Tips for Engineering Students (and others could benefit too)

by Dom Dal Bello, Engineering Professor & Interim Academic Dean

Start Homework when the Topic is Covered in Class

It seems some students wait to start their homework a day or so before it is due. You really should be starting problems as soon as the material is covered in class so that the topic is fresh in your mind. While you may be given a week or so to finish up the homework, during that week, typically new material is being covered.

You should also be reading the book ahead of time. If the first time you see the material is in lecture, how can you really absorb it sufficiently?

Transfer Acceptances

Many of you are getting news that you have been accepted to Cal Poly and other universities. This is great news and you should be congratulated. But you do not want to fall into the trap of slacking-off on your AHC work (as others have done in the past). Spring semester is not “an end,” but another step along the way.

Your acceptances are all “conditional” ... you must pass your classes. Finish strong!

Start to Build Your Library

While the MESA lending library is helpful, and there are books at the library and STEM Center to access, you should start to build your own library of engineering books (even in this electronic age).

You should get copies (even older editions) of your fundamental textbooks.

For those who have SESMC Scholarships, or scholarships in general: one of the purposes of a scholarship is to allow you to get the tools (textbooks, school materials, computers, etc.) that you need to be successful as a student. Such will last you into the future.

For those borrowing MESA books, at the end of the semester, look to buy older (cheaper) versions of the textbook of your key engineering classes. This material will be with you for years to come. If you do not build a library of texts of your major courses, you are basically treating these classes as an elective to be forgotten, rather than the foundation of a career.

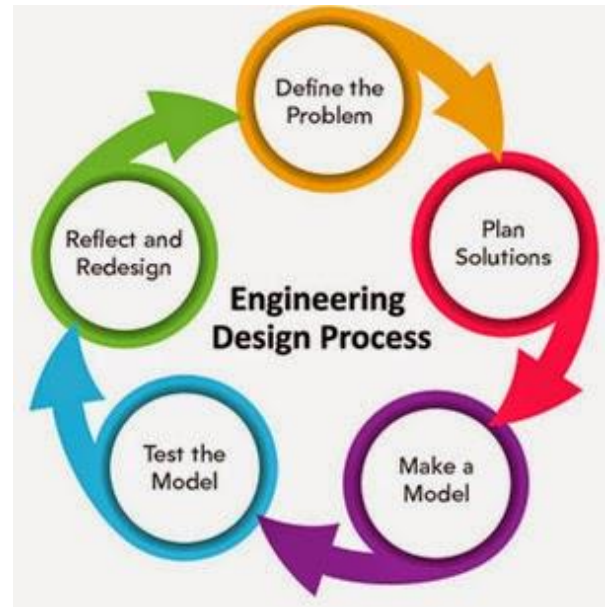


Words of Wisdom from Alum

by Miriam Hickman, Actuary Science, transfer student to UCSB fall 2014

As a non-traditional student, leaving the comfort of a full-time job with many perks and a secure paycheck to become a full-time student with no income and many new expenses was more criticized than I had ever imagined. Even some of my friends –to this day- cannot understand the logic behind this decision. To me, it was very simple, I was just eager to continue learning.

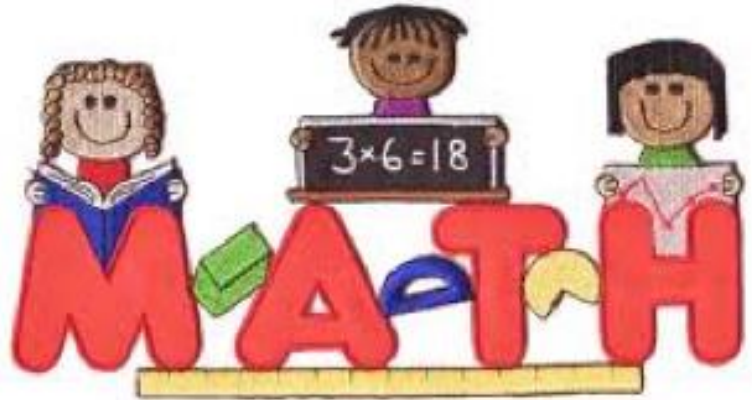
Do not misunderstand me. There is nothing wrong with choosing any lifestyle. We are free to make our own choices and it makes me happy to see people I care about doing what they love (or don't) for their families. It makes them whole. In my case, maybe it is because it was an unfinished project - and becoming an adult has made



me accountable for my actions - not finishing my Bachelor's degree when I had the chance, had been weighing heavily on myself for some time, so it became clear that it was a project that needed to be completed.

Little did I know it would take as long as it did. I took my first class at Allan Hancock College the fall of 2009, after attending a student transfer presentation by Christine Reed (who at the time was working at the University Transfer Center). Patiently, she heard my case and helped me build a SEP (Student Education Plan) for my Business degree that accommodated my full-time job in the schedule. I graduated the spring of 2014 with an Associate's degree in Mathematics and Science and transferred that fall to UCSB as a junior in the Actuarial Science major. I will be graduating from UCSB this June.

My career path changed when I took my first Math and Computer Science classes at AHC, I was impressed about how these subjects translated into any language with the same meaning. When asked why I like math, I always say: "I have no accent in Math. It is a universal language". Of course, having fabulous professors helped tremendously. They were always open to answer questions, understanding that we all learn in different ways, dedicated professionals that made me admire them more and more every day. If I ever get the chance to teach, I know I have a lot to give back to others for the time they have invested in me.



Transferring to the quarter system was a big change and a challenge greater than I had expected. But how else are we supposed to learn new things, and appreciate what we have if we do not step out of our comfort zone? It is never too late, and even though I am surrounded by classmates and friends that are younger than me by many years, it makes me happy to be here today; this was my time to be here.

I have been blessed with a husband, parents, professors and academic advisors that have helped and encouraged me along the way. And even though, I have chosen a career where I will have to continue taking exams until I get my Fellowship in the Society of Actuaries (which means I will be studying for a long, long time), I know these people are the reason I am about to finish this project (my Bachelor's degree) that started many years ago.

If you want some advice from someone who has been where you are now, I would suggest the following without any specific order:

- Talk to your professors, make them know you are truly interested in the subject and you are willing to put the effort in return for their time. Be honest.
- If you have questions, ask. Someone else is probably wondering about the same thing.
- Take a public speaking or theater class if your schedule allows you to. It will be important to have a good set of soft skills, especially when interviewing for jobs or internships in the STEM fields.
- Get involved in working with others (volunteering, science fair projects, etc.). The team player question is almost certain in most interviews.
- Do not be afraid to explore your career options. There are more opportunities opening as technology continues to advance.
- Finally, have fun and enjoy your time here. Remember that this is a part of your life that is shaping your future; and the people around you are individuals that are just as motivated and interested in growing professionally as you are. Do not take that for granted.

If you have any questions about being an Actuarial Science student, please feel free to send me an email and I will be glad to send you some links to learn more about it or to answer any specific questions. miriamhickman@yahoo.com

Being a Marine and Helping the World

by Kevin Hurtado, Mechanical Engineering, transferring to Cal Poly SLO fall 2016

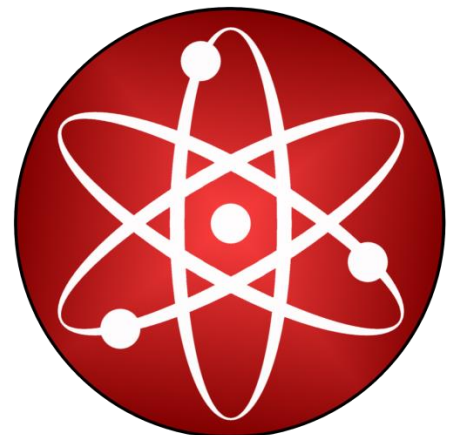
As a United States Marine, not only was my physical endurance strengthened but my mental endurance grew greatly. The Marine Corps honed my discipline to make me react better to stressful situations by challenged my problem solving skills. From the very beginning of my military career I learned to work with my team to ensure our mission was accomplished and keep ourselves safe. As I progressed, trained, deployed to Afghanistan, and was promoted to Corporal, I became more of a leader and less of a follower. No longer was I seeking success only for myself, I began to push my team to achieve greater success. Not only did I teach the Marines under me what was taught to me but I taught them to succeed and surpass my accomplishments.



During my deployments in Afghanistan I also had an opportunity to interact with the locals and experience the culture of a different part of the world first hand. The complete immersion into day to day Afghani life opened my mind to the different ways that many people spend their time. I watched children walk down to a canal with a wheelbarrow full of plastic jugs to fill with canal water for drinking as well as observed multiple farms sharing the same tractor. Seeing the disconnection from technology living in such a harsh environment such as Afghanistan made me realize that being all I could be in the Marines was not enough to help the world; I needed to do more. Becoming an engineer was not my first idea on how I would be able to help the world but after deliberation became the best option on how I would be able to influence society best. By working with technology and helping to engineer a better future not only for ourselves today or tomorrow but the future of mankind.

The **Mathematics, Engineering, Science Achievement (MESA) Program** is an academic program that provides a wide range of support services and activities aimed at fostering student achievement and increasing the success and participation they experience while pursuing a degree in mathematics, engineering, computer science, biology, architecture, kinesiology, or other science-based programs. MESA enables students to prepare for and graduate from a four-year university with a math-based degree. It also seeks to increase the diverse pool of transfer-ready community college students who are prepared to excel as math, engineering and science majors. Through the program, students develop academic and leadership skills, increase educational performance, and gain confidence in their abilities to compete academically and professionally.

Visit our website at www.hancockcollege.edu; click on MESA under Quick Links



Spring 2016 STEM/MESA/Bridges Activities

- Feb.3 Pipelines Internship Application Workshop (1:00pm-2:00pm; W-31)
- Feb.5 Interview Skills (12:45pm-1:45pm; W-31)
- Feb.5 FAFSA Workshop (2:00pm-3:00pm; W-23)
- Feb.10 Ross University School of Medicine (12:30pm-2:00pm; W31)
- Feb. 19 Mock Interviews (1:00pm-2:30pm; G106) Sign ups at STEM center
- March 4 Recognizing and Managing Burnout (10:00am-11:00am; W-23)
- March 4 BTTB Exploring Biomedical & Behavioral Science Careers: Nurse Practitioner (1:00pm-2:00pm)
- March 9 Spring Career Fair A time for AHC students to expand their network, polish their interview skills and gather local industry information! (10:00am–1:00pm Santa Maria Student Center; Check in 9:30am)
- March 13 STEM Girls Conference For Volunteer opportunities contact, stem@hancockcollege.edu
- March 23-24 Campus Exploration Fieldtrip: Bay Area Field Trip Contact MESA ext 3446 for sign ups.
- April 22 You're Outta Here Workshop* (9:45am-10:45am; W-23)
- April 22 BTTB Exploring Biomedical & Behavioral Science Careers: Biomedical Engineering (1:00pm-2:00pm)
- April 27 You're Outta Here Workshop* (5:30pm-6:30pm; W-31)
- April 29 BTTB Ethics Seminar (1:00pm-3:00pm; G-106A)
- May 6 Friday Night Science: Free & open to the community. More information? Contact Siboney Guardado ext. 3930.
- May 13 STEM/MESA Student Recognition Reception. Come celebrate your AHC STEM/MESA transfer students.
For tickets or more information contact Dorine Mathieu ext. 3446
- June Industry tour in collaboration with Cal Poly SLO

*For students who are planning on transferring Fall 2016 & want to know all of the next steps to successfully transition from AHC to the four-year university, don't miss this workshop! Mandatory attendance of **one** session for MESA and STP Fall 2016 transfer students.

