Allan Hancock College STEM/MESA Programs Deliver ... Open House!

by Christine Reed, MESA Counselor/Coordinator

Often times I have the pleasure of speaking to parents in our community who are exploring the option of enrolling their graduating senior at Allan Hancock College instead of sending them off to university as a freshman. I am always so proud to share with them our success rates and how much support we are able to provide our students campus wide. Sometimes the challenge is not convincing them that AHC is an awesome option, its convincing their child. Last February while speaking with one of these parents, she asked me if we have a preview day or open house night featuring our STEM programs. Unfortunately, I had to tell her that we did not. That got our STEM/MESA team thinking: Why not? On April 16, 2014, we delivered. STEM Open House was born and the community responded. From 5:30 to 8 p.m. we fed our interested families, got to know them, shared information about our programs and services, and encouraged them to Start Here in STEM! One hundred and six (106) people attended and of the high school seniors in attendance 100 percent enrolled at AHC in fall 2014. The mother that suggested the event attended and raved about its success. On my way home from Sacramento in September (a few weeks ago) I sat next to a gentleman on the plane who is a “higher up” at PG&E. He recognized me from our Open House event and said how happy he and his wife were for the event and the STEM Programs at AHC. Because of these efforts, his son is a very happy STEM student at AHC this fall.
My name is Scott Forbes. I currently attend Cal Poly, SLO, after transferring from Allan Hancock College in fall 2014. I was born in Santa Barbara and raised in Goleta. My parents divorced when I was seven, and both worked hard to support my brother and me. With both parents working, my brother and I had to take care of ourselves most of the time. In high school I found that I liked working on all things mechanical and electrical. I had a friend who had a bunch of old electronics equipment that we could mess around with. I still remember when we tried to fix an oscilloscope and ended up blowing it up. After graduating high school I enlisted in the Air Force. I worked on F-15E avionics. The E-model F-15s were new to the Air Force and my base had the first three active squadrons. I was stationed in North Carolina most of my time in the military. When I got out of the military for medical reasons I stayed in North Carolina for three more years. I worked as a copier and office machine repairman during this time. It was fun driving around the county, fixing copiers and typewriters (yes I said typewriters, they were still used back then). I moved back to California when I was 24 and worked as an assembler and test tech for a company that made pumps and cooling systems for the military and aero-space industries. My favorite project was being the lead tech for the cooling system for the cruise stage for Mars Pathfinder. I spent a year and a half going back and forth to JPL to perform testing on the system before it was sent to Mars. This project got me involved with the other two Mars lander programs. After working on space craft I went into semiconductor capital equipment. First working on physical vapor deposition (PVD) machines as an electro-mechanical technician, building and testing the PVD systems. I was even able to design a wafer lift system, but it did not work as well as we had hoped so it ended up under my desk for the rest of my time there. I then moved to a company that made atomic force microscopes. This was a great place to work. I was the lead assembler for the automated systems department. I eventually was asked to move up to engineering. I had built a lot of prototype systems for them and they wanted me to build more. I was also given tasks to design boxes for electronics. I was able to travel all over the world fixing and updating systems at customer sites. I had a great time. During this time I was promoted to an engineering position. I finally got to do what I really wanted to do which was to design things. I became an engineer and a project manager!! I was the project manager on a project to convert our system for use in the photo lithography side of semiconductor. Photo lithography is basically making a mask to cover what you don’t want removed from a thin film of material to make a computer chip. I was very successful with that project. I was able to do engineering and project management for several years before I was laid off. I moved on to a company that made guitar pickups and effects pedals as a mechanical engineer. I met a few

Academic Time Saving Tips

- Have a plan for your study sessions including time limits
- Pay attention to what gets you off track
- Turn off your phone and other disruptions
- Work off-line when appropriate and avoid the temptations of checking your social networking accounts and email during study time
- Organize your workspace before beginning studying
- Be clear about assigned tasks when working in a group setting
- Learn to say NO
- FOCUS – avoid multi-tasking
- Do not allow yourself to procrastinate
- Slow down!
- Manage your life (time, energy, attention, attitude, and behavior)
rock stars and did the mechanical design for the pickup and pedals. Yet another lay off happened and I was out of work again. At this time I started talking to the Veterans Administration about going back to school. While I was waiting, I was rehired by the pickup and pedal company part time. I live in Lompoc so Hancock was the best choice, as it was close to my house. I started working only on Fridays and going to school Monday through Thursday. I was glad I chose Hancock because I was able to get most of my lower division done before transferring. I found my home on campus in MESA. I made great friends and got a lot of help to get through classes. My experience at Hancock was very rewarding and will help me in the future no matter what happens. I have transferred to Cal Poly, SLO. It is shocking at how fast things go with the quarter system. Next week (week 5) we will be half way through and starting midterms. I am struggling but am keeping my head above water. My wife has been very supportive even though we now live in different cities. We also want kids but have put off having them for a while. I don’t get to live the way I used to and or how I want to right now but I know after I finish school I will be able to do things I never thought I could. Getting my degree will open up many doors and help me provide a better life for my family.

**Top 10 Highest Paying College Majors**

*(Notice how many are STEM?)*

- Petroleum Engineering: $89,000
- Computer Science: $53,800
- Nursing: $53,300
- Applied Mathematics: $52,200
- Physics: $50,800
- Management Information Systems (MIS): $49,600
- Construction Management: $49,200
- Computer Information Systems: $49,000
- Mathematics & Statistics: $48,900
- Computer Programming: $48,000

*Source: Carly Stockwell, College Facutal, July 30, 2014. USA Today.*

**Determined and Working Hard**

*by Susana Sanchez, MESA Student, Mathematics*

I am 18 years old and I am attending my second year at Allan Hancock College. I was born on October 22 in Torrance and raised in Harbor City, California (approximately 175 miles away from Santa Maria). I did not live in the safest of neighborhood, so the summer before my senior year my parents decided to make drastic changes. They, along with my two younger sisters, moved to Santa Maria in search of a better community. I stayed behind to finish my last year at Port of Los Angles High School, a fairly new charter school in San Pedro. At POLAHS I was given the opportunity to work as an intern with Vopak and also received a private scholarship that has carried me and continues to financially carry me through AHC.

I am a math major hoping to pursue a career in teaching. I am currently taking 17 units and work approximately 30 hours per week as an instructional aide in a kindergarten class at Sanchez Elementary School and as a tutor in both the MESA and Math centers. It was through my work experiences at Sanchez Elementary that I realized I wanted to teach. I have a very loving family that supported my decision in choosing the education field as a career. They have supported me throughout my educational career thus far and I know will continue to support me and help me in the best way that they can. Often times I am overwhelmed with the amount of homework, studying, and work that needs to be completed, but the sleepless nights and long days will pay off in the future. With determination and support from my family I can achieve my goals.
Some thoughts on Obstacles, Following Instructions, Test-Taking, and Resources

by Dominic J. Dal Bello, Professor, Engineering and Chair, Mathematical Sciences

OBSTACLES

Many students put obstacles in their paths, whether they realize it or not. As engineering students, you are likely taking a full load of courses. You should schedule an appropriate amount of time for studying outside of class. AHC’s catalog says students should study at least two hours outside of class for every one hour in class. STEM students should study closer to three hours to one class hour. Better it should be... “Study until you understand it.” Also, do not exceed the “60-hour Rule;” Class time + study time (3:1) + work hours should not exceed 60 hours total.

Perhaps more importantly than “number of hours,” is the fact that you are taking courses that are foundational to your career. If you cannot put sufficient effort into them, you will not be successful in the next courses (let alone the current course). Sophomore level engineering courses are not electives. They will greatly affect your success in the next classes.

I have learned that some of you are spending one to four hours per week studying for my engineering course. These values are unacceptable. If I am spending more time than you trying to get your to learn the material, something is wrong.

Practice, work with others, go to review sessions and study groups, talk to the tutors, and come to office hours.

A couple of “obstacles” that a few of you put in your path are:

- not reading/following instructions
- not having good test-taking strategies
- not using resources

FOLLOW INSTRUCTIONS

This is the first rule to follow for any employee or member of a group. If you cannot follow instructions, how can you fill out an application?

Applications that are filled out incorrectly are discarded (if your Cal Poly Application has even a small error, it can jeopardize your ability to be accepted).

Some of you do not do what is asked, or you do exactly the opposite of what is asked. What am I supposed to write on letters of recommendation? “Johnny is a good student but does the opposite of what he is asked to do”?

Read the distributed information and comprehend it – whether that is the syllabus [the rules of the class], the Lab Manual, handouts, exam instructions and problems statements.

TEST-TAKING

- Follow instructions
- Do problems you know how to do (“easy” problems first)
- Check your work
- It is better to do three problems very well + one badly, than four problems not so well
RESOURCES

As engineering students at AHC, you have more resources today than ever before, and more than most community colleges have.

- STEM tutoring with Cal Poly students. The STEM Center just started up a couple of years ago; not many schools have a STEM Center, let alone tutors who have taken the classes before.
- MESA Organized Study Groups/Review Sessions have been around for many years, and provide you with scheduled opportunities to study. You should either attend them, or set aside scheduled times each week for studying. Planning your study time helps keep you on track.
- STEM/MESA Staff... the STEM counselors and the programs (e.g., STEM Transfer Program) are excellent. Other schools seek out our counselors for advice on transfer (one engineering professor at a community college brought four students to AHC to get their SEP done).

Resources that many community colleges have, but students do not utilize as much as they could:

- Other engineering students ... create study groups that meet consistently. Smart students work in groups to grow academically and for mutual support.
- I have five hours of office hours per week. I am usually on campus 50+ hours per week, so if you cannot make office hours, you could likely make an appointment.

Do not take our resources for granted.

Math and Science...Naturally

by Alex Carrasquillo, MESA Student, Electrical Engineering

Everyone has their share of “natural talents.” That is, subjects they can approach with more ease than others, whether it is computer architecture, drawing, writing, or crafting, etc. My strength began in the mathematics field and branched into the scientific realm, particularly in the fields of chemistry and physics, during my adolescence. So there’s my academic life in a nutshell, but let me share a little more about myself from the very beginning.

My name is Alex Carrasquillo, and I was born in Garden Grove, California. Really, I would have been born in Buena Park had the nearest hospital not been one city over. I started preschool in the city of La Habra, at Small World, Kid’s World, (no longer existent), and had a sweet life there through kindergarten, playing handball outside, Dig Dug inside, and having wonderful nap times. After surviving such hard times, the serious work began at the arrival of elementary school at Walter Knott, Buena Park. It was here that my parents discovered I had terrible comprehension skills, and thus decided to buy a set of books to hopefully boost my abilities. Horrifically, I was forced to do this extra homework 45 minutes a day, alongside another 45 minutes of martial arts (my father was a martial arts instructor). Of course, I hated every minute of it. Who wouldn’t? But it did get the job done, and I’m certainly glad today that I was made to suffer through it.
In the eighth grade (now in Bakersfield), I was allowed to help my dad teach martial arts in a studio he had recently opened. This was a time when I actually enjoyed the theory and practice of martial arts, which was certainly a plus because those days involved long hours. I would go to school until three in the afternoon, then head straight to the studio. Over there, I would get the majority of my homework done, then practice and teach until seven or eight in the evening. After that, I would finish any remaining homework, then crash out and do it again the following day. Now I did have a little gaming set up in a small office in the back of the studio, so I did get a little break time. But the majority of my day was spent between academics and teaching. This was, in my opinion, one of the biggest infrastructures for my academic development and leadership skills. I was fairly well focused because there were so few distractions since I wasn’t home too much. I remained in Bakersfield until the end of my sophomore year of high school, upon which my grades were kept high and I received my first degree black belt (of which there are ten) in September of 2008.

My remaining years have been spent here in Santa Maria. I attended Ernest Righetti High School during my junior and senior years. It was here that I took a love for chemistry and physics, and realized I am a huge nerd. John Rucker and Colin Rodriguez, my chemistry (and advanced chemistry), and physics teachers, respectively, did a fantastic job of well, doing their jobs. But they were also incredible mentors. I spent countless hours between these two subjects, including several lunch hours at school (I swear I had friends! I’m just also a huge nerd). Ultimately, I decided to attend Allan Hancock College as a chemistry major, and eventually switched to electrical engineering. I chose a community college primarily because I was saving money without jeopardizing what I learn. Learning about differential equations here is no different than learning about differential equations at Cal Poly, San Luis Obispo. Educational material does not magically change based on region, only teaching style, and I’ve had some excellent instructors at Hancock.

So here I am, getting ready to transition from AHC to a university. As part of the MESA program here at Hancock, I have tutored for two years now, which is not only beneficial to others, but does wonders in helping me remember what I’ve learned throughout the years. I have taken several science courses, covering all the physics (except astronomy), general chemistry (and some organic chemistry), all engineering courses (except Strength of Materials), as well as a few computer science courses. I have decided to apply primarily to Cal Poly, SLO, with a major in electrical engineering and minor in computer science. I look forward to my journey there, and where it takes me.

Upon closing, let me say that people should not be discouraged by failure and struggle. In contrast, it is what should drive one on. As stated before, I had a very difficult time with comprehension skills at one time. The answer was not to steer away from it, but to work at it a little more and more each time. Struggle does not mark a lack of intelligence, but rather a high capacity to become more knowledgeable. So don’t be afraid if things seem difficult, but embrace an incredible challenge instead. You never know how far it will take you.
We are so excited to report that we launched our first STEM Week of Welcome this fall! The STEM Week of Discovery (as it was named) is a four day event that acquaints incoming freshman STEM students to Allan Hancock College (AHC). Students were introduced to campus resources, STEM faculty and staff and exposed to a variety of STEM majors. The key to a successful event was that the thirty students who participated were introduced to each other, creating an instant peer network of support and comradery.

Day one of the STEM week included a parent orientation. The evening event introduced parents to a variety of resources offered at AHC. An important component of this orientation was to help parents understand the transition from high school to college; this was extremely vital considering the majority of the students will still continue to live at home. Other topics included financial aid, STEM specific resources and an overview of the week ahead for their child. The following three days of the Week of Discovery were focused on the students.

Over the course of the week, the 30 new students took tours of the campus and labs, listened to faculty presentations from biology, computer science, engineering, physics and mathematics. They learned about campus resources and took part in a variety of hands-on activities related to STEM. The final day of Week of Discovery consisted of a day trip to Diablo Canyon and a tour of the Avila Beach Lighthouse. At the end of the week, each student who participated in all three days received a $200 book voucher to the Allan Hancock College bookstore. While this was a huge incentive to attend the STEM Week of Discovery, we were pleased to hear this wasn’t the only reason students returned each day. One Week of Discovery participant wrote the following in an evaluation “Very, very, VERY helpful, who could complain? The $200 book voucher made me interested, but I kept coming back for the useful presentations and great information.” We had overwhelmingly positive feedback from all participants. Another student wrote that the STEM week was “very informative and educational! STEM week was a blast and I’m glad I went! I feel a lot more comfortable with the campus now. And also have a group of people with similar majors that I’m comfortable with! Thanks for having me!”

A direct result of our first STEM Week of Discovery, is an increased use of our STEM Center. Our new students have expressed an increased level of comfort with the campus and the STEM Center because of their participation in STEM Week of Discovery. “It was really helpful and I feel more prepared going to start next week,” said another participant. With such a successful turnout and outcome, the STEM team is already working hard to raise the funds needed to execute next year’s STEM Week of Discovery. Next year’s goal is to expand the program to 50 incoming STEM students. A week of exploring, learning and having fun has proven to be the best introduction of STEM students to Allan Hancock College!
My Perspective Always Developing; One Bite at a Time
by Jenny Chiao, MESA Student, Chemical Engineering

I try to notice and be grateful as much as I can of the good things going on around me. My dad has what many people consider a life of bad luck and tragedy. But he has never let his limitations keep him from enjoying life and being a good person. To this day, I try to be strong with a humorous outlook just like him.

I am originally from the Los Angeles area, and the first time I’ve ever lived in another house is when I moved to Orcutt without my family. To be honest, I thought I knew everything there was to be known as an adult. But I’ve since learned so much about independence, growing, responsibilities, who is important to me, acceptance, and the fact that money will only ever have monetary value. Even now, I am both humbled and amazed at how much more there is in the world to continue learning about.

Overall I’ve almost always been open-minded and eager to learn in school, especially in science or math. I love it even more now, because I add the things I learn to my perspectives of just about everything in life. In public speaking class, I learned that I am most comfortable speaking with humor and that sometimes people just need a good laugh. Cultural anthropology has completely changed the way I view differences among people in such a positive way. In chemistry, when we are doing multi-step calculations, my teacher often says that an elephant gets eaten one bite at a time; something I often forget in areas of my life besides finding empirical formulas. These principles in all of my classes are simple, but important concepts that I am often reminded of as I continue through my education. Since I constantly struggle to balance myself with college, these ideas that I apply to the bigger picture of my life remind me of what really is most important to me. The more perspectives I have, the more grateful I am.

Many experiences I go through also add to my list of things to feel great about and I always try to see the good side of an event. I first came to AHC with the idea that I was going to study interior design. As soon as I took one class, I knew that I did not like it and I didn’t really have a specific backup. Fortunately, I was taking college algebra at the same time and I found that it renewed my interest in subjects involving logical thinking. This was a very vague direction, but a direction nevertheless. The more STEM related classes I took, the more clear my goal appeared.

Just last summer I went to my first internship at UCSB and I feel that I came back a different person. Though it was only a week long, I don’t think I have ever experienced so much at once! I really don’t think I knew what I was getting into or fully understood what they meant by “an intense week-long program.” But by the end of the week, all of the interns came out feeling like champions. It wasn’t until then that I really understood the importance of being able to work with other people. We may have had our differences at first, and we may not have always gotten along, but it was having the group itself that kept us going. The end goal in getting through the week eventually became our only commonality; the only thing that mattered. It was exactly what brought us together.

After conquering the internship, I felt confident of my abilities for the future. I decided to change my major from environmental engineering, to chemical engineering. This change stems from gaining insight from my mentor at UCSB, meeting people from various industry companies, and taking industry tours. Being around other students of like mind and struggles has also influenced me to be more social in MESA as well. Even though I am more sure of the direction I am going now, doubt is never far from my mind. So having a support group just as I had in the internship makes an incredibly positive difference for my motivation. Plus, it feels awesome to be able to help others out, too.

Each semester is getting more difficult because of the type of classes I must take. But I am learning more to try and enjoy myself along the way so I don’t burn out. I try to keep in mind that I have wonderful friends and family. I know that I’m hopelessly in love right now and I feel more at home in Orcutt than I ever did in LA. I know that no matter if I change my major again or if I take a little longer to graduate, everything will be all right. I just have to remind myself to eat one bite at a time.
Hancock Ended Up to Be the Right Choice for Me
by Michael Campos, MESA Student, Electrical Engineering

My name is Michael Campos. I was born and raised in Santa Maria. I am the youngest of four brothers. I came to Allan Hancock College because I wasn’t sure if I wanted to go to a four-year university right away. I was accepted into two universities straight from high school but I wasn’t convinced that those schools were for me. I knew it would cost a lot of money and I didn’t have anyone in my family to tell me how things would be while living at a university. So I was kind of confused on what to do. Fortunately, I had a friend who was attending Hancock and told me that I could receive the same lower division education at Hancock than at any university. He also told me about the MESA program because I told him that I wanted to study electrical engineering. He told me how MESA helps STEM students with tutoring, book loans and in other ways. I also wasn’t completely ready to leave home so I decided to stay and study at AHC. It’s been a great experience so far. I’ve saved a lot of money and learned so much. This is my 3rd year and I will apply to Cal Poly SLO this month. I am doing pretty well so far in all of my classes. I have a decent GPA and my study habits have improved so much since high school. I’ve finished most of the classes required to transfer to Cal Poly for Civil Engineering. The time I’ve spent at Hancock hasn’t been easy or relaxed. I’ve had to sacrifice a lot of time to study and do homework. There are some classes that require you to put in a lot of effort in order to simply pass the class with a C. There are times when my family gets together to hang out but I tell them that I can’t go because I have to stay home doing homework or studying. There are some things that I have to sacrifice now, but I know all of this work will pay off one day. My journey at Hancock has been life changing and I’ve enjoyed it so far. Now that I am a more focused student, I feel like I am ready to attend a four-year university and take that next step in my academic career.

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
Fall 2014 STEM/MESA/Bridges Activities

Sept. 5    STEM: TAG! You’re In (9:45-10:45am; G106B)
Sept. 11   How to Have Your Best Semester Yet: Time/Stress Management & Study Skills (5:30-6:30pm; G106)
Sept. 19   STEM: TAG! You’re In (1:30-2:30 pm; G106B)
Oct. 8     Scholarship Strategies for STEM Students (7:00-8:00 pm; G106)
Oct. 24    Landing a STEM Internship! Employability Emphasis: Interpersonal Skills (9:45-10:45pm; G106B)
Nov. 14    Professional Networking Social Media. Employability Emphasis: Communication Skills (1:30-2:30pm)
Nov. 21    Resume Development. Employability Emphasis: Beyond Qualifications & Experience (1:30-2:30pm)
Dec. 11–12 University of California, Davis and Sacramento area Biotech Industry Exploration Trip! $20.00

Using Degree Works! Your Education Planning Tool
Sept. 12   Degree Works Software Workshop (9:45-10:45am; G106B)
Sept. 26   Degree Works Software Workshop (1:30-2:30pm; G106B)

UC/CSU Application Workshops
Oct. 3     UC/CSU Application Workshop (9:45-10:45am; W-18)
Oct. 15    UC/CSU Application Workshop (7:00-8:00pm; G106B)
Nov. 7     UC/CSU Application Workshop (1:30-2:30pm; G106A)
Nov. 20    UC/CSU Application Workshop (5:30-6:30pm; G106A)