Meet Nick Butler. Nick sat in the seats of engineering, physics, mathematics, chemistry, and other courses required to survive the demanding load of a STEM major at Allan Hancock College. Nick transferred to Cal Poly, SLO as a biomedical engineering major in fall 2008. Today, Nick is an established biomedical engineer in Sunnyvale at Intuitive Surgical, an industry leader in robotic surgical technology and procedural innovation.

Nick is paying it forward. In December 2014, he generously hosted 44 AHC MESA/STEM students and four faculty. He took us on a tour of Intuitive Surgical to get a first-hand look at biomedical engineering at its finest. Students received a presentation on the company, its products, and its methods by which cutting-edge design happens. They also participated in hands-on demonstrations of the de Vinvi Xi Surgical System, a 3D HD vision system surgical robot (pictured below). Then, students toured the manufacturing production lines to see how these amazing machines are put together, one step at a time.

Several of our graduates now work for Intuitive Surgical, so Nick called on his AHC peers to bring the day together. During lunch, I had the pleasure of watching AHC STEM generations before mentor AHC STEM generations to come. It was rewarding for all.

Nick Butler (on the left) and AHC Engineering Professor Dom Dal Bello reunited at Intuitive Surgical, Dec. 2014.

ERB PROSTHETIC HAND
A Cal Poly student team collaborated to update and redesign the ERB Conformable-Grasp prosthetic hand, originally developed in the early 1990s by a group of scientists at Franklin Research Center. The updated hand is inexpensive, lightweight, and fits a wide range of residual limb sizes. It is intuitively functional, meaning control of the hand will require little conscious thought. Its outer covering mimics as closely as possible the appearance of a natural hand. Nick is on the far right, 2010.
Seven years ago, my grandma became extremely ill. The doctor told my entire family to prepare for a hard hit because there was a strong possibility that she might leave us. During this period, I went to hospital almost every day. I saw all the latest treatments that doctors gave to my grandma to try to save her life. It was sad to see someone, especially a loved one, fight for their life. Luckily, my grandma fought through the sickness and recovered. While going to visit my Grandma, I saw other patients who suffered from different types of illnesses. I saw how doctors saved their lives with new medical technologies. That inspired me and since then, my goal has been to pursue a career involving medical equipment technology.

Many people have the idea that only medical substances helps save lives. This is partially true, but many times medical equipment is used to help or aid the doctor when doing surgery on the patient. I want to take part in this type of development. I am currently pursuing a degree in biomedical engineering. All engineers want to improve the way people live, and I want to focus on saving lives.

I moved to the United States from China about five years ago when I was a sophomore in high school. The English language and the culture crash were the two biggest obstacles for me. Starting at Allan Hancock College after graduating from high school gave me a chance to improve my English skills and also prepare me for my engineering career. I started at English 512 (writing skill 2) and last semester I finished critical thinking with a letter grade of an A. Even though it has been a tough ride, it motivated me to be hard-working and determined person. I joined the MESA program during my second year after hearing about it from a friend. The tutoring program, networking opportunities and counseling really help me succeed in school. Apart from attending school full-time, I have tutored math in the evenings at the tutorial center for the last three semesters. Currently, I tutor mathematics and science at Ernest Righetti High School for the Cal-SOAP program. It is fulfilling to motivate other students to achieve their goals by using my knowledge and experience.

These three years at Hancock College have changed me as a student and person. Semester by semester, all the classes have consistently prepared me for the next step of my life goal. I have learned how to study more efficiently and also how to manage time between school and all other things. I am now ready to transfer to a four-year university where I will continue to pursue my biomedical engineering degree.
Overcoming Obstacles
by Aaron Otis, MESA Student, computer science

I started attending Hancock more than a decade ago. I really did not know what I wanted to do and eventually dropped out for five years. I thought I could make a good living after entering the workforce, but after the economy crashed in 2007, I found myself struggling. I had also broken my leg that year, so my struggle was both physical and economical. Two years later, I decided to go back to Hancock to finish my education.

The same year I returned to college I also took a part-time job at a nonprofit organization. I supervised individuals with developmental disabilities at a work site. Learning how to manage other people, let alone people with developmental disabilities, helped me learn to manage myself. I also acquired a second part-time job, so it became much more important to learn to balance my time between classes and work.

Taking more challenging classes also helped me realize the importance of developing good habits and becoming more responsible. After a few years at my position at the nonprofit, I received a promotion to a position supervising about 20 individuals for a government contract at Vandenberg Air Force Base. The position was at night, which gave me the ability to take classes in the morning, but not without its drawbacks. My sleep schedule was radically altered and presented a new challenge to overcome. Eventually, I felt the need to focus on my education and left my jobs to become a full-time student.

I found that many of the obstacles I had to overcome were put in place by me. It takes a lot of self-control to recognize what creates obstacles in your path, and how to resist the temptation to fall for these. These experiences have also helped me build the confidence and courage to help develop and become vice president of the Science and Engineering Club at Allan Hancock College.

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 Center for more information.
**SESMC**

**Scholarships in Engineering, Science, Mathematics and Computer Science**

Continuing Allan Hancock College STEM majors are encouraged to apply for the SCHOLARSHIPS IN ENGINEERING, SCIENCE, MATHEMATICS AND COMPUTER SCIENCE Program – SESMC (“Seismic”). SESMC is a competitive need-based and merit-based scholarship sponsored by the National Science Foundation (NSF), open to continuing AHC students in the following STEM fields: Biology, Chemistry, Geological Sciences, Physics, Computer Science, Engineering, and Mathematics. For the 2015-2016 academic year, an estimated 20 to 28 scholarships will be awarded, for up to $6,000 per year. If a SESMC Scholar maintains eligibility, the scholarship is renewable for a second year.

Minimum Eligibility Requirements (abbreviated) - Meeting minimum criteria does not guarantee an award.

- Be a citizen of the United States, a national of the United States, an alien admitted as a refugee under section 207 of the Immigration and Nationality Act, or an alien lawfully admitted for permanent residence.
- Demonstrate financial need for 2015/16. The 2015/16 FAFSA Student Aid Report (SAR) must be submitted with the application. Competitive EFCs are typically $6,000 or less. The 90-unit limit for financial aid may be waived based on STEM interest and progress in STEM courses.
- Be an AHC student and enroll *full-time* (at least 12 units) at AHC during each semester of the award. Funding allows you to focus on school.
- Be a declared a major in one of the following fields: biology; chemistry; geological sciences; physics; computer science; engineering; and mathematics.
- Have successfully completed Math 331 (Algebra 2), or equivalent, at time of application and be eligible to take a 100-level Math course in the next term.
- Enroll in – or intend to enroll in – two or more courses each semester appropriate to earning a STEM degree.
- Have a GPA of at least 2.7 (cumulative).
- Must not have already received a bachelor’s degree.

Application Packet/Instructions may be downloaded at: [www.ah-engr.com/sesmc](http://www.ah-engr.com/sesmc). For more details/questions contact Dom Dal Bello at ddalbello@hancockcollege.edu.

**MESA serves 125 students**

**Self-Reported Ethnicity:**
67% Latino
19% White
6% Native American
3% Asian American
2% African American
2% Asian Pacific Islander
1% Other

**Majors:**
45% Engineering
30% Biology/Biochemistry
11% Computer Science
6% Architecture
5% Mathematics
2% Chemistry
1% Physics

Andrew Boniface, Aaron Otis, Alex Carrasquillo, Tina Tang, Emilio Santos, Christian Diaz
College Seemed Unachievable
by Gabriela Morales, MESA Student, biology

College did not seem like a reality to me given the many struggles I faced. Where I grew up there were only four possible routes a Latina student, like myself, could take: laborer, joining a gang, pregnant teenager, or dead. My parents and eight siblings lived in the most impoverished part of town where all that surrounded us were cockroaches in a small compacted apartment. Neighbors with the same fate as us also surrounded our two bedroom apartment along with loud gang members in the corner of the apartment buildings. All around me, up until the age of five, all I saw were young teenage mothers, gangs and teenagers that were found killed by infamous gangs. My environment changed at the age of six when we moved into a house in a nicer community, which deeply affected my personal views on life in the years that were to come.

My parents grew up with different views on education. They did not know what college was or what it meant for those that decided to pursue a higher education. Both my parents did not make it past the sixth grade because both were the eldest in their family and had to work immediately. My parents were raised in a conservative and traditional household, which shaped the values they fostered within my siblings and I. As soon as my older sisters graduated high school they got married and started their own lives. It was not until one of my older brothers decided to go to college that my parents’ and my views on pursuing a higher education changed. My brother influenced my decision to go to college. He heavily emphasized the importance of higher education in relation to success.

School was challenging for me. I couldn't understand concepts as easily as the other students. I remember I used to stay up crying to my dad telling him that I did not understand the math. He would always stay up attempting to help me with homework. For a few years he was able to help with math, but as soon as I became a junior high student, it became challenging for both of us. He could no longer help with the more advanced math concepts. Once I got into high school it got even harder, but I decided to do everything I possibly could to succeed academically. This effort eventually resulted in admissions into a university. At the end of my senior year, I declined the university’s offer because I was afraid to leave home and felt unprepared. Instead, I spent the next three years at Allan Hancock College preparing myself mentally and academically to pursue a degree in biology.

Even with all the obstacles and challenges I faced, it seemed like I was not destined to go to college. I decided to beat the odds. Oftentimes, individuals do not get to choose their struggles, but we can change the outcome of our struggles and how we handle them. I took my life experiences and struggles and I learned from them. I am set on the path for a degree in biology. I am transferring to a university fall 2015!

Within a five-year period, the Allan Hancock College MESA program served approximately 300 students, 82% of whom were minorities. The program has a 36% transfer rate, compared to 25% for the college as a whole, including 50% of its students transferring to Cal Poly, SLO in science, math, and engineering.

Mindset for Success
Plan to spend THREE hours of studying outside of class for every ONE hour in class per week

5
Overcoming Adversity
by Courtney Connolly, MESA Student, biology

Through the eyes of a high school student, it seemed like the universe was against the idea of me attending college. Halfway through my junior year of high school, my father and I began to fight physically, leading me to run away from home. As exams finished, I was sleeping on a different friend's couch every night. At the time, I lived and attended school in Las Vegas, NV.

Once I arrived at my mother's in California, a whole new array of problems developed. These included my mental exhaustion from abruptly leaving the life I had known since childhood. I was unable to attend a public school to complete my high school education because I was considered a runaway. Although my only desire was to give up, I decided to take the California High School Proficiency Exam (CHSPE). As soon as my exam results were received, I was enrolled in community college, a full year before I was supposed to graduate high school.

Finishing high school gave me the hope that I would be able to graduate from college as well. Unfortunately, I felt very discouraged upon learning that my plan to transfer to a four-year university from a community college in one year was virtually impossible. Fortunately, I ended up beating the odds and completed all of the required coursework within a year and was accepted to Cal Poly, SLO. This accomplishment taught me that I could do anything I set my mind to and that just because someone tells you it is impossible, it doesn't mean that it is. However, I was only 17 years old and I was having doubts about my major, so it was in my best interest to remain at the community college at that time.

I have reapplied to universities many times, been placed on wait lists, and then denied admission. It has now been four years and two earned associate's degrees since I've started college. I am currently working toward completing the last lower division classes offered for my major. I have once again been accepted to Cal Poly, but in a major I know is the right one for me.

This journey has been a huge learning experience for me. When I look back on all of the adversity I had to face at such a young age, I am proud that I am still fighting for what I want. On several occasions, quitting school seemed like the only option if I wanted to remain sane. It has been very difficult for me to keep up my enthusiasm for school when it seemed like there was a stop sign at every step of the process. Not only am I still moving forward, my outlook towards my abilities and what the world has to offer has improved tenfold. Even though life has been challenging, I have learned that no matter how many times you are influenced to think you cannot accomplish something, a path to your dreams always exist. My faith in this inspires me to prevail until I complete my education.

Common Sense Reminders

- Attend class!!
- Take detailed notes
- Review notes frequently
- Visit your instructor during office hours
- Utilize FREE tutoring
- Stay calm and breath 😊

Remember...

The more YOU put into your education, the greater the benefits and success will be. You are all “A” students. Only you can prove that statement wrong.
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](http://www.hancockcollege.edu); click on MESA under Quick Links

### Spring 2015 STEM/MESA/Bridges Activities

Feb. 4 — **FAFSA Workshop** (1:00-2:00pm A103)
Feb. 6 — **Interview Skills** (9:30-10:45am G106)
Feb. 27 — **Mock Interviews** (9:30-11:00am G106)
March 4 — **Getting the Most Out of DegreeWorks** (9:30-10:30am A403)
March 5 — **Getting the Most Out of DegreeWorks** (12:30-1:30pm A403)
March 6 — **Getting the Most Out of DegreeWorks** (10:00-11:00am A403)
March 11 — **AHC Career Fair** A time for AHC students to expand their network, polish their interview skills and gather local industry information! (10am –1pm Santa Maria Student Center; Check in 9:30am)
March 11 — **Embry Riddle Aeronautical University** Admissions Presentation (1:30-2:30pm G103)
March 13 — **Cal Poly SLO STEM Tour**
March 19-20 — **Campus and Industry Exploration Fieldtrip: Cal State Los Angeles/Western Digital Company**
April 10 — **BTTB** Ethics Seminar (1:30pm M106)
April 15 — **STEM Open House** (5:30-8:00pm G106)
April 17 — **You’re Outta Here Workshop** (9:45-10:45am G106B)
April 29 — **You’re Outta Here Workshop** (5:30-6:30pm G106B)
May 1 — **Friday Night Science**: Free & open to the community.
May 8 — **STEM/MESA Student Recognition Reception.** Come celebrate your AHC STEM/MESA transfer students.
May 21 — **AHC Foundation Scholarship Awards Banquet.**
May 22 — **Commencement Ceremonies**

*For students who are planning on transferring fall 2015 & 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 2015 transfer students.*