

MESA Milestones

Featuring momentous affairs of the MESA program at Allan Hancock College

Spring 2022

New National Science Foundation Grant Awarded Serves STEM Students Across the Central Coast

*by Christine Reed, MESA/STEM Academic Success Center
Counselor/Coordinator; C6 Grant Director*



The California Central Coast Community College Collaborative (C6) invites STEM students from the Central Coast to engage in the new C6 Alliance. Funded by the National Science Foundation's Louis Stokes Alliance for Minority Participation Bridges to the Baccalaureate Program (NSF LSAMP/B2B), this new grant awarded to Allan Hancock College as the lead institution is dedicated to helping STEM students across the Central Coast to excel in their academics and develop professional networks designed to assist them in entering into the STEM careers of their dreams. STEM students of minority groups from Allan Hancock, Cabrillo, Cuesta, Monterey Peninsula, Moorpark, Oxnard, Santa Barbara City, and Ventura Colleges are invited to join in on a variety of support services including success seminars, industry and alum networking and mentorship, university and corporate company tours, research symposiums, and STEM career panel presentations.

The California Central Coast Community College Collaborative (C6) has now launched its innovative, cross-disciplinary, multi-institutional model designed to address inequalities in STEM outcomes for first-generation Hispanic/Latinx and other underrepresented minority (URM) student populations on the Central Coast including eight California Community Colleges from Moorpark to Santa Cruz. Using a three-pillar approach, the collaboration will create culturally sensitive, relevant and responsive learning environments designed to be implemented within community college systems including partnerships with universities and industry to increase URM academic and professional success.

The Spring 2022 STEM Student Success Symposium Series includes:

- Academic Success Strategies for STEM Students
- Career Journey of Dr. Juan Tapiero Bernal, Software Engineer
- Maintaining Balance and Health in a STEM Major and Avoiding Academic Burnout
- Professional Communications for STEM Students
- Creating an Amazing Student Bio
- Career Journey of Dr. Asis Lopez, US Food and Drug Administration
- Transitioning to University Fall 2022 for STEM Students
- Finding and Applying for STEM Scholarships

The grant includes efforts to embed tutors in STEM courses. This semester, tutors funded by this grant are embedded in three sections of CHEM 150 (General Chemistry 1) and one section of MATH 182 (Calculus 2). Efforts to expand this model are underway for fall 2022.

Come Visit the New MESA/STEM Academic Success Center (M500)



Features include:

- **STEM Study Center** with student-use computers and project completion tools
- **STEM Learning Lab** including comprehensive STEM tutoring services and supplemental course material resources
- **STEM Collaborative Classroom** for small group study and instruction
- **STEM Student Decompression Lounge** when its is time to take a break
- **STEM Onsite Academic Counseling** available to meet the academic and career planning needs of STEM students at Allan Hancock College

Talk, Study, Struggle, Learn, and Grow with Us

by Jacob Andersen, MESA Student, Computer Science

Hello! My name is Jacob. I am a tutor for the MESA/STEM Academic Success Center for Computer Science and an embedded tutor for Calculus 2. If my High School self were to see me today, he would be surprised that I have not only passed calculus but that I now tutor for it. In truth, I used to think that I was not made for this kind of work. But the MESA Program flipped that idea on its head and changed my mind entirely.

As we like to say at MESA, *“tutoring is a vitamin – not an aspirin.”* When treated as such and adhered to regularly, even if not actively struggling, academic performance can increase to levels that may not have been experienced before. It feels empowering to understand a question in a subject instead of only knowing (or guessing) what steps need to be taken to reach a solution. That has been my experience. I have been a student at Hancock for five years. It was not until the beginning of my fourth year that I stumbled upon the MESA program and the program’s team. My education plan was redeveloped, and the fog began to lift. Suddenly, and finally, I knew what I needed to do and when I needed to do it.



After that, I slowly worked my way through all the calculus offerings, Computer Science offerings, and almost all Physics offerings at Hancock. It was not an easy journey, by any definition of the word, but, with the assistance of MESA, it changed from what seemed like an impossible task to one that was possible in time. MESA has taught me invaluable life

skills surrounding time management, organization, academic planning, goal setting, proper usage of tutoring, and communication with my peers and professors.

I have always felt that my calling was Computer Science. At a very young age, I taught myself to code out of sheer curiosity and a determination to learn how everything works. I fell in love with computation. I wanted to be great like Alan Turing, Edgar Dykstra, Grace Hopper, and others. Until I found MESA (or, rather, until MESA found me), I thought that the mathematics and physics requirements were going to bar me from reaching those dreams. I did not believe that I could achieve those things. I thought, maybe I just did not have the brains that other students did. But, nothing could have been further from the truth. Having access to others that know the struggles of STEM students is life-changing in that regard. Interacting with people who can relate to those unique struggles seriously bolsters the ability to maintain the motivation to keep working harder, striving further, and reaching for higher highs. Ask former me if he thought he would be tutoring anything, let alone calculus. He would laugh and say, "No. It is *me* who needs the tutoring."



If you are a STEM major or aspiring to be one, I highly recommend visiting us here in the MESA/STEM Academic Success Center. Talk with us, study with us, struggle with us, learn with us, and grow with us. I guarantee you will not regret it! I hope to see you soon. Have a fantastic and enlightening semester, and thank you for coming on this short journey with me.

Academic Integrity: What every STEM student should know

by Angelica Eulloqui, MESA/STEM Counselor

Academic integrity is avoiding plagiarism and cheating, among other misconduct behaviors. Maintaining academic integrity is important for various reasons. First, academic integrity allows students to learn and grow by using their own ideas and work. Second, due to the nature of the STEM disciplines, STEM students need to master material in each of their courses in order to be successful in their future courses, being academic dishonest, impairs future success. Third, doing the right thing when it comes to academic integrity is crucial, we want all students be prepared for the future and employ integrity while in school and in their future careers.

The MESA/STEM Academic Success Center hosted our first "Maintaining Academic Integrity" workshop this spring semester. Students learned about the Allan Hancock College policy pertaining to academic dishonesty, the importance of academic integrity and took away resources and strategies that they can implement to avoid academic dishonesty.

Success Strategies in STEM

- Learn about career options in STEM
- Develop effective learning strategies in STEM
- Plan academically using college resources
- Network within the STEM discipline

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 probably study closer to three hours for each in-class hour. Even better... "Study until you understand it."

Note: **Studying** is anything outside of class that helps you learn the material. This includes: doing homework, actively reading the textbook, carefully reviewing notes, watching videos, doing extra problems, discussing the material with classmates, etc. Some students think homework is different than studying; it is not.



Avoid exceeding the "60-hour Rule": *Class time + study time* (at least 2:1) + *work hours* (+ *family responsibilities*) should not exceed 60 hours per week. The "60-hour Rule" proposes that you have 60 hours per week that you can do quality and focused work (about 9 hours per day over 7 days). So, if you are taking 14 units, you should be studying at least 28 hours per week, which means you have 42 hours devoted to academics each week. This leaves 60–42=18 hours for work. If you are doing 3 hours of study per class hour, then you have less time for work. Or, if you have W hours of work, then the number of units you should be comfortably taking (assuming 2 hours of study per hour in class) is:

$$U = \frac{60 - W}{3}$$

Scholarships can help reduce the number of hours you need to work. Always apply to scholarships.

Perhaps more important than reaching a specific number of study 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. What you get from them will significantly affect your success in the next courses and at the university.

Practice, work with others, go to review sessions and study groups, talk to the tutors, and come to office hours. Read your emails; this is how faculty and program reach out to you.

A few "obstacles" that students put in their way:

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

FOLLOW INSTRUCTIONS

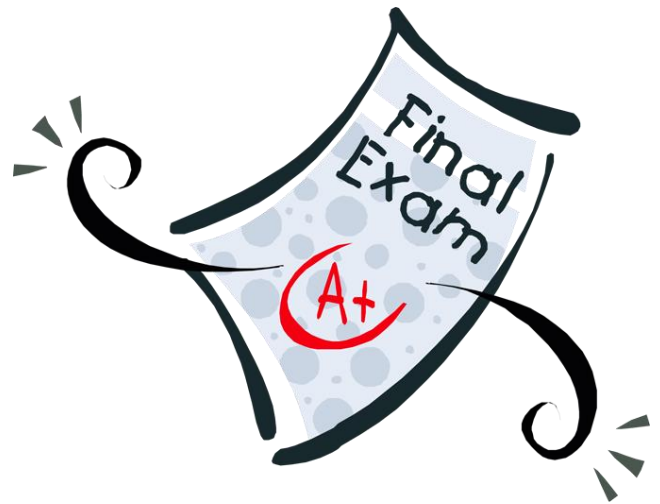
This is the first rule to follow for any employee or member of a group. If you cannot follow instructions, how can you fill out an application? Applications that are filled out incorrectly are discarded (**if your Cal Poly Application has even a small error, it can jeopardize your ability to be accepted**).

Some students often do not do what is asked, or they 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, or exam or homework problems statements.

TEST-TAKING

- Follow instructions. Know the rules of the exam, and know what each question is asking.
- Complete problems you know how to do. Do the “easy” problems first; this gets your brain working and starts earning points, giving you a sense of accomplishment. Others recommend to start on the hard problems first, work as far as you can, then move on to the easier ones; your brain will subconsciously be working on the hard problem in the background.
- Check your work. Are units correct? Do you indicate if a quantity is a vector? Do not lose points for mistakes that could be avoided.
- In a four-problem test, it is better to do three problems very well and one badly, than to rush through four problems and do them all not so well. Whatever your approach, manage your time to maximize your score.



RESOURCES

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

The MESA/STEM Academic Success Center opened up this year, combining the MESA and STEM Centers into a bigger and better one-stop facility. Not many community colleges have a MESA Center or a STEM Center, let alone tutors who have taken the classes before.

MESA’s Organized Study Groups/Review Sessions have been around for many years, and provide you with weekly 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.

MESA/STEM Staff. The STEM counselors and staff are excellent. Other colleges seek out our counselors for advice on transfer.



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. A good study group helps keep you accountable and provides positive peer pressure.

Faculty office hours. I (and all full-time faculty) have five 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 your resources for granted.

When You Feel Lost, Perseverance Matters Most

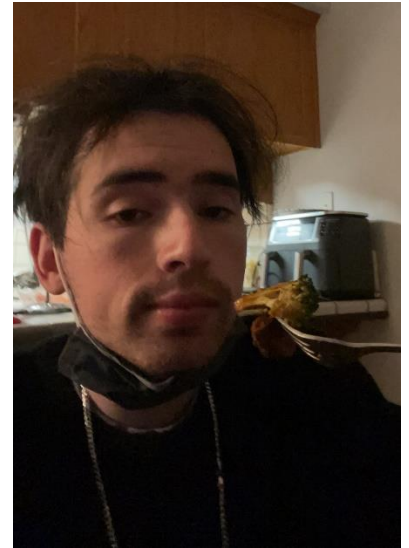
by Alan Rubalcava, MESA Student, Electrical Engineering

I never thought of myself as an engineer, let alone a person who would pursue a degree in STEM. I went through most of my academic journey clueless about my future. Taking classes and passing them felt like an obligation and nothing more. Sure, I was able to pass my classes and do well, but what's the purpose if I saw myself with no future? With this mindset and the beginning of my college experience, my grades plummeted as terms passed. Eventually I hit my lowest point in 2019. Taking calculus and various STEM courses, I barely managed to pass some classes while failing a few others. This was just the start, yet I felt as though I hit rock bottom.

I remember taking my first college-level physics course. I thought of it as a new world of wonder in which every unique concept was as captivating as it was strange. Initially, I was in a sea of confusion and found myself unable to understand what was happening. The math and theory completely eluded me. I struggled so much that I received a failing grade.

Months later, I retook that same physics class. Between my first and second attempt, I had time to reevaluate my goals and motivating factors. I began to set aside distracting hobbies, such as having a need to play video games every day. Rather, I spent more time contributing to understanding lecture material. I then approached the class with fresh desire and motivation to understand what I knew could be an exciting class, even if I also knew it would induce great stress. As a result of my perseverance, I was able to pass the class with a grade high enough to be recommended as a tutor. In the following physics courses, I was able to excel. I continued to be recommended as a tutor for the more advanced courses and that remains true to this day. I loved helping students with physics, I was doing it out of my own time without any real benefit. I asked myself, "Why not be an official tutor?" As someone who failed the class, I understood the many misconceptions students had with the content. This marked a shift with my overall performance in college.

I'm just an ordinary person. I went from failing classes and nearly dropping out, to being a tutor for difficult classes, being admitted to my first-choice school, and having an internship lined up at a naval base. It may be hard to find your worth, but we all have hidden potentials. There's no shame in the struggles you face. College is the perfect place to find yourself. When you feel lost, perseverance matters most. Believe it can be done.



University Field Trips are back!

by Angelica Eulloqui, MESA/STEM Counselor

We are so excited to bring back university exploration field trips this spring! MESA/STEM collaborates with universities to create STEM focused experiences. Students visit labs, take tours, connect with university faculty, STEM transfer students and learn about resources. This is great opportunity for students to step foot on their dream campus and learn about what they have to offer. Visiting universities allows students to experience the college environment and helps them determine if a campus is a good fit for them.



Students, we hope that you join us as we visit Cal Poly San Luis Obispo on June 1st and UC Santa Barbara on June 2nd! For more information visit the MESA/STEM Academic Success Center.

Inspired to Inspire Others

by Jayden Yamamoto, "Friends of MESA" Student/STEM Tutor, Chemistry

My friends and family say that my best, and sometimes worst quality, is my passion, and I agree. In everything that I do, I am passionate and driven to complete what is set before me. From a young age, my passion has manifested itself in stubbornness, but over time I have developed it into a dedication and motivation tool to succeed in areas that I feel uncertain in or in areas in which I receive opposition. When I set my mind to complete something, there is very little that can stop me from accomplishing my goal. My passion for learning and Chemistry drives me towards the goal of getting my bachelor's degree and pursuing a degree in Chemistry.

I know I struggle because I'm not the smartest girl in the world, nor even in my own friend group, but my perseverance and drive to prove myself and to succeed in higher education more than makes up for it. Science and math don't often come easy to me, but I've been taught to take initiative of my education and to research and find the answers if I don't know. My passion for school has been influenced greatly by my elementary and high school education. I was homeschooled for nearly my entire life and often times was required to teach myself the material. While I had access to teachers who I could email, my mother encouraged me to research the answers myself and become an active learner rather than a passive one. She inspired me to be an example to my younger sisters and to show them that they too could succeed in whatever they set their minds to do, using passion and perseverance as a tool.

Preparing for my major, Chemistry, has been a journey filled with many ups and downs. Ever since high school, I've been fascinated with the world of Chemistry and how the world is fashioned together. I was able to interview a Chemical Engineer for a vocational project. This interview plus research on the side helped me grow in my interest of how each thing we encounter in our daily lives exist. I decided to major in Chemistry at Allan Hancock College with my dreams of entering a CSU or UC upon transfer, but my journey was hindered slightly. In my second year at Hancock, I was to take organic chemistry in order to transfer, but despite registering at the earliest possible time, I was unable to secure a spot in the class and had to wait another year in order to reapply. I started to doubt that my path was the right one, but waiting a year was a blessing in disguise. During that extra year, I realized that I needed to push through and focus on the goal ahead rather than being discouraged by setbacks. It also gave me the opportunity to serve as a physics learning assistant/tutor, which exposed me to the innerworkings of instruction and the responsibilities of an instructor. Along with tutoring at the college's math center, I found that I truly enjoyed helping others learn for themselves and realized the potential that I had in becoming not only a chemist, but also a chemistry teacher. This not only reinforced my desire to learn, but also gave me hope.



I just got accepted to Cal Poly SLO, my dream school, and am happily preparing for what my next phase of life will be. I hope to inspire others with the desire to learn and succeed in whatever they put their minds to! All of my academic career at Hancock has prepared me with the skills to succeed in upper-division courses because it has taught me diligence, perseverance, and initiative to take hold of one's education. Most importantly, I love to learn and that desire to continue to grow and expand in my knowledge is a great motivational factor in everything I do, including my academic career.



Don't delay! Now is the time to invest your time and energy into securing 2022/2023 scholarships and summer 2022 internships! See the links below and learn about securing scholarships and internships – two invaluable components of a STEM education.



<https://www.hancockcollege.edu/mesa/Scholarship.php>
<https://www.hancockcollege.edu/mesa/MESAinters.php>

The only thing standing between you and scholarships/internships is your effort to make it happen. If you need help, see your MESA/STEM Centers for assistance. Make it happen for yourself. You will never regret it!

Spring 2022 MESA/STEM Academic Success Center Activities

- Feb 2— Financial Aid and Scholarship Workshop (3:00pm-4:00pm; Zoom)
- Feb 4— Internships Opportunities & Strategies Workshop (1:00pm-2:00pm; Zoom)
- Feb 11— Financial Aid and Scholarship Workshop (1:00pm-2:00pm; Zoom)
- Feb 25— STEM Academic Strategies: Setting Yourself Up for Success (1:00pm-2:00pm; Zoom)
- March 4— Recognizing and Managing Burnout Workshop (1:00pm-2:00pm; Zoom)
- March 8— MESA/STEM Academic Success Center Grand Opening (3:00pm; M-500 Patio)
- March 11— Maintaining Academic Integrity: What Every STEM Student Better Know (1:00pm-2:00pm; Zoom)
- April 15—You're Outta Here Workshop* (1:00pm-2:00pm; Zoom)
- May 4—You're Outta Here Workshop* (3:00pm-4:00pm; Zoom)
- May 13— MESA/STEM Student Achievement Celebration 2022 (4:00pm-6:00pm; Science Quad Patio)
- June 1— Cal Poly Field Trip – for more information contact the MESA/STEM Academic Success Center
- June 2— UCSB Field Trip - for more information contact the MESA/STEM Academic Success Center

*For students who are planning on transferring fall 2022 and want to know the next steps to successfully transition from AHC to a four-year university, don't miss this workshop! Mandatory attendance of one session for MESA fall 2022 transfer students.



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/mesa.

