

October 14, 2019



STEM Professional Learning

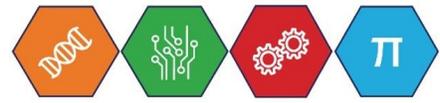


Lab Redesign Mini-Grant

Michael Crivello, Physical Sciences

“Creation of Physics Pre-Lab Videos for Instructional Readiness”

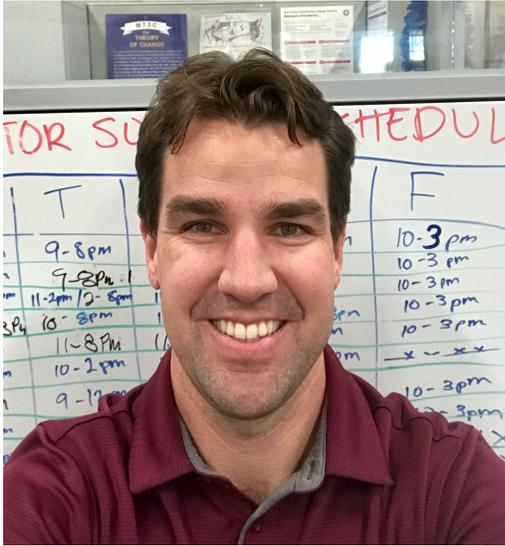
As a Physics faculty member of the Physical Sciences Department, I want to improve student readiness as it pertains to their success in the physics laboratory session. Although pre-lab instruction is provided, many students arrive to the lab session unprepared to perform experiments on select apparatuses. In an attempt to redesign our physics courses to incorporate and assess elements of active-learning for the Physics 125 and Physics 195 labs, I designed and performed numerous recorded instructional videos that demonstrate how a student’s apparatus for a particular lab experiment will be set up and used. In addition, video instruction further demonstrates techniques of physical measurements performed for each individual experiment. These instructional lecture demonstrations document my 21 years’ experience working at Mesa College setting up experimental demos that have aided students in their understanding of physical principles addressed in the lectures. These demonstration videos will also be useful for adjunct faculty who may not be familiar with the resources available in our department. There are 12 lab experiments for which videos were produced, and each can take two hours to edit, totaling more than 40 hours to complete. Many of these videos are posted on the Mesa Physics YouTube channel. The laboratory experiments are a mandatory, yet integral, part of both the Physics 125 and Physics 195 courses. Our physics students will gain a much better understanding of these physical principles by performing hands-on activities, collecting and analyzing data, and working with their lab partner. Furthermore, students can use their phones to reference these videos during the lab experiment. This practice leads to much less confusion regarding the use of equipment, resulting in students having more time to finish the lab experiment on time and begin analyzing their data. Care was taken in producing video content that emphasized conceptual framework of the lab experiment and how each individual lab experiment fits into the overall course content.



Welcome to the STEM Center!

Faculty Spotlight

One Professor shares their transformational journey at Mesa from math student to faculty member, and the role tutoring and STEM spaces have to play for our students.



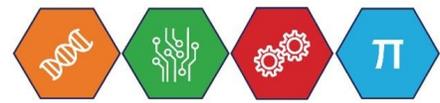
Shane K. Briggs

Assistant Professor, Mathematics

I am a high school drop out, who eventually earned a GED. After working backbreaking jobs for several years, I realized I wanted something more for myself. I came to Mesa in the Summer of 2007. With the help of my family, professors, student services, and classmates I persevered. I earned an associates degree from Mesa in physics and transferred to UCSD and earned a bachelor's degree in mathematics. I then went on to graduate school at SDSU and earned a masters degree in mathematics. And now I am a mathematics professor here at San Diego Mesa College.

Through each stage of my educational journey I saw how important immersive study experiences are. When in high school I did not dig in to my studies. I did not ask questions in class, I did not go to tutoring if I was confused, and I did not form study groups. At Mesa I decided to change that. The tutoring center provided a place to ask questions and meet people who were also working on math. This immersive environment greatly improved my willingness and ability to deeply dig in to my studies.

I'm proud to be a part of the STEM Center because I want to help show students that if they work hard they can really understand complex concepts. I want to try to give back what Mesa gave me, and the STEM Center is a great place to do exactly that.



Hours of Operation

<u>STEM Center</u> Monday - Thursday: 8 am - 8 pm Friday: 9 am - 5 pm	<u>Tutoring</u> Monday - Thursday: 9 am - 8 pm Friday: 10 am - 3 pm	<u>Counseling</u> Monday: 4 pm - 6 pm Tuesday: 12pm - 2pm Thursday: 10am - 12pm
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Contact Our Team!

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