The New SMEar

A Message From The Dean


Craig Caldwell

I really wanted us to have the chance to come together and celebrate in our Convocation Day gathering but it wasn't to be. Thus was born the first ever Science Math and Engineering Convocation Day Newsletter. Putting it together has been an interesting experience. It's hard to remember a time when we started and ended our days with something OTHER than an infection statistic and stories of hapless politicians, but I found that I really just didn't want to write about Covid. As impressive as SME has been in responding to the crisis, I wanted to tell you about something else. As I reached out to colleagues, I found a wonderful picture emerging from SME's front lines and was reminded that we are an active, engaged School forging a better future both in and out of the classroom. True, it's been a heavy lift to struggle in isolation from one another; yet, in this newsletter you will find evidence that our school is strong! In this newsletter you will see that we are creative and forward thinking as we sow seeds of renewal that are just waiting for Covid to recede…as we know it will. And when it does, the things we are planting now are going to burst forward again to renew us all. So yes, for this short season let our work be to help our students and each other as we all struggle with so many daily virus-imposed burdens. But I do hope that, like me, you too will find your spirits lifted to see that great work continues despite the gloom of news headlines. I am heartened by your work and hope you will feel the same.

P.S. A newsletter like this can never hope to capture the full picture of such a diverse and active group as in SME. There are projects and people doing things that deserve to be included here but that by my ignorance, poor timing, or lack of sleep I have neglected to include. Please forgive me if you or your project is one of those. I welcome your communication about work you are doing and would love to highlight your special contribution in a future edition.

First Faculty Research Fellowship awarded to Quentin McRae

Quentin McRae, professor in Engineering, is SME's first Faculty Research Fellowship (FRF) recipient. The FRF (http://www.slcc.edu/sme/faculty-fellowships/faculty-research-fellowship.aspx) is a new opportunity designed to get students working on real-world projects. Over the next 2 years, Quentin will dedicate much of his time to involving students in a unique engineering competition. The annual competition is organized by the Mars Society (http://urc.marssociety.org/) and takes place in Hanksville, UT, with an international group of competitors. Teams must build a working Mars Rover, test it, and be judged in May. Quentin's FRF project is to develop a flexible robotic platform that can serve as the prototype for SLCC students in the annual competition. Each year, the competition offers new challenges and students will need to adapt the prototype to meet the new mission parameters. The students get the opportunity to work on a complex, hands-on project to implement theories in ways that are impossible in the classroom. Quentin will work alongside the student team as a faculty guide and mentor. This project is a long-term investment in infrastructure that will put SLCC students on the same competitive playing field as major universities. Look for announcements from Quentin about his progress and op-portunities to see the new robot.

Hellos:

Welcome to new members of the SME family:

- Piotr Runge has joined the Math department as a tenure track faculty member.
- Sam Jones, tenure-track faculty member in Physics, comes to Utah after living in the Caribbean for many years (we'll be sure to check in with him in February to see how he's holding up).
- Tiffany Hilton, Mitra Hosseini, Hajia Malik, and Jackie Spoon are joining us as instructors this year to support Math and Exercise Science
- Sheri Zaugg is new in the Administrative Assistant position for Math.
- Teneisa Lincoln has joined STEM Learning Resources as a new Administrative Assistant.
- Lane Law has taken a position as Scientist and lead mentor in the InnovaBio program.

Goodbyes:

- Joel Clarkson (Engineering Technology), Cindy Soderstrom (Math), and Mark Glines (Math) retired this year. Farewell, friends…it won't be the same around here without you.

What happened to Health and Lifetime Activities???

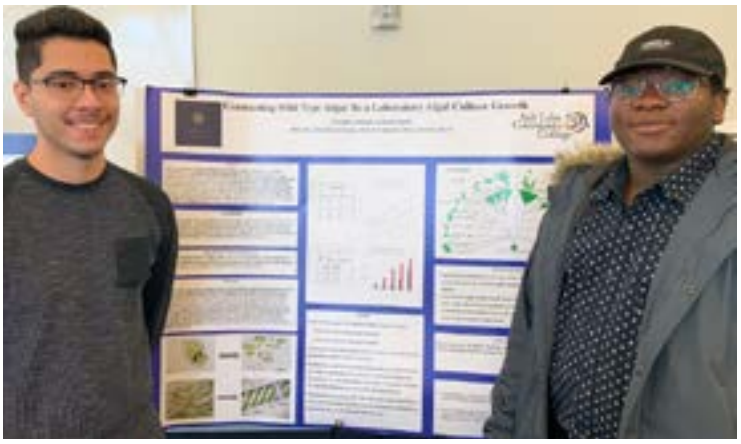
The old HLA department is now the Exercise Science department. This is in keeping with the direction the department is moving to focus on Exercise Physiology as a discipline. You will still find activity classes galore (*sans* Covid19), but the department is moving full steam ahead with its new emphasis on the science of human performance. The department is aggressively expanding its capabilities through a combination of college support and Perkin's grants. With an emphasis on project-based curriculum and high impact practices in the classroom, Exercise Science is revamping core classes including EXSC 2200 Kinesiology, EXSC 2250 Exercise Physiolo-gy, EXSC 2415 Functional Performance, EXSC 2430 Designing Training Programs, and EXSC 2450 Internships. In addition, the department just signed a groundbreaking transfer agreement with the University of Utah allowing our students to transfer into the Kinesiology program.

STEM Learning Resources

The STEM Learning Resources department has established a public Canvas site that you can use to connect students to tutoring and workshops. Students can watch a short video to show them how to sign up for help.

Please consider showing this video to your class. It will only take a few minutes and could be just what a student needs to be successful this semester. The video is at:
https://spark.adobe.com/video/0dcj4fD7WSPKp
Also, be sure to link to the following public CANVAS page from your course website:
https://slcc.instructure.com/courses/636642

The Evolution of Biology 1625!



BIOL 1625 has evolved to give students a boost! The course, which covers topics in evolution, ecology, and organismal biology, has adopted a strategy that allows students to explore the scientific method with independent projects. Students explore a topic of interest by posing a hypothesis that they test with appropriate experiments. At the end of the semester, students develop communication skills by assembling research posters that they present in a mini-symposium. If you've ever had to stand before a group of students, faculty, and staff and explain your research findings, you know what an accomplishment this is for these new scientists. For many students, this was their first exposure to research and a unique opportunity for them to explore an area of interest, as well as think critically about how their classroom learning relates to the real world. Melissa Hardy and Emmanuel Santa Martinez are the mutations responsible for expression of this new approach. Check out these student comments:

"I enjoyed doing this project, sharing it with other people, and being able to have the inner scientist in me come out. I had no idea I had that in me!"

"This experience changed how I see myself as a scientist, a role I have often felt excluded from in past educational experiences. I now feel more confident, motivated and curious about the world around me."

"For me, this course sparked an excitement for discovery. The challenges I faced while completing the project not only taught me how to apply the Scientific Method, but also strengthened my resolve to become a better scientist."

$\int$'ing a new approach to Engineering math

One of the greatest challenges students face when coming to science and engineering programs at SLCC is to have important foundational skills in mathematics BEFORE they can begin coursework in the disciplines that interest them. It can be a long haul and many students don't make it through the preparatory work. In engineering, students embark on a path that takes them through a challenging series of math courses before they can begin to take their first steps in engineering. A careful analysis by the Engineering Department suggested that an alternative arrangement could lead to better outcomes. Starting in Fall 2020, SLCC is offering ENGR 1010 as an alternative path to satisfy the mathematics pre-requisites for Engineering core classes. ENGR 1010 focuses on mathematical techniques that orients students to applications they are learning in the engineering disciplines. The tools learned in this class give students a level of competence that allows them to progress in engineering. This approach was pioneered at Wright State University and has shown solid gains in completions including by students from traditionally underrepresented groups in Engineering. In addition to improving outcomes in Engineering courses, students taking the ENGR 1010 curriculum at other institutions have shown improvements in their performance in their math courses as well. Since ENGR 1010 does not replace the requirement that students complete advanced math classes, this is a win-win that will lead to greater mathematical competence and better preparation as students transfer to Universities to continue their Engineering studies.

Control your reaction when you read this!

For years, our American Chemical Society student affiliate club at SLCC has received accolades and commendations. Despite a global pandemic and the campus closures in March, the recognition keeps on coming. Despite having to drastically alter activities from mid-March on, the club still had one of its most successful years ever!!! The SLCC ACS Student Affiliate once again received the American Chemical Society's Outstanding Award and was also designated as a National Green Chemistry Chapter. How does this club so consistently rank at the top in the nation? Thanks to strong faculty mentorship, the five ACS clubs racked up an incredible menu of accomplishments that include the following:

Conducted 4 separate and successful service projects for 4 local charities, raising $15,700 and donating hundreds of volunteer hours to these charities.

Organized 11 activities for National Chemistry Week and Mole day, including our very popular Mole Day Trivia Challenge and an NCW Poetry Slam Competition.

Conducted 2 events for CCEW/Earth day including helping to organizing a virtual Earth day sculpture contest on the SLCC Redwood Road campus.

Presented the Chemical Information Series (CIS) in which the club planned, hosted, or attended 50 presentations and arranged 10 off-campus field trips.

The Elemental Expeditions outreach program continues, with visits to several elementary schools to provide hands-on chemical demonstrations and instruction.

The affiliate provided over 150 judges for 10 local, district, and state final science fairs.

Unfortunately, the Covid-19 pandemic did hit the ACS students hard when the ACS National Spring Meeting was canceled. This was quite a blow to the students that had worked so hard preparing for the conference. Fifty-one of our student members registered for the Spring ACS meeting where they were to present twelve undergraduate research presentations and two demonstrations at the Chem Demo Exchange. Support for the students was coming from fifty HIPs grants, the Division of Natural Sciences office, and the Club and Orgs office to cover airfare, registration, and hotel cost. While disappointing, the club still hopes to use these funds for the next ACS Spring National Conference in San Antonio, Texas in March 2021. This would have been the 20th year traveling to the ACS National Conference making it a tradition anticipated by students each year. It is often heard that chemistry students come to SLCC because they want the opportunity to be part of the ACS and go to the ACS conference. The club is already starting new undergraduate research projects and is accepting any students that would like to participate. If you have students interested in a world class experience, have them contact Ron Valcarce, Chemistry professor. He's the one keeping this equation in balance.

The School of Science, Math, and Engineering is fortunate to be a partner with Student Affairs in offering a TRIO STEM program. Though TRIO programs have been around for many years, the TRIO STEM program is a relatively new offering that focuses specifically on math and science students. As a federally funded grant program serving first-generation and low-income students, TRIO STEM specifically supports students that have been historically underrepresented in STEM fields. Very few colleges can claim to have a TRIO STEM program, but at SLCC we know how to do it right! Since 2015 when the project first launched, TRIO STEM has contributed to over 100 graduations and transfers with over 300 students served. Now at the beginning of our Fall 2020 semester, it is a pleasure to announce that this excellent track record has led to a 5-year renewal for the TRIO STEM program!!!

The program offers an incredible array of support services that include campus visits, transfer workshops, professional development workshops, and support in finding research and internship opportunities. In addition, TRIO STEM emphasizes the importance of connecting students to their discipline through relationships with peers and faculty. The creation of a community of support is one of the most important parts of TRIO STEM's work and underlies the success seen in the program. Provost Clifton Sanders recognized the power of the program by saying, "Without the excellent resources provided by SLCC TRIO programs, many first generation and low-income students would not realize their dreams of becoming successful STEM professionals. The success of TRIO SSS and TRIO STEM programs illustrates SLCC's vision and mission at its best, and hope for students, families and communities." TRIO STEM is often in need of strong faculty mentors. Please consider being part of this work. Contact Tanasia Valdez, director of TRIO STEM, to learn more.

Exercise Science Gives a Gold Medal Experience

Since the US Olympic Speedskating team is headquartered just down the road at the Olympic Oval, the SLCC Exercise Science department is working with the Olympic team to give SLCC students the opportunity to work with world class athletes. Now in its second year, the partnership with US Speedskating puts Exercise Science faculty and students in position to provide functional testing for US speed skaters preparing for World Cups, World Championships, and the Winter Olympic Games. Students in the department get hand-on experience with elite athletes to determine appropriate training zones, track training outcomes, evaluate performance, and assess readiness for competition. This is a unique opportunity for SLCC students - one that many students in even the most elite University programs never get the chance to experience.

Rethinking How Developmental Math is $f(x)$'ing

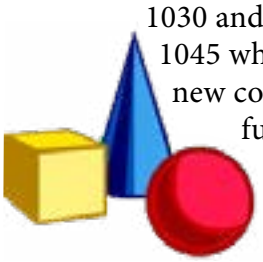
The Math department is undertaking a major revision to how we support students needing developmental education. For several years, SLCC has offered an "emporium" style competency-based program that allows students to accelerate their developmental course work. This type of learning has powerful advantages for students since it allows them to get what they need and move into an academic program. The problem with the emporium approach is that it works well for highly motivated students that do well in self-paced environments; however, there are major hurdles for those that are new to the demands of higher education. Often, the non-college prepared student struggles to overcome and succeed in this environment. With instructors from all levels of math involved in brainstorming, researching, and discussing strategies known to work, the SLCC Math department is launching RECAPTURE, a next-generation approach to developmental Math. The RECAPTURE project has the following features:

1. placing students appropriately
2. creating cohorts
3. engaging both faculty & students "hands-on" in the classroom
4. minimizing exit points & cost barriers

Starting Fall 2021 students that are not ready for college level math will be placed into a single course called "Foundations for Mathematical Success". Using multiple measures for placement, the course involves advisors, faculty, and the student in setting a pace to accelerate the student through the developmental levels. The student can take up to 3 semesters to complete the course but will have the option to accelerate completion as well. Extra one-on-one time will be spent with students needing additional help to keep them on pace. Instruction will take place in small group settings and will have students working together in cohorts. This effort is a completely new model for developmental learning and requiring collaboration from people across the college including advisors, financial aid representatives, the registrar, and others. The project is being led by Brenda Gardner and Rachel Marcial who are doing truly ground-breaking work to design the curriculum and structure for this new approach. They are digging deeply into the research and drawing on the experience of many other math faculty members.

Co-requisit Support:

Our current developmental approach relies on having students register for a series of courses that teach basic math concepts and skills in preparation for the college-level math course. This can be effective, but it takes multiple semesters before the student is able to reach the college math class. The latest research suggests that many students can be successful without taking developmental courses so long as they receive timely support and guidance. This has the advantage of helping them move forward much more quickly in their progress to completion. The Math department is building off this research to implement a strategy using co-requisite coursework that supports students taking Math 1030 and Math 1040. Students needing extra support will enroll in Math 1035 or Math 1045 where they will receive just-in-time support to learn college-level concepts. These new courses are equivalent to completing Math 1030 and Math 1040, are transferable, and fulfill the QL requirement. This work is being led by Garth Butcher, Ron McKay, Carla Kulinsky, and Alia Criddle. Implementing these two new courses will benefit thousands of SLCC students each year and result in greater student success and completion.



Notable Accomplishments

First, everyone in SME gets an A+ for the response to Covid19. Its been a real slog, but the response to Covid19 has been a remarkable show of diligence, care, and professional skill by everyone. With courses moving to distance formats, faculty and staff successfully transitioned thousands of students to a successful outcome. You heeded the calls to streamline our work and support students and it showed! The grade distribution over all of SME showed only marginal differences from prior semesters and fears of mass withdrawals never materialized. Covid19 has been incredibly disruptive but because of the good work of faculty and staff in SME, the disruption to students' academic aspirations was minimized. Thank you, thank you, thank you!

-Congratulations to Maura Hahnenberger (Geoscience dept) for her research publication in Science magazine titled "Microplastics and Dust in the Air"

-Congratulations to Nick Safai (Engineering dept) for recognition as the Utah Engineering Educator of the year by the Utah Engineering Council.

-SME developed two new gateway courses as part of its Pathways project. The courses are versions of Biology 1010 and Chemistry 1010 that use the principles of PARK (Plan, Attend, Read, and Know your resources). Ryan Holcombe led the way with groundbreaking work in the Chemistry course while Dan Carpenter built on those efforts in Biology.

-Allen Tanner in Engineering Technology is working with other Engineering faculty to create a Maker Space for the community. The space is currently being outfitted with equipment and training is being developed. Watch for updates on this incredible new opportunity soon!

-Wesley Sanders, (Engineering dept) is part of NACK (Nanotechnology Applications and Career Knowledge) Network. This is an NSF-funded project housed at Penn State University. As part of this network, Wes is actively contributing to a national curriculum database for nanotechnology and also enabling access to SME's suite of nanotechnology instruments. Students from around the world can use SLCC's instruments through a NACK virtual interface!

Physology goes POPS!

A few years ago, a few Biology faculty members (Kristen Taylor, Evelyn Galvez, Jo Stosich, and Kathy Bell) and a Wellness staff member (Preston Lindhardt) sat down and went through what it would take to change the Physiology lab experience into a more open lab of scientific exploration. The goal was to have students come out of the lab really engaged in exploration of their own physiology. Three years in the making, the POPS project (Physiology of Physiology Students) took flight in BIOL 2425 this past year. The experience transformed the lab from a "canned lab" (one that has each exercise strictly outlined and controlled and the "right" answers graded) to a lab where students are engaged in exploring their own physiology.

Evelyn Galvez, explains that "My experience as a lab instructor in this project was very satisfying. Physiology labs are intended to teach students new concepts by conducting different experiments guided by the teacher, which can sometimes make it unclear whether the student's understanding was concrete. This project brings with it the opportunity to give the student absolute control of their learning. As an instructor I was satisfied to see how students were able to connect physiological concepts taught in lecture and lab with the POPS project. By allowing flexibility, we allowed students' creativity to expand and the opportunity to engage in the inquiry process."

The faculty team is excited to discuss opportunities to expand this project in collaboration with faculty and staff from other departments. While Exercise Science is already engaged in the project, chemistry, physics, and engineering are all inherent in the study of human physiology. If you are part of one of these departments and want to get involved with POPS, reach out to Kristen Taylor in Biology for more information.

STEM Learning Resources- Where did all the tutors go???

TUTORING

When SLCC went virtual this past Spring, it was clear that students would need support more than ever before. Yet our traditional, face-to-face approach to tutoring couldn't continue and a new approach to STEM Learning Support took shape. Tutoring operations were put online for the first time in Summer 2020. Though the doors are closed, tutors are still working hard using a virutal interface. The STEM Learning Resources team hopes students engage with tutors in the new virtual setting to foster a much closer connection between student and tutor and that the convenience will help students access the services. In most cases, students use the virtual environment to access tutors on a first come-first serve basis. However, students with an appropriate DRC accommodation can make Focused Tutoring appointments for either in-person or virtual services. Tutors are available Mondays through Thursdays (10 :00 am to 8:00 pm), and Fridays and Saturdays (10:00 am to 3:00 pm). Take a look at http://www.slcc.edu/tutoring/ for information on accessing services.

WORKSHOPS

STEM Learning Resources is a pioneer in offering supplemental workshops. Workshops are intensive learning sessions that pair faculty experts with students to focus on difficult or important conceptual work.

Workshops are offered at scheduled times that require pre-registration. Schedules and registra-tion information can be found at http://www.slcc.edu/stem/workshops.aspx

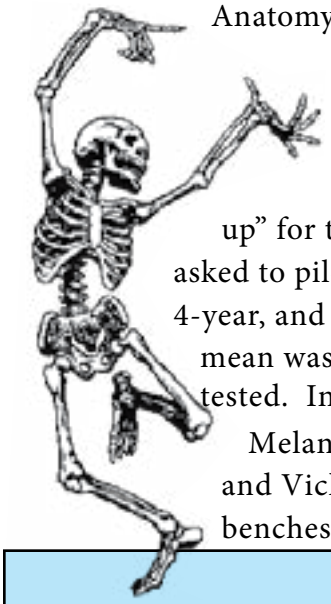
Currently workshops are offered for BIOL 1610 and MATH 0980, 1010, 1030, 1040, 1050 clas-ses. However, new workshop offerings in Biology and Chemistry courses will be launched later in the 2020-2021 academic year so watch for updates and announcements.

Info for FACULTY

The STEM Learning Resources has made it easy to integrate student support into you course. First, there is a video that teaches students how to make and appointment fur support. Access the video at:
https://spark.adobe.com/video/0dcj4fD7WSPKp

Secondly, you can integrate the following public CANVAS page into your course site to connect students to tutoring and workshop opportunities.
https://slcc.instructure.com/courses/636642

CAPER (verb) - to dance in a lively way



Anatomy and Physiology are essential and very challenging courses that form the capstone experience for many science students at SLCC; but recent results suggest that a National Science Foundation-funded educational research project is having a huge impact. Thanks to CAPER (Community College Anatomy and Physiology Education Research), students are able to "bone up" for the challenge in new ways that are working to improve success! SLCC was asked to pilot the HAPS National Anatomy Exam which was administered in 2-year, 4-year, and professional schools. While the mean exam score was 51.7%, SLCC's mean was 60.8%. This put SLCC higher than the mean for every type of institution tested. In addition, faculty noticed significant decreases in student anxiety.

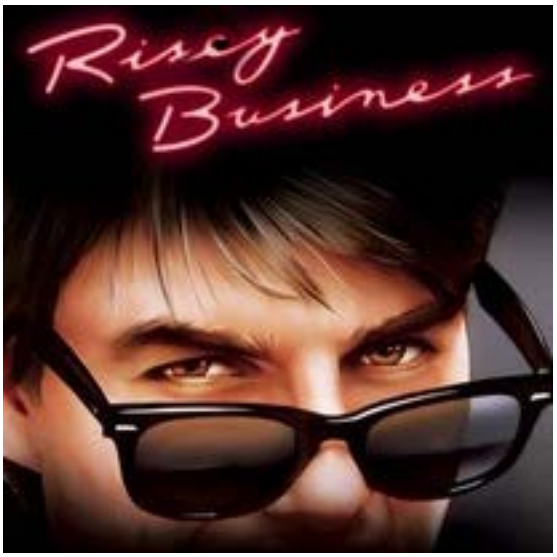
Melaney Farr, Nancy Barrickman, Kathy Bell, Dahlia Salloum, Chad Harbaugh, and Vicky Rands are capering in the aisles! Rumors of dancing on the lab benches has been reported as well, but are as yet unsubstantiated.

THE AST at LAST!

After 2 years of effort, Utah's System of Higher Education will have a new degree option for biology students starting in Fall of 2021. This ground-breaking work was led by Jessica Berryman and Tim Beagley of the Biology department and resulted in a new type of transfer degree called the Associate of Science Transfer or AST. This new path in the sciences was inspired by the SLCC Associate of Pre-Engineering (APE) degree and by similar degrees from other states that specifically focus on helping underprepared students. For students using the SLCC Biology program as a stepping-stone to a Bachelor's degree at the University of Utah, the new degree lays out a clear map for how to prepare for the journey. Students needing foundational and prerequisite work will have additional financial aid flexibility and specialized options that an advisor can use to help them craft a clear pathway to success. The degree allows students to balance their schedules since they can complete some of their general education requirements at the University in the same way that a native University student would. This new degree and the pathway it lays out will ultimately save students time and money and give countable credits very early in their academic career. Importantly, this new degree also comes with a program-level articulation agreement with the University. Students that complete an AST at SLCC will be able to step right in to upper division biology courses and labs when they transfer. The design of this new degree received considerable positive attention from other institutions in our state. If you have under-prepared students and want to explore how this new degree type might support students in your program, contact Jessica Berryman or Tim Beagley for more information.

Twenty Thou$and Dollar$

That's approximately the amount of money that StudentFacturED saved the Biology department each year since 2018. Not only that, but at the same time students in the Biotechnology program got hands-on experience with quality systems, supply chain management, and process improvement. How? StudentFactureED is an SLCC training program that teaches students life science manufacturing skills. The products they make are lab supplies needed in several of the Biology teaching labs. The outcomes are remarkable! Not only are the supplies dramatically cheaper, they are also of far superior quality to the commercially available options. As a result, the Biology department slashed student lab fees by approximately 40% this past year while at the same time providing high-quality training for Biotechnology students. StudentFacturED and the Biology department are continuing to collaborate on new products to reduce costs and provide learning experiences in manufacturing. Thayne Dickey and Annette Shelton are the creative geniuses on this project and can be contacted through the Biology Department for more information.



Competitions are a fun and exciting way to get students involved. While it can be a real challenge for community college students to find these opportunities, the rewards can make it well worth the effort. There are already several competitions that are either already happening at SLCC or are in consideration:

•Quentin's Faculty Research Fellowship is devoted to organizing a Mars Rover team (see page 1) and fielding a competitive entry.

•The Concrete Canoe Competition provides civil engineering students the chance gain hands-on, practical experience. Students use engineering concepts to develop concrete mixes used to build and race a canoe!

•iGEM-The iGEM Competition challenges students to use synthetic biology tools to solve real world issues such as pollution. Lane Law, the InnovaBio director, is planning for a team to compete in iGEM.

To assist faculty and departments in evaluating these opportunities and organizing student work, the Research In Science Competitions (RISC) workgroup was created. This workgroup was formed to explore and support efforts to get SLCC students involved in these high profile events. If you are interested in learning more about RISC or evaluating opportunities for competition-based learning, please contact Jose Crespo in STEM Learning Resources.

Equity in Action Work Group

Social disparities for students that arrive at Salt Lake Community College are real and persistent. Whether because they are first in their families to attend college or because they come from racial, ethnic, or socioeconomic groups that do not enjoy the same privileges as others, it is an essential duty that faculty and administrators ensure an equitable opportunity for each student to have a meaningful and positive experience. Despite mounting evidence that our society has systemic inequities, it is hard for us to engage in thoughtful deliberation about actions we can take. Why? Because many of us here must confront the fact that we are products of the very same systems that are in question. Since we have been successful in these systems, we often assume that others can be equally as successful if they will just work as hard as we did. In fact, the matter is not so simple and the time has come for us to engage in conversations about how race and privilege are a real part of student success. I will be the first to tell you that I don't have any magic formula for how we do that; yet, there is that well known bit of wisdom that tells us "a journey of a thousand miles begins with a single step." In other words, we just need to start and the path will begin to unfold before us. To take that first step, I am calling together a group of faculty to start an Equity in Action Workgroup. Nancy Barrickman of the Biology department has agreed to help organize the group. My charge to the EAW is to develop opportunities for us to engage in thoughtful conversations about what we as individuals can do to make equity a core value of our work. We must start seeing all our students and appreciating the wondrous variety that they represent. Even more, imagine the wondrous power that each of you has to build a better world one student at a time. Please look for more soon about the EAW and the work they are doing and you can get involved.

New Grant Projects

-$600,000 Advanced Technology Education grant (Principal Investigator Jon Barnes, Div of Natural Science) – This is a three year grant from the National Science Foundation that will create an engineering student pipeline from Jordan School District to SLCC. The project will build a direct connection between JSD's pre-engineering program (PREP) and SLCC's Engineering Technology (ET) program. PREP has been successful in recruiting middle school students from under-served backgrounds, but it currently does not extend to high school. This project will create a dual enrollment program for high school students, allowing them to take ET courses at the Westpointe campus. Further, ET courses will be converted to a CBE format and students will receive focused career and academic advising.

-$68,000 Earth Sciences Grant (Principal Investigator Maura Hahnenberger, Geoscience dept) – this is a National Science Foundation-funded Dust in the Critical Zone Research Grant to study Dust Across a Desert-Urban-Summit Transect (DUST2) in the Great Basin and Rocky Mountain Region. The project will include collaborators from Utah State University, University of Utah, Brigham Young University, and Middlebury College in Vermont. Dr. Hahnenberger and students from SLCC will focus on measurements and modeling of dust transported in the atmosphere and its impact on air quality along the Wasatch Front. In addition to the research component, SLCC will offer a DustGirls outreach program for middle school girls.

-$1 million Science Scholarship grant (Principal Investigator Kathy Bell, Biology dept) – This is a five year grant in final stages of negotiation from the National Science Foundation. It will work hand-in-hand with the TRIO STEM grant to provide scholarships, advising support, and transfer assistance for first generation, low-income students. In addition, this grant will support the development of a new approach to getting students involved in undergraduate research projects by offering a Writing Intensive course focused on proposal development. Lane Law in the STEM Learning Resources department is planning to offer the course in Spring 2021 for the first time and needs faculty mentors that want to offer content expertise from each department. This project is expected to start serving students in Spring 2021.

Pardon Our Dust!

The third floor of the Science and Industry building is getting a much-needed makeover. The project is well underway with Phase I complete and Phase II now getting started. The full project is expected to be complete and open for business by Spring 2021. The project has done an incredible job of reconfiguring old, poorly designed rooms to create flexible, new classrooms. One of the most exciting things to come out of the remodel is a new student research lab that will be equipped and staffed to support undergraduate research projects.

Speaking of student research, InnovaBio is expanding! InnovaBio is the student research program created by the Biotechnology program. Up until now, InnovaBio only worked with students on the Jordan Campus. With the new student research lab being nearly complete in the Science and Industry building, InnovaBio will soon be available to mentor students on the Redwood campus as well. Lane Law is the new lead scientist in InnovaBio and he is actively working to develop opportunities for any students interested in research experiences. If you would like to discuss ways get students connected with this unique mentoring experience, contact Lane Law in STEM Learning Resources.

Parting Words

I was determined not to make this newsletter about Covid19…and I think I've succeeded. Many of us are adapting to the realities of a pandemic, but I want to acknowledge the many stories of fear and loneliness that have come to me in these last months. I hope this newsletter has buoyed your spirits, but I know many are still struggling. I have resisted the urge to offer glib assurances too often, but as a closing thought, I'd like to offer this memory from my graduate days. When I arrived as a freshly minted Bachelor of Science on the steps of the ivory tower, I just wasn't ready. I came from a small state college that offered a fairly classical biology program and the Biochemistry department at Texas A&M wasn't terribly patient with the likes of me. The pressure to step up or step out was high. Of all the final exams I ever took as part of my graduate experience, there is one from that first year that stands in my mind. It was in a physical biochemistry course and I was very scared…to the point of paralysis. As the clock ticked away toward the hour of doom, I was having a moment of intense self-doubt and contemplated leaving. As in really leaving. But there was a moment when I recall a voice, *my own voice*, saying inside my head that "you have never failed to find a way through a hard spot before, and you will not fail now." It was a calming moment…and one of the few times I have ever experienced that kind of intense introspective insight. Guess what…I didn't fail, and I did find a way, though the journey was long. I would ask you to reflect on the path that has brought you here to this place and this time. Friends, as you think back on your journey, give yourself some credit because there is not one that got here by being practiced in the art of failure…and I am convinced that you will not fail now. The future is bright for SME and I'm glad you are here with me.

Sincerely,

Craig Caldwell

Dean of Science, Math, and Engineering