

SCHOOL OF SCIENCE, MATHEMATICS AND ENGINEERING

Catalog of Research and Project-Based Learning

2019-2020





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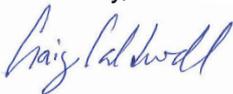
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Welcome!

Salt Lake Community College is a great place to start taking your science, math, and engineering coursework...but we have much more to offer than just the typical class experience. Take a moment to look through the opportunities described in our Project-Based Learning Catalog and you will find amazing ways to participate in research, projects, and other collaborative efforts that go far beyond the lecture hall. No matter your interest, we have something for you, including experiences in Biology, Biotechnology, Chemistry, Physics, and Engineering. I encourage you to use this guide to search for ways that you can take part in extraordinary learning opportunities that will boost your learning, confidence, and skills as you work toward your academic goals. Feel free to reach out to the faculty listed here and explore ways to enrich your educational experience at SLCC.

Sincerely,



Craig Caldwell

Dean, School of Science, Mathematics and Engineering

Biology

SLCC Genome Annotation Project

Contact:

Tim Beagley, PhD

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Rebecca Sperry

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slccgap.org

Project Description:

The Salt Lake Community College (SLCC) Genome Annotation Project is a cooperative partnership with the Department of Energy's Joint Genome Institute and the Microbial Genome Annotation Network. The project has been designed to afford SLCC students an opportunity to learn the capabilities of computational biology while reinforcing basic biological principles surrounding the central dogma of molecular biology.

Each semester SLCC students take a 50,000 nucleotide segment of the *Halogeometricum borinquense* genome and examine its contents in terms of likely protein coding genes. The students in the laboratory portion of Cell Biology (BIOL 2025) start by generating an open reading frame (ORF) map of the segment that can be called a consensus map. This consensus map becomes a scientific hypothesis regarding the location of protein coding genes in the segment. Subsequently, each student is assigned several of the ORFs to annotate and to acquire multiple lines of evidence to support or reject the hypothesis that the ORF is a protein coding gene.

To date, SLCC students have mapped and annotated 700,000 nucleotides of the four million bases in the genome. Many students have mastered the basics of computational biology and the majority of students have gained a deeper understanding of the molecular mechanisms of the cell. Additionally, numerous individual research projects have spun off from the projects, and students are currently working on these projects as independent research.

Related Course: BIOL 2025

SLCC Antibiotic Resistance Project

Contact:

Tim Beagley, PhD

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Rebecca Sperry

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slccgap.org

Project Description:

Beginning Spring Semester 2018, students in BIOL 2065 (Microbiology Lab) will be collecting soil samples along the Wasatch Front and using them to determine relative levels of bacterial resistance to certain antibiotics.

Sample locations and resistance levels will be displayed via GIS technology on a public and interactive map. Once the project gets up and running, SLCC students and others will be able to contribute to the project in a variety of ways.

Ecology & Sustainability

Contact:

Jessica Berryman

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Project Descriptions:

Independent Ecological Research: Students conduct an independent ecological research project and present it at a mock symposium in class and are encouraged to participate in the SME symposium in the spring. This class is offered in the fall.

Related Course: BIOL 2225

Sustainable Food Systems: As part of a service-learning course, students design and carry out a class term project that provides service to a local non-profit specifically oriented toward sustainable food systems.

Related Course: BIOL 1405

Field Biology: Students will camp with faculty in a field location in southern Utah and explore adjacent natural areas where they will learn the taxonomy, ecology and natural history of the local flora and fauna. The class will assess and compile an inventory of the communities and ecosystem structure of a local Wilderness Study Area for a presentation. This is part of a May term course.

Related Course: BIOL 2350

Biotechnology: InnovaBio®

General Molecular Biology & Microbiology

Contact:

Mary L. Nelson, PhD
mary.nelson@slcc.edu

Project Description:

InnovaBio® is a contract research organization (CRO) serving local biotechnology companies. Staff scientists collaborate with industry scientists to develop low priority projects. Once a project has been approved, students conduct experimental work. Please see the areas of study below.

General molecular biology: All students learn DNA manipulation techniques for working with bacterial plasmids, including transformation, DNA mini-prep, restriction digest and PCR. These techniques can be used for cloning, gene expression analysis and species identification by DNA sequencing analysis.

Microbiology: One project studies two species of bacteria from the human gut microbiome. *E. coli* is frequently used for applications from cloning, gene expression and synthetic biology. Students have prepared phage, yeast, and bacterial spores for a client company.

Protein work: Detection of proteins from mammalian and bacterial systems using western blotting. A number of projects have studied purification of proteins from *E. coli* using various methods, including solubility in various salt buffers and Fast Protein Liquid Chromatography (FPLC). Students study enzymatic assays progression using UV and visible light absorbance.

Related Course: BTEC 1080

Protein, Mammalian Cell Culture & Aquarium Water Testing

Contact:

Mary L. Nelson, PhD
mary.nelson@slcc.edu

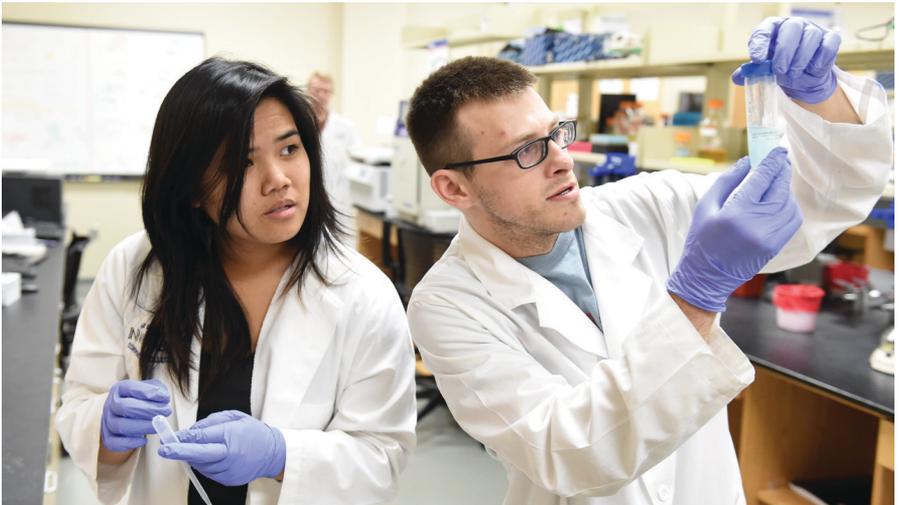
Project Description:

Cloning genes for expression in E. coli: Several projects involve work with genes needing codon optimization or purification/solubility tags. Students can test expression conditions such as temperature, OD600 for induction, various concentrations of inducer and length of time.

Mammalian cell culture: Students have grown and maintained a number of cell lines including HeLa, HEK 293, NIH 3T3, OvCar 3, CaCO etc. Projects have included techniques such as transcription regulation using a dual luciferase system, detection of proteins and cell growth on various materials.

Water quality testing for the Loveland Living Planet Aquarium: Detection assays for nitrate levels in aquarium water often generate hazardous waste. Students study a number of methods for detecting nitrates, including UV scanning, enzymatic activity and commercial kits.

Related Course: BTEC 1080



Biotechnology: STUDENTfactorED®

DNA Extraction Kits & Plasmid DNA

Contact:

Mary L. Nelson, PhD
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Project Description:

The STUDENTfactorED® enterprise is a contract manufacturing organization (CMO) on the Jordan Campus of Salt Lake Community College. Students have the opportunity to be involved at every step of the manufacturing process, from new product development, establishing manufacturing processes, quality control to packaging and shipping. The lab operates according to the STUDENTfactorED® quality manual. The goal is to be compliant with FDA regulations governing the manufacture of medical devices. Good documentation practices are key to every aspect of STUDENTfactorED® work.

Current STUDENTfactorED® Products:

Cheek cell DNA extraction kits: The kits are mainly used as a recruiting or outreach tool. This is a multi-step process where students make two products prior to assembling kits. Students follow work instruction documents and fill out batch records for quality control and traceability.

Plasmid DNA: The BTEC 1015 class has a project at the end of the semester where students are given one of three plasmids. The task is to identify which plasmid was given by restriction digest and agarose gel analysis. STUDENTfactorED students manufacture each of the plasmids, conduct quality control procedures, label and ship to customers.

Related Course: BTEC 1080

Agar Plates & Other Product Development

Contact:

Mary L. Nelson, PhD
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Project Description:

Agar plates: The SLCC Microbiology labs use a large number of agar plates throughout each semester. An automatic plate pourer facilitates quick and efficient production. STUDENTfactorED® production of plates costs less than half of commercial produced plates. Over 1,000 plates have been delivered over the 2017 spring and summer semesters.

STUDENTfactorED® product development:

Students are encouraged to develop new products. Students must document the design process.

Current products in development:

1. Low-cost DNA ladder for use in agarose gels.
2. Custom designed plasmids for developing biology/biotechnology curriculum.
3. Liquid, slant agar and deep agar culture tubes for microbiology.

The STUDENTfactorED® lab has recently acquired an Airwolf 3-D printer. We envision making materials for hands-on learning in the classroom. Engineering students may find the 3-D printer useful in design projects. Come design your own 3-D printing project.

Related Course: BTEC 1080

Health & Lifetime Activities: Fitness Technician

Senior Fitness Testing

Contact:

Chad Harbaugh
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Senior Fitness Testing

The Senior Fitness Test assesses mobility-related fitness parameters in older adults from ages 60-90 plus. The test measures physical attributes of strength, endurance, flexibility, agility and balance needed to perform everyday activities later in life. The students will learn correct testing parameters to ensure validity and reliability and interpret results to provide feedback to the participants. Participants will be older family members who volunteer to join us in the exercise physiology laboratory. In addition, the information will be utilized in the Fitness Technician Internship with Exercise is Medicine initiative through the LiveWell clinic at Intermountain Health Care.

Related Course: HLTH 2400 & HLTH 2450

Y-Balance Test & Selective Functional Movement Screening Top Tier

Contact:

Chad Harbaugh
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Y-Balance Test (upper and lower quarter)

Lower Quarter: A dynamic single-leg test that requires adequate strength, flexibility, core control and proprioception at stability and motor control limits.

Upper Quarter: A dynamic test in a single arm push-up position that puts an individual at their stability limits. This test requires core and shoulder girdle stability. Thoracic and shoulder mobility are also taken into consideration when performing this closed kinetic chain test. All quantitative data from upper and lower Y-balance testing is entered into statistical software called Move to Perform that categorizes them into categories based on limitations. Pre and post testing are performed and corrective strategies are implemented.

Related Course: HLTH 2415

Selective Functional Movement Screening Top Tier

Students analyze and perform a 12-movement pattern assessment used to gauge the status of movement, pattern-related pain and dysfunction. These movements are used to provoke symptoms and demonstrate limitations and dysfunctions. This is a pre and post assessment that is performed to allow students to see changes that may occur when awareness to spinal alignment and muscular compensation has occurred due to altered motor control or previous injury.

Related Course: HLTH 2200



Functional Movement Screening & Athletic Internship Collaboration

Contact:

Chad Harbaugh

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Functional Movement Screening

The functional movement system is comprised of seven movement tests that require a balance of mobility and stability. The movement patterns place the clients in positions where the Fitness Technician students observe weaknesses, imbalances, asymmetries and limitations. All quantitative data from the Functional Movement screening is entered into statistical software called Move to Perform that puts them into categories based on limitations. Pre and post testing are performed and corrective strategies are implemented.

Related Course: HLTH 2415

Athletic Internship Collaboration

Collaboration between the Fitness Technician Internship and the Athletic Department has been established to assess movement dysfunction utilizing the Functional Movement system and the Y-balance test on all of the athletes at Salt Lake Community College. All quantitative data from upper and lower Y-balance test is entered into statistical software called Move to Perform that categorizes them into categories based on limitations. Pre and post tests are performed and corrective strategies are implemented. Pain is also recorded to provide early detection to the Athletic Training Department.

Related Course: HLTH 2450

Odyssey House

New in the Fall 2017 internship program, the Odyssey House and the fitness technician internship class have collaborated to provide exercise prescription to individuals enrolled in the substance abuse treatment program. The students will gain hands-on experience designing and implementing exercise programs utilizing the curriculum from HLTH 2400 Special Populations.

Related Course: HLTH 2450

Natural Sciences & Engineering: Geoscience – Geology

Water Quality, Phosphorus Analysis, GIS Analysis & Scanning Electron Microscopy

Contact:

Chris Johnson

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Water Quality

Students study dissolved oxygen (DO) and total dissolved solids (TDS) levels in the Jordan River. Students collect water quality data in segments of the Jordan River to create a snapshot of the water conditions. This project is for the Utah Department of Environmental Quality and includes DO, TDS and temperature in East Canyon Creek near Kimball Junction.

Students collect water quality data on storm water runoff and the East Canyon Creek near Kimball Junction, Park City, to determine the impacts of runoff from a strip-mall development. This project is for the Summit County Engineering Dept. We need monthly monitoring.

Phosphorus in Streams and Lakes

Soon, we will be developing a program that teams up with the SLCC Chemistry Department to sample for, and analyze phosphorus in stream water such as East Canyon Creek, Utah Lake and the Jordan River. Phosphorous is one of the causes of algal blooms in surface water.

GIS Analysis of Existing Data

Geography students with an interest in Geographic Information Systems (GIS) will use ArcGIS or other free GIS software to compile existing data collected by SLCC students to make a master map used to interpret results.

Scanning Electron Microscope (SEM) of Ore Minerals

A previous student used the SEM to try to link microbial activity and low-temperature ore mineral development. Future students will learn the capabilities of the SEM, develop their own research question and test that question using the SEM.

Heavy Metals in City Creek and Little Cottonwood Creek Sediments

Contact:

Chris Johnson

chris.johnson@slcc.edu

Heavy Metals in City Creek Sediment

City Creek has high levels of some heavy metals, but their origin is not known. Students will collect stream sediment samples and analyze them in the geology lab using the x-ray fluorescence (XRF) meter. This project is for the Utah Department of Environmental Quality.

Heavy Metals in Little Cottonwood Creek Sediment

Little Cottonwood Creek has high levels of some heavy metals but the origin is unknown. Students will collect stream sediment samples and analyze them in the geology lab using the x-ray fluorescence (XRF) meter. This project is for the Utah Department of Environmental Quality.

Heavy Metals in Soil

Heavy metals in Mary Ellen Gulch, American Fork Canyon. Heavy metals are being documented in stream sediment for the tributaries to American Fork Canyon. Former mining activity has added some heavy metals to streams. Students will collect stream sediment samples and analyze them in the geology lab using the x-ray fluorescence (XRF) meter. This project is for the US Forest Service.

Heavy Metals in Your Community

Students will collect soil samples from rail trails or other public land areas in their community to determine if high levels of metals such as lead are present. This is especially important for residential communities located near existing or former industrial areas. Soil samples could be collected from residential yards with written permission from the owner.

Natural Sciences & Engineering: Geoscience – GIS

SLCC Crime Mapping, Land-Use Patterns, Building Geo Apps & Designing Story Maps

Contact:

Adam Dastrup

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SLCC Crime Mapping Project

In partnership with the Utah Highway Patrol, learn how to use drone imagery, mapping-grade GPS and geographic information systems (GIS) to create a multi-campus map that focuses on potential crime areas or safety concerns around the various campuses. These maps will be shared for use by students, faculty or staff in the form of a story map or geo app.

Analyzing Land Use Patterns Along the Wasatch Front

The Wasatch Front has grown incredibly in the last 20 years. There are several positive and negative consequences to this growth. Where is the growth occurring and at the expense of what? What impacts could this growth have on environmental pollution, transportation, disaster response, social-economic segregation or unsustainable growth? Using local data from a variety of organizations within Utah, students can analyze potential problems and solutions.

Designing Story Maps

Story Maps let you combine authoritative maps with narrative text, images and multimedia content. They make it easy to harness the power of maps and geography to tell your story.

Building Geo Apps

Learn how to combine location and narrative in one application to better communicate and broadcast your story, create custom web applications that solve problems in your community and build powerful native applications for iOS and Android devices without touching a piece of code.

United Nations Sustainable Development Goals, Mapping Natural Disasters & SLCC Campus Map

Contact:

Adam Dastrup

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United Nations Sustainable Development Goals Project

The Sustainable Development Goals (SDGs) contains 17 goals with 169 targets covering a broad range of sustainable development issues. Using data and information from the United Nations and other international organizations, students will create a research poster to analyze potential socioeconomic and environmental causes of poverty and inequity and potential solutions.

Mapping Natural Disasters

Students can focus on using geospatial technology such as satellite imagery and geographic information systems (GIS) to study any number of natural disasters. Students will focus on earthquake risk potential along the Wasatch Front or recent impacts from disasters such as tsunamis, hurricanes, flooding, climate change or disease.

SLCC Campus Map Project

Learn how to use drone imagery, mapping-grade GPS and geographic information systems (GIS) to create a multi-campus map that could be used by the institution. These maps will be made available for use by students, faculty or staff in the form of a story map or geo app.

Natural Sciences & Engineering: Atmospheric Science

Mountain Weather, Climate Research & WaterGirls Outreach Program Mentors

Contact:

Maura Hahnenberger
maura.hahnenberger@slcc.edu

Mountain Weather & Climate Research

The coursework for ATMO 2200: Mountain Weather & Climate incorporates a significant portion of the coursework from undergraduate research.

Related course: ATMO 2200

WaterGirls Outreach Program Mentors

Students may act as a mentor and role model for the WaterGirls outreach program. WaterGirls is a field experience program dealing with water science for middle school girls.

More details regarding the WaterGirls program can be found at iutahwatergirls.weebly.com



Natural Sciences & Engineering: Chemistry

Measuring Learning Outcomes in Chemistry Outreach in K-6 Elementary School Students

Contact:

Ron Valcarce

ron.valcarce@slcc.edu

Elemental Expeditions is a chemistry outreach program that was created at Salt Lake Community College to provide hands-on chemistry learning to underserved schools in the Salt Lake City area. Through the use of written and pictorial assessment, we measured the change in science-based informational knowledge and perception in K-6 students. Our assessment tool was administered pre and post classroom presentation, and the change in responses was measured.



Synthesis and spectroscopic/spectrometric analysis of the pharmaceutical phenytoin demonstrating the pinacol rearrangement

Contact:

Ron Valcarce
ron.valcarce@slcc.edu

The purpose of this research project was to develop an undergraduate organic laboratory procedure to provide a demonstrable example of the Pinacol rearrangement. The chemical synthesized in this experiment is Phenytoin, an anticonvulsant drug that was first synthesized in 1908 by the Biltz synthesis¹. This synthesis involves base catalyzed addition of urea to benzil followed by Pinacol rearrangement to form Phenytoin. This is an ideal synthesis for demonstrating the Pinacol rearrangement at the undergraduate level, since the starting materials are readily accessible, the synthesis can be achieved and product isolated within a three to four hour time frame, and the product is easily characterized using Fourier transform infrared spectroscopy (FTIR).

A Green Chemistry Lip Balm Demonstration using Renewable, Biodegradable Materials

Contact:

Ron Valcarce
ron.valcarce@slcc.edu

The goal of this project is to develop a demonstration to introduce students to Green Chemistry by creating a lip balm using renewable, biodegradable materials which do not persist in the environment. This Green Chemistry Demonstration is relatively fast, creates a product that most students use or are familiar with and demonstrates two of the 12 principles of green chemistry, #1. Prevent Waste and #10. Design for Degradation.

Nitrate in Aquarium Waters & Fluoride in Water, Drinks and Commercial Products

Contact:

Peter Iles, PhD
peter.iles@slcc.edu

Rajan Kochambili
rajan.kochambili@slcc.edu

Overall project has two approaches:

1. Chemical reduction of nitrate to nitrite for colorimetric measurement with online SIA instrument: Supervisors Dr. Peter Iles and Dr. Rajan Kochambilli.
2. Biotechnological reduction via nitrate-reducing enzymes. Collaborative supervision between biotech and chemistry. This work will involve a number of specific projects studying the choice of enzyme, speed of reactions and parameters such as temperature, ionic strength and others.

Pharmaceuticals in the Jordan River

Contact:

Luther Giddings, PhD
lu.giddings@slcc.edu

Project Description:

Contact Luther Giddings for additional details regarding this project.



Natural Sciences & Engineering: Engineering

Professional Conferences & Societies, Internships & Research Projects

Contact:

Nick Safai

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International Research Project

In collaboration with a student from China, we study the amount of phosphates in the Zhejiang River (China, Shanghai Region) and its environmental or other impacts on rural and urban areas. In collaboration with international faculty and students work is being conducted titled: Should “Python for Engineers” be a Course Taught to Freshmen Engineering Majors in USA and Abroad? This study has been accepted for publication in the American Society for Engineering Education (ASEE) 2019 Annual Conference proceeding, and to be presented at the ASEE Annual Conference in June 2019 in Tampa, Florida.

Rocky Mountain Regional Conference (RMRC)

Students and Nick Safai are participating at the RMRC hosted by University of Colorado Boulder from April 4th to April 7th, where they experience and observe Concrete Canoe races at Boulder Reservoir, and other civil engineering and related projects at the University of Colorado recreation center lower gym, large ice overlook, upper court conference room, etc. Preparing students for entering projects in 2018 Rocky Mountain Regional Conference (RMRC). This is a four-day (Thursday-Sunday) event usually held the last week in March each year. Categories include steel bridge competition, concrete canoe races, mystery design, technical papers, etc. Students and Nick Safai participate and submit any paper or other related work.

American Society of Civil Engineers Wasatch Branch Speaker Luncheon

The ASCE organizes and brings speakers under Nick Safai’s direction. This is usually held in the Oak Room in the Student Center (STC) in Oct. or Nov. (if in fall) or March (if in spring). This event has been organized annually at SLCC for the past several years.

Professional Conferences & Societies, Internships & Research Projects

Contact:

Nick Safai
nick.safai@slcc.edu

American Society for Engineering Education

The ASEE club has sponsored a guest speaker from NASA. The speaker is an electronics engineer there, which provided the students a great opportunity to ask questions, learn and connect. The ASEE Club organizes various tours, the last of which consists of a tour of secured areas of Hill Air Force Base. Participants are guided through HAFB secured areas under the supervision of their chief engineers.

Society of Women Engineers

Some of the recent events for the SWE club include; recently visited IM Flash, the largest exporter of domestic product “besides metals” in Utah, Egg Drop contest also firing of the test rocket at ATK. The SWE organizes various tours, the last of which are trips to observe the firing of a test rocket at the ATK Orbital test site and a tour of the Rocket Garden in Tremonton, Utah.

Special-Topic Projects

Students recent topics of research and study has been accepted for presentation at the engineering annual conference in Tampa, Florida in June 2019: the topics include: Project Based Learning for a Mechanical Engineering Major Student: The Sustainability of Internal Combustion Engines , and A Sophomore’s Interdisciplinary Engineering Project Enhancing Learning and Engineering Education with International Applications and Markets Abroad
Civil and mechanical engineering students may engage in special-topic projects, which are determined at the beginning of each semester and focus on a student’s areas of interest.

Internships and Industry Projects

Students currently working or seeking internships in an industry may contact Nick Safai. This is a continuing project and includes research activity each semester.

Natural Sciences & Engineering: Physics – Astronomy

Planetarium programming, instructional design and astronomy outreach

Contact:

Janalee Harrison

janalee.harrison@slcc.edu

Students will participate in the development of planetarium shows designed to teach specific topics in astronomy, astrophysics, cosmology, planetary and Earth sciences. Shows are designed for a specific audience that can be based on an age range from kindergarten to adult and/or accessibility by disability. Students may participate by developing educational content, designing/presenting a show, programming the planetarium computer, automation script programming and/or multimedia development. Students will work with our Digitalis portable planetarium system.

Undergraduate Research in Astronomy

Contact:

Jonathan Barnes

jonathan.barnes@slcc.edu

Students can use real astronomy data to explore the nature of stars and other astronomical phenomenon. Areas of interest include variable stars, star clusters, big data, and stellar spectroscopy.

Mathematics

Learn a new language: Mathematics

Contacts:

Shayne Vargo
(general mathematics)

Shayne.Vargo@slcc.edu

Elizabeth Jones
(statistics)

Elizabeth.Jones@slcc.edu

The Math Department strives to expose students to the plethora of applications of mathematics in other fields, such as physics, chemistry, engineering, geology, astronomy, economics, etc. But the list of areas to explore directly within mathematics itself countably infinite, with many potential research ideas. Here is a tiny sample of possible topics of interest.

Proofs: Have you ever wondered where some of the theorems in your math classes come from? How do we know they are true? Explore the history, assumptions, lemmas, and mathematics that are involved with their proofs.

Non-Euclidean Geometries: Are there really 180° in a triangle? Could parallel lines meet? Does the fate of the universe depend on such ideas? Explore how Geometry would work if Euclid's fifth postulate is false.

Coding Theory and Cryptography: Discover how to become a spy and create/crack secret messages or how binary codes transfer information over channels. See how matrices can be used to encode and encrypt.

Chaos Theory: Is the universe chaotic? Explore the mathematical meaning behind the "butterfly effect." Investigate the simultaneously fractal and chaotic behavior of the Mandelbrot and other famous sets.

Prime Number Theory: For thousands of years, mathematicians have sought a pattern to the prime numbers. Explore the Riemann Hypothesis, the Twin Prime Conjecture, the Goldbach Conjecture, and other mysteries behind these notorious numbers.

Statistical Research: Do you have your own theories about human behavior or want to explore a social phenomenon that can be measured quantitatively? Collect and analyze your own data to support your hypothesis.

Do you have any ideas of your own you would like to investigate? Come discuss them with us!

Join the SLCC

Student Math League

for review and **competition!**

The Competition

Each semester dozens of students compete in a one-hour AMATYC Student Math League competition for monetary prizes and scholarships to four year schools. The format is an our-long session of solving non-traditional math problems. Problems are from intermediate algebra through trigonometry with some probability. There is no cost to students!

The Preparation:

Gather with your friends to work on your problem solving and algebra skills. You will be coached in a very relaxed environment by an SLCC Math Faculty.

For more information contact:

Spencer Bartholomew

spencer.bartholomew@slcc.edu

For rules and eligibility, see:

amatyc.site-ym.com/page/SMLRules



Come participate in challenging yourself, add extra-curricular activity to your resume and meet other students who also have a passion for math.

The competitions are based on pre-calculus level mathematics and there are individual and team prizes and the first place individual in the nation wins a scholarship to be used at a four-year college!



SLCC Student Math League is sponsored by the American Mathematical Association of Two Year Colleges.

Other Resources: SME Symposium

SME Symposium

Contact:

801-957-4852

symposium@slcc.edu

The SME Symposium provides an immersive experience for students pursuing science and technology related disciplines by providing the opportunity to refine presentation skills, receive valuable feedback, and connect with SLCC faculty, staff and peers in a conference environment.

This annual day-long event hosts industry guests, department tables and guest speakers from STEM-related fields, providing participants the opportunity to learn about pursuing a career in science, engineering or mathematics. The event is open to all SLCC students, staff, faculty and the public.

Visit slcc.edu/STEM/symposium for more information.



Other Resources: Learning Support Services

TRIO STEM

The purpose of the SLCC TRIO STEM Program is to support low-income and first-generation college students pursuing degrees in science, technology, engineering and mathematics by addressing individualized educational and career interests while providing the opportunities, tools and resources for self-efficacy.



TRIO STEM Locations

Rooms SI 358B and CT 238
 801-957-4467
trio.stem@slcc.edu
slcc.edu/trio/stem

SLCC offers free STEM-focused support services to those who want to improve and better their grades.

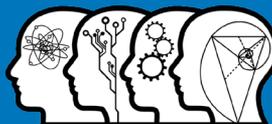
STEM Learning Resources offers:

- **Workshops**
- **Free Walk-In Tutoring**
- **Project-Based Learning**
- **Computer Stations**
- **Study Space**

*Resources available at all campuses.
 Call or email us for additional information:*



www.slcc.edu/STEM
STEMlearning@slcc.edu
 801-957-69800



STEM LEARNING RESOURCES

Other Resources: Clubs & Organizations

slcc.edu/sll/clubs-and-orgs

American

Chemical Society

President: Glen Johnson

Faculty Contact:

Ron Valcarce

ron.valcarce@slcc.edu

American Society of Civil Engineers

President: Ezat Arif

Faculty Contact:

Nick Safai

nick.safai@slcc.edu

American Society of Engineering Education

President: Cyrus Safai
and Shaun Mckellar

Faculty Contact:

Nick Safai

nick.safai@slcc.edu

Astronomy Club

Faculty Contact:

Janalee Harrison

janalee.harrison@slcc.edu

Bruin Robotics Club

President: Lucas Salas

Faculty Contact:

Quentin McRae

quentin.mcrae@slcc.edu

SLCC Drone Club

President: Changes yearly

Faculty Contact:

Adam Dastrup

adam.dastrup@slcc.edu

Environmental Club

President: Belinda
Madsen

Faculty Contact:

Jessica Berryman

jessica.berryman@slcc.edu

Pre Medical Professionals

President: Sahra Grosser

Faculty Contact:

Ron Valcarce

ron.valcarce@slcc.edu

Pre Pharmacy Info Learning Society

President: Loan Chuynh

Faculty Contact:

Ron Valcarce

ron.valcarce@slcc.edu

Nano Club

President: Aubrey Lines

Faculty Contact:

Wesley Sanders

wesley.sanders@slcc.edu

SLCC Anatomy & Physiology

Advisor:

Jeff Huffman

jeff.huffman@slcc.edu

Society of Women Engineers

President: Terra Ramey

Faculty Contact:

Nick Safai

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Students for the Exploration & Development of Space

Faculty Contact:

David Schaffer

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