







Kamehameha the Great's statue is draped in huge flower leis each June in a special ceremony followed by an annual parade and celebrations of his life.

King Kamehameha I is credited with uniting the Hawai'ian Islands. He was born on Hawai'i (the Big Island) in 1734 and reigned from 1782 until 1819 when he died in his 83rd year. He was buried in a location which remains secret until today. His name means 'The Lonely One' and he is renowned for his superhuman feats of strength.

After brutal battles on Maui and Oahu's Nu'uanu Valley and Pali, a great fort, the Pu'ukohola Heiau was built on the island of Hawaii in commemoration of Kamehameha's conquest of the islands. Later, in 1810 the island of Kauai became a part of the unified Hawai'ian Islands through an agreement with their king, Kaumuali'i.

The statue of Kamehameha the Great in Honolulu is one of four statues commemorating him. Two others are on the island of Hawaii and the fourth is in Washington D.C. in the Capitol's National Statuary Hall.

If you have the opportunity to drive up Kamehameha Highway (The Pali), at the windy summit you will learn the story of the great battle for Oahu. You will see the cliffs over which the defenders of Oahu were driven in defeat. It is a piece of living history that relates the story of King Kamehameha's conquest of the islands which led to a strong unified kingdom that remained until the overthrow by US troops which led to a conditional surrender on January 17, 1893 under Her Majesty, Queen Liliuokalani.

Welcome Address

Ioha and welcome to the annual Science, Technology & Engineering, Arts, Mathematics and Education Conference held at the Prince Waikiki Resort on the island of Oahu. We trust that you will gain new experiences and new insights in your field of study while interacting with your peers. This is an exciting opportunity to meet with educators from different universities throughout the nation and throughout the world. They bring with them a wealth of knowledge and experience in their particular disciplines to share with each and every one.

e hope you enjoy your stay with our host, the Prince Waikiki Resort, located a block from the Ala Moana Shopping Center offering a wide variety of shops and attractions. The famous Waikiki Beach and prime restaurants are close by for your convenience. Be sure to check with the hotel's activity desk for all the latest adventures and tours to make your trip to the Hawaiian Islands a memorable experience.

The Islands of Hawaii offer a very unique experience for all people who visit to gain a better understanding of the Hawaiian culture and its spirit only found in these islands. Enjoy some of the best weather and beaches found anywhere in the world, and take your experiences home with you to return another day.

E' Komo Maí!

(All are welcome!)



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Conference Schedule

Registration Hours

June 07 - Tuesday - 3rd. Floor	12:00pm - 5:00pm
June 08 - Wednesday - 3rd. Floor	6:30am - 4:00pm
June 09 - Thursday - 3rd. Floor	6:30am - 4:00pm
June 10 - Friday - 3rd. Floor	11:30am - 1:30pm

KEYNOTE SPEAKER'S ADDRESS

June 09, Thursday: 7:15am - 7:45am, Naio Room

Dr. Leo Stocco is Professor of Electrical & Computer Engineering at University of British Columbia in Vancouver, British Columbia, Canada.

CONCURRENT SESSION TIMES 8:15 - 9:45am * 10:00am - 11:30am * 12:45 - 2:15pm * 2:30 - 4:00pm *

POSTER EXHIBITS June 09, Thursday: 11:00am - 12:30pm, Naio Room

BREAKFAST - Naio Room (Breakfast is complimentary for registered participants)

June 08 - Wednesday	6:30am - 8:30am
June 09 - Thursday	6:30am - 8:30am

TEA BREAK - Naio Room Wednesday & Thursday - 10:30am - 12:30pm

LUNCH BREAK 11:30am - 12:30pm (LUNCH IS NOT PROVIDED)

APPRECIATION LUNCH - Naio Room June 10, Friday: 11:30am - 1:30pm (Complimentary for Registered Participants)

SESSION CHAIRS (Instructions)

- Introduction of Participants.
- Start and complete sessions on time.
- Chair leads the discussions and holds question and answer period at the end of each session.

Palolo 1
8:15 - 9:45am
Science Education, Service Learning, K-12 STEAM Education, Museum
Education and Outreach; Interdisciplinary Areas of Sciences, Biology;
Educational Resources in Pre-K, Self-efficacy; Parental Involvement;
Communication; Renewable and Non-renewable Conventional Energy
Sources

Session Chair: Dr. Allison Wiedemeier

I. DRAWN to Biology

Authors present information on a service learning project that links Biology students, Art students and museum patrons. The students were brought together to learn from each other and produce an art display to benefit the University of Louisiana Monroe's Museum of Natural History STEAM room. Pre- and post-COVID lesson plans will be presented. Qualitative effects and motivational benefits will be discussed. The observed impact art has had on museum visitors will also be covered.

- Q: Can this method be applied to other science classes?
- A: Yes! Not only can you use visual art with other disciplines, but it can also be extended to different types of artistic expression such as creative writing, poetry, or photography.

Authors/Presenters:



Dr. Allison Wiedemeier

Biology Department School of Sciences University of Louisiana Monroe Monroe, Louisiana



Dr. Kim Marie Tolson Biology Department School of Sciences University of Louisiana Monroe Monroe, Louisiana

Room:	Palolo 1
Time:	8:15 - 9:45am
Session: Science Education, Service Learning, K-12 STE Education and Outreach; Interdisciplinary Are Educational Resources in Pre-K, Self-efficacy; Communication; Renewable and Non-renewabl Sources	Science Education, Service Learning, K-12 STEAM Education, Museum
	Education and Outreach; Interdisciplinary Areas of Sciences, Biology;
	Educational Resources in Pre-K, Self-efficacy; Parental Involvement;
	Communication; Renewable and Non-renewable Conventional Energy
	Sources

Session Chair: Dr. Allison Wiedemeier

II. Educational Efficacy for Preschool Parents in the time of COVID-19

The purpose of the present study was to explore two specific aims: First, the study examines the role of self-efficacy in educational involvement during COVID-19; and second, the study examines the impact of perceived resources on parental efficacy and involvement during COVID-19. Parents of pre-K students reported on their perception of the educational program's resources and their own involvement and feelings of self-efficacy towards their child's education.

- Q: In times of adversity, what happens to educational resources, parental self-efficacy, and involvement?
- A: Results indicate that resources, self-efficacy, and involvement were challenged by the pandemic.

Authors/Presenters:Dr. Angela Kurth
Department of Psychology
College of Arts and Sciences
University of St. Thomas
St. Paul, Minnesota
Dr. Audra Nuru
Communication Studies and Family Studies
University of St. Thomas
St. Paul, Minnesota



Hawaii University International Conferences

Palolo 1
8:15 - 9:45am
Science Education, Service Learning, K-12 STEAM Education, Museum
Education and Outreach; Interdisciplinary Areas of Sciences, Biology;
Educational Resources in Pre-K, Self-efficacy; Parental Involvement;
Communication; Renewable and Non-renewable Conventional Energy
Sources

Session Chair: Dr. Allison Wiedemeier

III. Online Educational Experiences with "Clean Energy: Hydrogen/Fuel Cells"

This K-12 online educational program covered: Global Warming; Clean Energy Sources; Hydrogen as a Fuel and an Energy Carrier; Fundamentals of Electrochemistry; Electricity Generation using Fuel Cells; Fuel Cell Construction; Hydrogen Properties, Storage, and Production; and Hydrogen Infrastructure. Four online Zoom meetings demonstrated laboratory experiments including: Fuel Cell Construction; Electricity Generation with Hydrogen/Oxygen Fuel Cells; and Solar Electrolysis of Water.

- Q: Besides online training, how else did you interact with the High School teachers?
- A: We also assisted them with incorporating these materials into their High School curriculum.

Authors/Presenters:

Dr. Alla Bailey Dr. Gerald Takacs School of Chemistry & Materials Science Rochester Institute of Technology Rochester, New York



Dr. Alla Bailey



It's to be an invited of

Room:	Palolo 2
Time:	8:15 - 9:45am
Session:	Insurance Mathematics; Science Education and Spatial Computational
	Thinking; Earth and Environmental Science
Session Chair:	Prof. Krzysztof M. Ostaszewski

I. A New Design of Premium Payments and Insurance Benefits in Various Forms of Life Insurance Designed to Protect the Insurer Against Adverse Selection In this paper, we discuss ways to mitigate adverse selection in life insurance with alternative policy designs, which involve different arrangements of premium payments and various benefits. We focus on three types of life insurance: term or whole life insurance, life annuity, and endowment insurance. We propose some improvements in product designs, which are expected to reduce adverse selection. Among them are annually increasing benefit for life insurance with level premium, annually decreasing benefit for life annuity paid with single premium, and endowment insurance with premium refund.

Q: What is adverse selection in life insurance?

A: Risky customers choosing to buy insurance, and not risky customers choosing not to.

Authors/Presenters: **Prof. Hong Mao** Shanghai Second Polytechnic University Pu Dong Xin Qu, Shang Hai Shi People's Republic of China Prof. Krzysztof M. Ostaszewski Department of Mathematics Illinois State University Bloomington, Illinois **Prof. Jin Wang** Department of Information Safety Illinois State University Bloomington, Illinois Prof. Zhongkai Wen **Computer Science Department** University of Illinios Chicago Chicago, Illinois



Prof. Krzysztof M. Ostaszewski

Wednesday - June 08, 2022

Room:	Palolo 2
Time:	8:15 - 9:45am
Session:	Insurance Mathematics; Science Education and Spatial Computational
	Thinking; Earth and Environmental Science
Session Chair:	Prof. Krzysztof M. Ostaszewski

II. Preparing Teachers to Teach Spatial Computational Thinking with IDV Visualization of Weather Data

Funded by the NSF STEM+C program, the 3D Weather project developed instructional modules of using IDV visualization of weather data to help middle and high school students to develop spatial computational thinking. This paper reports the research on the professional development provided to 17 teachers by the 3D Weather project in the second project year.

Q: What is spatial computational thinking?

A: It's computational thinking that relies on the ability to think spatially.

Authors/Presenters: Dr. Yan Sun

Dr. Jamie Dyer Instructional Systems and Workforce Development Mississippi State University Mississippi State, Mississippi Mr. Jonathan Harris Dr. Jean Mohammadi-Aragh Northern Gulf Institute Mississippi State, Mississippi



Hawaii University International Conferences

Room:	Palolo 2
Time:	8:15 - 9:45am
Session:	Insurance Mathematics; Science Education and Spatial Computational
	Thinking; Earth and Environmental Science
Session Chair:	Prof. Krzysztof M. Ostaszewski

III. Developing Cross-Curricula Activities for Remote Teaching of Earth and Environmental Science with Primary Sources from the Library of Congress

STEM curriculum benefits from including primary source analysis. The approach integrates science and society studies, engages students in active learning and inquiry, develops critical thinking, advances spatial skills by investigating the real-world situations, as well as it accommodates various learning styles and provides multiple perspectives by utilizing sources of different formats. Teaching with primary sources provides opportunities for both teamwork and individual research where students form opinions and construct statements while connecting primary source evidence, such as the COVID pandemic impact on the environment. Cross-curricular connections and discussions flourish when science and social studies students investigate together the evidence and impacts of climate change and/or water pollution on legislation and society.

The Library of Congress primary sources collection is colossal and diverse. Teachers must have professional development opportunities to learn how to use primary sources effectively in teaching science. The University of Colorado at Colorado Springs team developed and conducted the Remote Teaching Earth and Environmental Science with Primary Sources workshop, which is now incorporated as a stand-alone course into the Douglas County School District professional development system for future use. The course laid the foundation of educational resources that can be used in both face-to-face and online or remote settings. The workshop participants have developed lesson plans which integrated primary source analysis and continue to educate students and disseminate information to their colleagues about primary sources and LOC resources. Overall, teaching with primary sources increases the satisfaction of both learners and their teachers.

Author/Presenter:



Prof. Irina Kopteva Department of Geography & Environmental Studies University of Colorado, Colorado Springs Colorado Springs, Colorado



Wednesday - June 08, 2022

Room:Palolo 4Time:8:15 - 9:45amSession:EdTech and Teacher Education; Anti-bias Game-Based Simulations

WORKSHOP

Exploring Bias Using Game-Based Simulations

Teacher identity is examined through game-based simulations that help to promote the intellectual understanding of how structural racism operates in organizations. From this work teachers can explore ways to (a) promote awareness of (conscious and unconscious) racial bias, (b) create opportunities for discourse around systemic racism and the impact on students of all racial identity groups, (c) evaluate their own approaches to teaching and learning.

- Q: How might digital narratives help educators/students uncover their own identities and understand diverse perspectives?
- A: Game-based Simulations have the potential to transform and expand traditional instructional practices beyond basic competencies by providing a platform for learners to experience situations and scenarios in a gaming context. Bringing experiences back into discussions centered around racism can help promote dialogue on the impact of applying knowledge to new situations, analyzing information, communication, collaboration, and problem solving.

Author/Presenter:



Dr. Heidi Meister Curriculum & Instruction Portland State University Portland, Oregon

Wednesday - June 08, 2022

Room:	Palolo 1
Time:	10:00 - 12:00pm
Session: E S T I	Educational Administration; Arts Education, Science Education, Physical
	Sciences, Environmental Science, Natural Resources and Environmental,
	Theatre; Ethnic studies; Women's Studies, Higher Education; English;
	Inter-disciplinary and other Areas of Arts and Humanities

Session Chair: Dr. Denver Fowler

I. Leading for Equity, Equality, Social Justice, Inclusion, and Multiculturalism in Schools

In this presentation, building on the extant literature, the presenter will discuss how school leaders can successfully lead for equity, equality, social justice, inclusion, and multiculturalism in schools.

- Q: What is leading for equity in schools?
- A: Leading in such a way that you provide each and every student with the resources they need to succeed and reach their full potential.

Author/Presenter:



Dr. Denver Fowler Educational Leadership & Policy Studies Southern Connecticut State University New Haven, Connecticut

II. Performing Arts as an Integrated Method for Teaching STE(A)M Concepts to Middle and High School Students

Successfully pairing performing arts with STEM (STEAM) subjects to engage students in the topics of Marine Science, Ecology, and Climate Change at the Middle and High School level.

Q: Can the Performing Arts be used to promote awareness in STEM fields?

A: Yes.

Authors/Presenters:

Mr. Jonathan Harris Northern Gulf Institute Mississippi State University Starkville, Mississippi Mrs. Tonya Hays Department of Communication, Theatre Mississippi State University Starkville, Mississippi



Room:	Palolo 1
Time:	10:00 - 12:00pm
Session:	Educational Administration; Arts Education, Science Education, Physical
	Sciences, Environmental Science, Natural Resources and Environmental,
	Theatre; Ethnic studies; Women's Studies, Higher Education; English;
	Inter-disciplinary and other Areas of Arts and Humanities

Session Chair: Dr. Denver Fowler

III. Breaking the Glass/Bamboo Ceiling: Voices of Women of Color Community College CEOs

In a 2021 study, Minority Community College CEOs Perceptions of Underrepresentation, Preparation and Ascension to the Presidency, 34 currently serving and/or emeritus African American, Asian Pacific Islander and Latino/Hispanic CEOs were interviewed —12 of the CEO participants reflect Women representing diverse ethnicities, including African American, Asian Pacific Islander and Latino/Hispanic. Voices of these Women of color (WOC) emerged including 3 chancellors and 9 presidents.

Q: How do participants describe the underrepresentation of minorities among the ranks of community college presidents?

A: A gender disparity persists for women of color in the community college presidency.

Author/Presenter:



Dr. CharMaine Y. Hines Wayne County Community College District Detroit, Michigan



Hawaii University International Conferences

Room:	Palolo 1
Time:	10:00 - 12:00pm
Session:	Educational Administration; Arts Education, Science Education, Physical
	Sciences, Environmental Science, Natural Resources and Environmental,
	Theatre; Ethnic studies; Women's Studies, Higher Education; English;
	Inter-disciplinary and other Areas of Arts and Humanities

Session Chair: Dr. Denver Fowler

IV. Using Mindful Self-Compassion to Help Students Develop a Growth Mindset About Writing

To help students experience writing as a complex, reflexive activity, Mindful Self Compassion (MFC) is a noteworthy tool. MFC fosters a "growth mindset": a recognition that intelligence is not fixed but dynamic, and can enhance intrinsic motivation related to mastery. MSC can foster curiosity, rather than self-judgment; this component of growth mindset is transferable, helping students when struggling with other academic (and life) challenges, increasing their resilience when goals are not met.

- Q: What role does confidence play in students developing their writing skills?
- A: Students who do not feel confident, typically have a fixed mindset about their ability to develop their writing skills. They tend to believe they were born not being able to write well. Mindful Self-Compassion helps students realize they may not be competent writers--YET--but by replacing self-criticism that reinforces their lack of skill, with an attitude of curiosity and willingness to learn, they can learn strategies that will help them not only become more confident writers, but also come to enjoy the process.

Author/Presenter: **Dr. Elaine Handley** Department of Arts and Humanities SUNY Empire State College Saratoga Springs, New York



Room:	Palolo 2
Time:	10:00 - 11:30am
Session:	Discrete Mathematics, Mathematics, Artificial Intelligence, Computer
	Science; Ready Workforce; Machine Learning, Time Series
	Classification using Deep Learning Models, Time Series classification
	with Deep Learning

Session Chair: Dr. Hong Biao Zeng

I. On k-Cordial Labeling

In this paper we introduce a concept so called k-cordial labeling to generalize the concept of cordial labeling. We establish the connection between k-cordial labeling and Fibonacci cordial labeling. We propose a faster brute force search algorithm to check the existence of Fibonacci cordial labeling. Finally, we extend the results to Tribonacci cordial labeling.

Q: What is the main application for a k-cordial labeling?

A: Improve the running time to search for a Fibonacci/Tribonacci cordial labeling

Author/Presenter:	Dr. Hong Biao Zeng
	Department of Computer Science
	Fort Hays State University
	Hays, Kansas

II. Theory of Change to Build and Accelerate an Artificial Intelligence Ready Workforce

Given the speed of technology adoption in most sectors within the past few years, the suggested timeframe for impactful workforce adoption over the next two decades appears to be slow. We propose six (6) levels of Theory of Actions based on the Theory of Change. Our goals are to ignite a transformative culture that includes the following proposed goals: Student Preparation, Building Faculty Capacity, Community Partnership Building, College and Career Readiness as an Integral Component of K-12.

Q: How to build and accelerate an Artificial Intelligence Ready Workforce currriculum?

A: Collaboration with school district, community colleges, university and corporation.

Author/Presenter:	Dr. Ahmed Hambaba
	Interdisciplinary Engineering Program (IDE)
	San Jose State University
	San Jose, California

Hawaii University International Conferences

Wednesday - June 08, 2022

Room:	Palolo 2
Time:	10:00 - 11:30am
Session:	Discrete Mathematics, Mathematics, Artificial Intelligence, Computer
	Science; Ready Workforce; Machine Learning, Time Series
	Classification using Deep Learning Models, Time Series classification
	with Deep Learning

Session Chair: Dr. Hong Biao Zeng

III. Time Series Classification Using Deep Learning Models

Time series classification (TSC) can be implemented with many techniques. Several of these techniques is based on analyzing 1-D signals in the time series data. In this work, we implement a new time series classification which involves a two-stage process.

Q: Are multistage modeling of time series effective ?

A: Yes. They are very effective compared to other traditional classification frameworks.

Authors/Presenters:Dr. Maria C Mariani
Mr. James Arthur
Mathematical Sciences, Computational Science
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Dr. Osei Tweneboah
Department of Data Science
Ramapo College of New Jersey
Ramapo, New Jersey



Wednesday - June 08, 2022

Room:	Palolo 4
Time:	10:00 - 12:00pm
Session:	Elementary and Secondary Education; Art Education

WORKSHOP

I. Ethical Teacher Candidate Support for High Stakes Licensure Assessment

How can we support and mentor teacher education candidates within ethical guidelines for high stakes consequential assessments, i.e., the edTPA? This discussion will include: creating formative experiences, connecting fieldwork and coursework experiences, building strategies for organizing portfolios, graphic organizers, and retake counseling. You will be provided supports for your candidates who are taking the edTPA.

- Q: What are tangible ways to support candidates with high stakes assessments?
- A: In this session, we will discuss pragmatic ways to support teacher candidates through the high stakes assessment process. We will provide supports and graphic organizers for EPPs and candidates.

Authors/Presenters:



Dr. Cherylynn Jody Moody Department of Teaching and Learning Texas A&M San Antonio San Antonio, Texas



Mrs. Nadja Conway Department of Teaching and Learning Loyola Marymount University Los Angeles, California

Wednesday - June 08, 2022

Room:	Palolo 4
Time:	10:00 - 12:00pm
Session:	Elementary and Secondary Education; Art Education

WORKSHOP

II. Art Integration: Embracing Diversity and Social Emotional Learning in the Elementary Classroom

In this workshop, we will demonstrate and apply the connection between visual art integration, culturally diverse students, Universal Design for Learning, and social and emotional learning in the elementary classroom. You will be provided with powerful tools that you will be able to immediately apply in the elementary classroom.

- Q: What are pragmatic ways elementary teachers can engage diverse students in the arts and core content?
- A: In our workshop session, we will unpack and demonstrate meaningful ways to engage, excite and represent diverse students in the elementary classroom through art integration.

Authors/Presenters:Dr. Cherylynn Jody Moody
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Dr. Suzanne Mudge
Department of Counseling, Health and Kinesiology
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Mrs. Nadja Conway
Department of Teaching and Learning
Loyola Marymount University
Los Angeles, California



Dr. Cherylynn Jody Moody



Mrs. Nadja Conway

Wednesday - June 08, 2022

Room:Naio RoomTime:10:00 - 11:30amSession:STEM and Project-Based Learning; 2nd-6th Grade General Science;
Engineering Design Process; Many could be implemented depending on
the PBL being executed

WORKSHOP

Teaching Inquiry, Problem-solving, and Collaborative Skills through Project-Based Learning and STEM

Project-Based Learning and STEM are excellent platforms for helping students to develop 21st century skills such as problem-solving, learning from failure, giving and receiving feedback, collaboration, and leadership. In this session, participants will engage in a mini-PBL that will familiarize them with the benefits of implementing high quality STEM and PBL lessons, and how to execute them in their own classrooms.

- Q: What is the purpose of implementing Project-Based Learning and STEM into the classroom?
- A: *PBL and STEM engages students and compels them to take ownership of their own learning in a real-world context. It improves retention of content knowledge and helps them to build important 21st century skills including collaboration, problem-solving, learning from failure, communication, and creativity.*

Authors/Presenters:



Ms. Jenn Stormer TGR Foundation Northmont City Schools Irvine, California



Ms. Melissa Moser Oxnard School District Oxnard, California

Hawaii University International Conferences

Wednesday - June 08, 2022

Room:Palolo 1Time:12:45 - 2:15pmSession:Educational Foundations; Information Technology; Service-learning
Engineering ProgramSession Chair:Dr. Leo Stocco

I. DOCU-SHOW - A Modern Way to Present Results

A replacement for the "formal report" is presented which may be used in project courses or research assignments. It combines detailed descriptions with uncluttered presentation slides so that both the final report and final presentation are integrated into a single document.

- Q: What is the biggest benefit of this format?
- A: Reports are less formal and more interesting to read AND write.

Author/Presenter:



Dr. Leo Stocco Department of Electrical & Computer Engineering University of British Columbia Vancouver, British Columbia Canada



Continued on next page

Hawaii University International Conferences

Room:	Palolo 1
Time:	12:45 - 2:15pm
Session:	Educational Foundations; Information Technology; Service-learning
	Engineering Program
Session Chair:	Dr. Leo Stocco

II. An Approach of Programming Education Targeting Hybrid Mobile Application Development

Online learning has been introduced widely in university education due to COVID-19. It is very difficult to decide when we switch online to face-to-face lessons under the emergency state period. Especially in computer practices, the developing environment may differ between university and personal devices, which makes the operation of online learning more difficult. This paper shows an example of managing a hybrid lesson into plural universities using a environment-independent cloud service.

- Q: What is "Monaca" system?
- A: An integrated development environment on cloud for mobile applications or web services by JavaScript and HTML/CSS.

Author/Presenter:



Prof. Yukinobu Miyamoto Faculty of Business Administration Kobe Gakuin University Hyogo, Japan



Wednesday - June 08, 2022

Room:Palolo 1Time:12:45 - 2:15pmSession:Educational Foundations; Information Technology; Service-learning
Engineering ProgramSession Chair:Dr. Leo Stocco

III. Development of an Immersive and Experiential Training Program for Undergraduate Students in Biomedical Engineering

Undergraduate programs in biomedical engineering have limited experiential emphasis as part of the curriculum. Recently funded by NIH, the Bioengineering Department at the University of Texas at Arlington is implementing a program that extends and enhances the existing engineering design courses and significantly improves the curriculum in its ability to prepare students for innovating and commercializing technologies and enable community partners to better deliver healthcare.

- Q: How does one integrate immersive and experiential emphasis in undergraduate engineering curriculum?
- A: Leverage the students' heightened sense of social awareness to develop servicelearning courses to meet the critical needs of community partners.
- Authors/Presenters:

Prof. Michael Cho Prof. Justyn Jaworski Bioengineering Department University of Texas at Arlington Arlington, Texas



Prof. Michael Cho



Room:	Palolo 2
Time:	12:45 - 2:15pm
Session:	Political Science; African Studies; K-12 Aquaculture STEM Education; Aquaculture/Aquatic Science; Investigating the phenomenon Carrying Capacity

Session Chair: Prof. Kwame Badu Antwi-Boasiako

I. Understanding Terrorism: An Alternative View and the Fear of the Painful Truth: How Powerful Nations Legitimize Terrorism

Terrorism and counterterrorism have occupied academicians lately as they struggle to identify terrorists and how to stop them. On the contrary, this articles argues that powerful nations use terrorists acts to achieve their ideological and political goals where when diplomacy fails. In fact, powerful nations have legitimize terrorism for their interest and only cry foul when the oppressed resists the formers calculated cruelty as seen in slavery and colonization. In terrorism we are all guilty.

Author/Presenter:



Prof. Kwame Badu Antwi-Boasiako Department of Government Stephen F. Austin University Nacogdoches, Texas

II. Science, Technology and Development: An Investigation into the Problems Facing Science Teachers in Ghana's Senior High Schools

Science and Technology underpin the social and economic development of all societies and peoples in the world today, hence the teaching and learning of science in the schools has become an integral part of the education systems of all countries around the world, particularly in Africa. This need arose due to the emergence of the Human Capital and other development theories of the 1960s, which argued that the newly-independent African societies had to develop to catch up with the rest of the world through investment in their education systems, especially in the teaching and learning of science and technology in their schools.

Author/Presenter: **Prof. Clemente Abrokwaa** African Studies Department The Pennsylvania State University University Park, Pennsylvania

Room:	Palolo 2
Time:	12:45 - 2:15pm
Session:	Political Science; African Studies; K-12 Aquaculture STEM Education;
	Aquaculture/Aquatic Science; Investigating the phenomenon Carrying
	Capacity

Session Chair: Prof. Kwame Badu Antwi-Boasiako

III. Evaluating High School Students' Perceptions and Experiences using a Qualitative Methods Approach when introduced to an Aquaponics Curriculum

This study explored the impact of an active aquaculture project-based learning program, as perceived by high school students. The purpose of this case study was to discover if participation in the program influenced students' interest, engagement, and future educational and career aspirations in science, technology, engineering, and mathematics (STEM) when integrating aquaculture in, and outside, the classroom.

- Q: Can participation in a project-based aquaculture program influence students' interest, engagement, and future educational and career aspirations in science, technology, engineering, and mathematics (STEM)?
- A: Results demonstrated that the program engaged learners in real-world problem solving and decision-making situations while working collaboratively in small works.

Authors/Presenters:Dr. Kenneth Thompson
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Stuttgart, Arkansas
Dr. Kirk W. Pomper
College of Agriculture, Community and the Sciences
Kentucky State University
Frankfort, Kentucky



Dr. Kenneth Thompson

Wednesday - June 08, 2022

Room:	Palolo 4
Time:	12:45 - 2:15pm
Session:	STEM Engagement; Middle Grades Science

WORKSHOP

Reimagine Learning and Community Engagement

Never has there been a more important time to address disparities in education and create more meaningful mentorship experiences. This session will focus on building the capacity of educators and communities to address the specific needs of students in their communities. We'll explore questions around how different communities are engaging and expanding student networks and how schools/ educators can create deeper, more relevant learning experiences.

- Q: How can educators create deeper, more relevant, & engaging learning experiences?
- A: Together, through community partnerships, with relevant experiences, mentorship, and real time feedback, we can best support students in underserved communities.

Authors/Presenters:	Ms. Tiara Davis
	Ms. Krystal Cartus
	Middle Grades Science 6-8
	Citizen Schools
	Boston, Massachusetts



Wednesday - June 08, 2022

Room:	Naio Rroom
Time:	12:45 - 2:15pm
Session:	Math Education; Computational Mathematics; Higher Education &
	Inter-disciplinary Areas of Sciences
Session Chair:	Dr. Jia Liu

I. Impacts of COVID-19 on a Math Graduate Program

In this study, the students' performance data of a mathematics graduate program for spring 2019 and spring 2020 were collected and analysed. The results showed that if the right course delivery method is implemented, the impact of the novel coronavirus disease 2019 (COVID-19) on the students' performance could be minimum. Based on the study, some recommendations were made on how to improve students' performances in graduate-level mathematics courses.

Authors/Presenters:

Dr. Jia Liu Dr. Kuiyuan Li Department of: Mathematics and Statistics The University of West Florida Pensacola, Florida



Dr. Jia Liu



Hawaii University International Conferences

Room:	Naio Rroom
Time:	12:45 - 2:15pm
Session:	Math Education; Computational Mathematics; Higher Education &
	Inter-disciplinary Areas of Sciences
Session Chair:	Dr. Jia Liu

II. Preconditioned Iterative Solvers for the 2D Helmholtz Equation Via Radial Basis Functions

In this paper, we consider a linear system of equations arising from the discretization of the 2D Helmholtz equation through radial basis functions. The coefficient matrix A that is generated from the discretization is dense and often ill-conditioned. We apply different preconditioners to improve the conditioning of the problem for computation. Numerical experiments are conducted using the General Minimal Residual method (GMRES) to compare the convergence rates among various preconditioners. Besides, we applied the new discretization strategy to improve the accuracy and we found the best preconditioner with GMRES for the 2D Helmholtz equation based on the radial basis functions.

Authors/Presenters: Dr. Jia Liu

Mrs. Aletheia Zambesi Mr. Johnny Carbreana Dr. HsinKuo Lie Department of Mathematics and Statistics University of West Florida Pensacola, Florida Ms. Lina Wu Department of Mathematics Borough of Manhattan Community College, CUNY New York, New York



Dr. Jia Liu

Wednesday - June 08, 2022

Room:	Naio Rroom
Time:	12:45 - 2:15pm
Session:	Math Education; Computational Mathematics; Higher Education &
	Inter-disciplinary Areas of Sciences
Session Chair:	Dr. Jia Liu

III. Addressing the Leaky Pipeline: Best Practices for Increasing Underrepresented Students in Higher Education

Few underrepresented students enroll in STEA(agriculture)M education programs which is described as the "Leaky Pipeline." The agricultural industry is struggling to fill positions with qualified with 21st Century agricultural professionals. This interactive session will cover how the authors' institution leads the effort with seven other HBCUs by providing best practices for recruiting, mentoring, and graduating underrepresented students in higher education majors.

- Q: What U.S. Historically Black College and University (HBCU) is recognized as the top producer of African American engineering students?
- A: North Carolina Agricultural and Technical State University.

Authors/Presenters:



Dr. Paula E. Faulkner Dr. Misty Blue Terry Agribusiness, Applied Economics, and Agriscience Education North Carolina A&T State University Greensboro, North Carolina

Wednesday - June 08, 2022

Room:	Palolo 1
Time:	2:30 - 4:30pm
Session:	Distance Education, Higher Education, Math Education, Second
	Language Studies, Latinx Studies, URMs; Language Education,
	Linguistics

Session Chair: Dr. Lynette Williamson

I. Trauma-Informed Pedagogy: Teaching and Learning in a Time of Crisis

By the end of this presentation, the attendees will have learned the elements listed below. The overarching goal of this presentation is to provide information that can be used post COVID-19 pandemic in either a fully face to face or an online classroom.

- 1. Define trauma-informed pedagogy
- 2. Discuss the influence of "trauma" on vulnerable student populations
- 3. Discuss specific aspects including empathy and compassion
- 4. Discuss teaching strategies to decrease anxiety
- Q: How does "trauma" manifest in a college student?
- A: Lack of motivation, loss of prior knowledge, missed assignments.

Authors/Presenters:



Dr. Lynette Williamson Mathematics, Natural and Health Sciences Department University of Hawaii West Oahu Kapolei, Hawaii



Dr. Garry Roy Mathematics, Natural and Health Sciences (MNHS) Division University of Hawaii West Oahu Kapolei, Hawaii

Room:	Palolo 1	
Time:	2:30 - 4:30pm	
Session:	Distance Education, Higher Education, Math Education, Second	
	Language Studies, Latinx Studies, URMs; Language Education,	
	Linguistics	

Session Chair: Dr. Lynette Williamson

II. Enhancing Concurrent Enrollment Courses on College Campuses

This research study will share insights from students at Arkansas State University on the benefits of enrolling in a concurrent program. The research will also look at how enrolling in concurrent courses on college campuses assists students in making decisions about college after graduation.

- Q: What are the benefits for students enrolling in concurrent programs such as the one at *Arkansas State University*?
- A: There are several benefits for students enrolling in these programs. Academic benefits alone are a great benefit of enrolling in these courses. Students can boost their college GPAs before enrolling after graduation and tackle required prerequisite courses to expedite their graduate date in college.

Authors/Presenters: Mrs. Stephanie Dekok Dr. Thillainatarajan Sivakumaran Enrollment Management and Global Outreach Arkansas State University Jonesboro, Arkansas



Hawaii University International Conferences

Room:	Palolo 1
Time:	2:30 - 4:30pm
Session:	Distance Education, Higher Education, Math Education, Second
	Language Studies, Latinx Studies, URMs; Language Education,
	Linguistics

Session Chair: Dr. Lynette Williamson

III. Exploring the Effects of Differing Linguistic Accommodation Programs among Bilingual Latinx Students' Mathematics Self-efficacy and Achievement

This study explores whether Latinx 9th grade students' enrollment in a linguistic accommodation program (English as a Second Language Program v. Bilingual/Bicultural Program) has any affects in their mathematics achievement and self-efficacy, and if this depends on a previous enrollment in a remedial mathematics course.

- Q: Does the type of linguistic accommodation program have any significant effects on English Language Learner (ELL) students' Mathematical self-efficacy and achievement?
- A: Yes. Students enrolled in programs more strongly aligned with research-based recommendations, such as bilingual/bicultrual programs, do yield higher levels of mathematics self-efficacy and achievement among Latinx students.

Author/Presenter:



Dr. Luis Fernández The School of Mathematical and Statistical Sciences The University of Texas Rio Grande Valley Edinburg, Texas

Room:	Palolo 1
Time:	2:30 - 4:30pm
Session:	Distance Education, Higher Education, Math Education, Second
	Language Studies, Latinx Studies, URMs; Language Education,
	Linguistics

Session Chair: Dr. Lynette Williamson

IV. Investigation of Formulaic Sequences at The End of Sentences in Japanese Closed **Caption TV Corpus**

In this paper, for Japanese language learners, we will describe the statistic results and roles of the end of sentence expressions that influence their connotations and meanings, extracted as formulaic sequences from our spoken corpus of modern Japanese. Although various expressions have been taught in textbooks, there have been few research from the viewpoint of practical aspect using a large scale corpus. We use our closed caption TV corpus over 1.9 billion words size for the investigation.

- Q: What kind of end of sentence expressions were frequent appeared in TV corpus?
- A: We do not determine important end of sentence expressions based on frequency alone. As results of preferentially selecting those with a long number of characters from the relatively high frequency of formulaic sequences, $\bullet g$, 2 , ', ϕ , \ddot{U} , \cdot (gozaimasu) $\bullet h$, • $g, E \bullet v, \phi, \ddot{U}, \dot{v}$ (to-omoimasu)•h (I think -), • $g, \mu, \ddot{A}, \phi, \ddot{U}, \dot{v}$ (site-imasu)•h(I•fm doing), etc. were extracted.

Authors/Presenters: Dr. Hajime Mochizuki Prof. Kohji Shibano Tokyo University of Foreign Studies Fuchu, Tokyo Japan



Room:	Palolo 2
Time:	2:30 - 4:00pm
Session:	Criminal Justice/ Justice Administration Section; Substance Use and
	Abuse; Health Education; Social Sciences, Public Policy; Forensic
	Psychology, Pedophilia, Attitude Change and Reducing Sexual Offending

Session Chair: Dr. Ruby Dhand

I. Reconciliation through Mental Health Courts and Specialized Courts Using Trauma Informed Practices

People with mental health and substance use issues face significant barriers to accessing justice in the criminal justice system. In response, mental health courts have been developed to divert people with mental health disabilities and addictions from the criminal justice system and improve access to mental health services. This presentation evaluates and analyzes the extent to which mental health courts increase access to justice for people with mental health and substance use issues.

- Q: Does mental health courts increase access to justice for people with mental health and substance use issues through trauma informed practices?
- A: Yes, there are many positive aspects of mental health courts.

Author/Presenter:



Dr. Ruby Dhand Faculty of Law Thompson Rivers University Kamloops, British Columbia Canada



Hawaii University International Conferences

Wednesday - June 08, 2022

Room:	Palolo 2
Time:	2:30 - 4:00pm
Session:	Criminal Justice/ Justice Administration Section; Substance Use and
	Abuse; Health Education; Social Sciences, Public Policy; Forensic
	Psychology, Pedophilia, Attitude Change and Reducing Sexual Offending

Session Chair: Dr. Ruby Dhand

II. Comparing Substance Use Risk Profiles across Clinical Settings: Implications for Screening, Brief Intervention, and Treatment

This paper describes different patterns of substance use risk among patients who attend different healthcare centers in Alabama. In addition to mapping different kinds of substance use challenges, we wanted to understand whether substance use risk varied by the Healthcare Center/agency patients attend. The results indicate that substance use patterns tend to be consistent across Alabama healthcare sites--that is, they tend to not vary based on healthcare clinic.

- Q: How does substance abuse risk present itself in low-income health centers?
- A: There are different patterns of substance use which can help healthcare workers better respond to particular kinds of substance use difficulty

Authors/Presenters: Dr. Michael Lawson Ms. Shanna McIntosh College of Education University of Alabama Tuscaloosa, Alabama



Hawaii University International Conferences

Room:	Palolo 2
Time:	2:30 - 4:00pm
Session:	Criminal Justice/ Justice Administration Section; Substance Use and Abuse; Health Education; Social Sciences, Public Policy; Forensic Psychology, Pedophilia, Attitude Change and Reducing Sexual Offending

Session Chair: Dr. Ruby Dhand

III. Meeting the Pedophile: Attitudes toward Pedophilia among Psychology Students

The general public along with professionals have been shown to have difficulties distinguishing between child sex offenders (CSOs) and pedophiles (Feelgood & Hoyer, 2008). This study explored psychology students views towards pedophiles pre and post an educational intervention and direct contact to a pedophile. The results showed students perceived pedophiles as less dangerous post the intervention and thus, this study highlighted the need for stigma to be reduced towards pedophiles.

Q: How can we reduce child sexual offending?

- A: *By reducing stigma towards non-offending pedophiles and providing treatment to them, reducing the likelihood of them offending sexually.*
- Authors/Presenters: Dr. Rebecca Heron Dr. Julie Karsten Ms. Lena Schweikert Department of Psychology University of Houston Houston, Texas



Dr. Rebecca Heron

Room:Palolo 4Time:2:30 - 5:00pmSession:Education Technology, Language Education, Teacher Education, Second
Language Studies

WORKSHOP(I)

Knowledge Construction, Participation, and Identity Development in the Virtual Classroom During the COVID-19 Pandemic

This interactive workshop will introduce the presenter's study and how she, as the practitionerresearcher, and her pre-service teachers socially constructed knowledge about language development, made meaning of communication and participation in a new hybrid course, and transformed their learning and identities through reflexive practices. We will discuss how the study could inform explorations of knowledge construction, participation, and identity development since our pivot to remote learning and communications in the time of COVID-19.

- Q: Question #1: How has your teaching/learning practices or the practices of others shifted your pivot to remote learning?
 Question #2: What issues of equity have surfaced since we have pivoted to remote learning?
- A: Answers will vary.

Author/Presenter:	Dr. Anni Leming
	Ph.D. Educational Linguistics
	University of New Mexico
	Albuquerque, New Mexico



Hawaii University International Conferences
Wednesday - June 08, 2022

Room:	Palolo 4
Time:	2:30 - 5:00pm
Session:	Science Education; Technology, Engineering and Mathematics; Education
	Technology; History

WORKSHOP (II)

Equity in STEM Education: Identifying Oppressive Narratives in Science Education

Dominant narratives of who makes an effective person with a career in Science/Engineering are pervasive in industry and in education. Through our 90 minute workshop, we will engage in discussions on oppressive colonial structures of schooling that have created restricted pathways in STEM education, leading to the loss of divergent thinkers and divergent identites in STEM industries. We will then work with educators to co-construct future possibilities in STEM education.

- Q: Educators as Barriers: How might we rethink STEM Pipelines?
- A: Education on Turtle Island has been constructed by colonial logics, leading to the perpetuation of dominant narratives of who belongs in STEM fields. Examining the barriers in STEM pipelines will better help us to critically and consciously revision piplines in STEM, leading to a more diversified workforce with diverse, innovative ideas we need to navigate the 21st century and beyond.

Authors/Presenters:



Ms. Sayema Chowdhury Faculty of Education York University Toronto, Ontario Canada



Ms. Jocelyn Shih Faculty of Education York University Toronto, Ontario Canada

Wednesday - June 08, 2022

Room:	Naio Room
Time:	2:30 - 5:00pm
Session:	Poetry and the ordinary world with extraordinary possibilities

PERFORMANCE (I)

Poetry and the Ordinary World with Extraordinary Possibilities

I will read poems from On Sunday Afternoons (Finishing Line Press), 45 min. https:// www.finishinglinepress.com/product/on-sunday-afternoons-by-richard-becker/"What I admire is how Becker startles a reader into refreshed appreciation of what we think of as the "ordinary" world. Ordinary yes, but extraordinary too in the near-haiku glimmer and glow with which the poet animates small corners of the natural world" (poet Eamon Grennan), endorsement from back cover.

- Q: What connects U.S.'s victory in WWII and its treatment of a food crisis and pandemic.?
- A: US dominates much of today's world that is in famine and is unvaccinated today.

Author/Presenter:



Prof. Richard Becker Music Department University of Richmond Richmond, Virginia



Wednesday - June 08, 2022

Room:	Naio Room
Time:	2:30 - 5:00pm
Session:	Theatre

PERFORMANCE (II)

Keeping Distance: Creating Live Performances during the COVID Pandemic

The play, Keeping Distance, is an experiment in creating live theatre both during and about covid. The show follows Stanley Withers, a relentlessly optimistic tech worker quarantined in his apartment during covid. Utilizing carefully filmed projections, the play examines and interrogates the notion that screens are an effective substitute for human interaction. The presentation will feature talks by the playwright and the director of footage as well as performed selections from the piece.

Q: How do you deliver 10 characters to the stage during a one-person live show?

A: Projection technology!

Authors/Presenters:	Prof. Jay Stratton
	Dr. Rennie Araucto
	Department of Theatre and Dance
	University of Texas at El Paso
	El Paso, Texas





DAY 2

Thursday - June 09, 2022

KEYNOTE ADDRESS

Thursday - June 09, 2022 Naio Room 7:15 - 7:45am



Dr. Leo Stocco Department of Electrical & Computer Engineering University of British Columbia Vancouver, British Columbia Canada

Dr. Leo Stocco received his PhD in Electrical Engineering at the University of British Columbia (UBC), Canada in 2000 and went on to lead the robotics group at Integrated Surgical Systems in Davis California. He returned to UBC as a professor in 2005 where he teaches Control Systems, Medical Instrumentation, and Design Project courses. Dr. Stocco initiated the bio-medical engineering student team which has now grown to over 50 students from Engineering, Business, Kinesiology, Arts and Medicine.

He was awarded the Killam Award for outstanding teaching in 2012 and the Wighton Fellowship for advancements in undergraduate lab course work in 2019. He developed a novel gearing technology in 2014 and a start-up company in 2016 where he develops power transmission solutions for the automotive, medical device and automation industries.

His research interests include Robotics, Control and Power Transmission, and his teaching focus is Project-Based Learning and Prototyping. His publication history spans topics that include robot design, gear systems, mathematical modeling, computer graphics, medical devices, and of course, educational innovation. Dr. Stocco has been a regular attendee of the HHIC STEM/STEAM and Education Conference since 2016.

Room:	Palolo 1
Time:	8:15 - 9:45am
Session:	Civil and Mechanical Engineering; Inter-disciplinary and other areas of
	Education; STEM Professional Development, Earth and Space Science,
	NASA Missions and Scientific Research

Session Chair: Dr. Nashwan T. Younis

I. Optimization of a Strain Gage Technique for Determining Stress Concentration Factors

A simple and robust single strain gage technique for more accurate measurement of stress concentration factor (SCF) for holed aluminum specimen configurations is proposed. The technique is supported by strong theoretical foundation, and it allows the strain gage to be placed reasonably close to the hole avoiding various problems associated with singularities. The results based on calibrated gages are promising and indicates that altered gages can be used to estimate the peak strain around discontinuities.

- Q: How can an engineer measure steep strain gradients accurately to calculate stress intensity factors?
- A: This can be accomplished by altering a strain gauge based on the results obtained in this study.

Author/Presenter:	Dr. Nashwan T. Younis
	Department of Civil and Mechanical Engineering
	Purdue University Fort Wayne
	Fort Wayne, Indiana



Hawaii University International Conferences

Room:	Palolo 1
Time:	8:15 - 9:45am
Session:	Civil and Mechanical Engineering; Inter-disciplinary and other areas of
	Education; STEM Professional Development, Earth and Space Science,
	NASA Missions and Scientific Research

Session Chair: Dr. Nashwan T. Younis

II. STEM Enhancement in Earth Science (SEES): Developing a Hybrid NASA/TSGC/ UTCSR Engineering High School Internship Program for a Post-COVID World

NASA, the Texas Space Grant Consortium (TSGC), and The University of Texas at Austin Center for Space Research (UTCSR) support the STEM Enhancement in Earth Science (SEES) program which provides high school students with exposure to Earth and space research. During these unprecedented times, NASA TSGC and UTCSR had to reimagine summer internships and youth collaborative programs to develop a hybrid educational program with authentic research, making SEES more accessible to students Post-COVID.

- Q: What is the value of providing authentic research opportunities for high school students?
- A: Students gain knowledge in research, earth and space science, engineering, career exploration, and STEM knowledge and skills. They also increase their proficiency of soft skills that improves their individual efficacy.

Authors/Presenters:



Mrs. Celena Miller Center for Space Research/NASA Texas Space Grant Consortium University of Texas at Austin Austin, Texas



Mrs. Margaret Baguio Center for Space Research/NASA Texas Space Grant Consortium University of Texas at Austin Austin, Texas

Palolo 1
8:15 - 9:45am
Civil and Mechanical Engineering; Inter-disciplinary and other areas of
Education; STEM Professional Development, Earth and Space Science, NASA Missions and Scientific Research

Session Chair: Dr. Nashwan T. Younis

III. Liftoff to Best Practices in STEM Professional Development Design

The LiftOff Summer Institute is a STEM professional development workshop held at NASA designed around an aerospace or space science theme drawn from NASA's diverse engineering and scientific research programs. This program is a collaborative effort of Texas Space Grant Consortium, The University of Texas, NASA, and industry partners which combines the strengths of collaborators to enrich teaching and learning of STEM which leads to best practices in professional development.

- Q: Using the spark of space science, what are some strategies for STEM professional development that leads to best practices?
- A: The LiftOff Professional Development Institute held at NASA JSC provides 5-12 grade educators with resources, inspiration, and motivation to engage students in STEM.

Authors/Presenters:



Mrs. Margaret Baguio Center for Space Research/NASA Texas Space Grant Consortium University of Texas at Austin Austin, Texas



Ms. Deborah Reynolds Center for Space Research/NASA Texas Space Grant Consortium University of Texas at Austin Austin, Texas

Hawaii University International Conferences

Room:	Palolo 2
Time:	8:15 - 9:45am
Session:	Biology, Science Education, Art Education, Visual Arts, Graphic Design,
	Drama, Film, TV, and Other Media; Math Education; Higher Education;
Session Chair:	Dr. Diibo Zanzot

I. Filmmaking to Create Content for Peer-to-Peer Skills Transfer

Scientific communication is an invaluable skill for STEAM majors in undergraduate and postgraduate education. While traditional modalities for training in scientific communication include artifacts such as laboratory reports or oral presentations, this presentation will demonstrate how group-assembled films can be used to create teaching content for current and future peers. This presentation will describe methods to assure student success, as well as showing examples of student-produced work.

Q: How do you prevent students from assembling projects quickly before the deadline?

A: By assigning several benchmark assignments over the course of the semester.

Author/Presenter:



Dr. Djibo Zanzot Department of Biological Sciences Auburn University Auburn, Alabama

II. Math Anxiety: Enough Problem Finding, Now to Problem Solving!

Math anxiety affects many students, often altering their life chances and decreasing their self-esteem. This paper presentation discusses ways to mitigate math anxiety, based on evidence-based, secular contemplative practices. The techniques are applicable to all levels as everyone is connected in a student's learning of mathematics. Let's tackle math anxiety together!

- Q: How can we help mitigate math anxiety in the classroom?
- A: By using secular contemplative practices, such as breathing, visualization, self-compassion.

Author/Presenter:



Dr. Leslie Shayer Okanagan School of Education The University of British Columbia Kelowna, British Columbia Canada

Continued on next page

Hawaii University International Conferences

Room:	Palolo 2
Time:	8:15 - 9:45am
Session:	Biology, Science Education, Art Education, Visual Arts, Graphic Design,
	Drama, Film, TV, and Other Media; Math Education; Higher Education;
Session Chair:	Dr. Djibo Zanzot

III. Supporting International Students with International Programs at Arkansas State University

This research study explores strategies for International Programs faculty and staff at Arkansas State University to support international students. The research will also look at the effectiveness and benefits of the programs and improvements that are needed to support international students enrolled at A-State fully.

- Q: What are some of the student support and engagement programs at A-State for international students?
- A: International Student Services is the primary resource for international students in pursuit of their academic goals. One of the support services offered through this department is academic services exclusively for international students, including international student tutoring, registration assistance, and academic seminars.

Authors/Presenters:	Mrs. Stephanie Dekok
	Dr. Thillainatarajan Sivakumaran
	Enrollment Management and Global Outreach
	Arkansas State University
	Jonesboro, Arkansas



Room:	Palolo 4
Time:	8:15 - 9:45am
Session:	Curriculum, Research and Development, Early Childhood Education/
	Elementary Education, Teacher Education, Technology, Engineering and
	Mathematics,Human and Health Services, Education Technology,
	Entrepreneurship Development,Inter-disciplinary and other areas of
	Technology and Engineering, Philosophy, Art

WORKSHOP

Creating STEAM Student Led Learning Experiences Rooted in Justice and Identity

This experiential workshop provides educators and researchers with the opportunity to create STEAM student-led learning experiences that are rooted in justice and freedom. Participants will work in groups and use case-studies to learn how to support youth as they use emerging technologies to build power in their communities. Attendees will leave feeling motivated, inspired, and believing it is imperative to provide elementary and middle school youth a space to build power in their communities.

- Q: Why STEAM based student-led learning experiences and why now?
- A: Many of the grand challenges of our time ranging from climate change to providing clean water all require STEAM based solutions. It is important that society reframe what education looks like and the youth must play a part in actively imagining and creating a world that doesn't exist yet.

Author/Presenter:



Dr. Jacob Adams STEM to the Future Los Angeles, California

Thursday - June 09, 2022

Room:	Palolo 1
Time:	10:00 - 12:00pm
Session:	Applied Mathematics; Probability, Mathematics, Computer
	Science; Physics, Astrophysics and Cosmology; Arts Dance

Session Chair: Dr. Salam Khan

I. Statistical Approximation of the Generalized Poisson Distribution

This presentation is about recovering mean free velocity of optical Gaussons that propagate in presence of stochastic perturbation in addition to bandpass filters and multi-photon absorption. The corresponding Langevin equation is derived and analyzed. This leads to the mean free velocity in the limiting case.

Q: In what area does this research belong to?

A: Applied Mathematics.

Authors/Presenters:Dr. Salam Khan
Dr. Anjan Biswas
Department of Physics, Chemistry and Mathematics
Alabama A&M University
Normal, Alabama

II. On the Problem of a Magic Candy Jar

An interesting candy jar problem has been investigated. Several recurrence relations have been discovered and verified. The format of a closed formula of these recurrence relations has been established. A computer simulation is reported.

Q: What is the relationship between Coupon Collector's Problem and Magic Candy Jar Problem?

A: *They are the same.*

Authors/Presenters: Dr. Hong Biao Zeng Dr. Bill Weber Department of Computer Science Fort Hays State University Hays, Kansas

Room:	Palolo 1
Time:	10:00 - 12:00pm
Session:	Applied Mathematics; Probability, Mathematics, Computer
	Science; Physics, Astrophysics and Cosmology; Arts Dance

Session Chair: Dr. Salam Khan

III. Simulating the Early Universe

My team at UHCL has been working for several years to develop the most accurate simulations of the Early Universe possible in order to answer several basic questions such as when did the first magnetic fields develop. In addition, we use our numerical code to test fundamental theories in physics. In this presentation, I plan to talk about how we developed this simulation software and what we have already learned from using it.

Q: What was the early universe like?

A: Much simpler than it is today.

Author/Presenter:	Dr. David Garrison
	Physics Department
	University of Houston Clear Lake
	Houston, Texas



Hawaii University International Conferences

Thursday - June 09, 2022

Room:	Palolo 1
Time:	10:00 - 12:00pm
Session:	Applied Mathematics; Probability, Mathematics, Computer Science; Physics, Astrophysics and Cosmology; Arts Dance

Session Chair: Dr. Salam Khan

IV. Dance in Higher Education in the USA During the COVID-19 Pandemic

The pandemic opened a door to reimagine the socio-political significance that forced many to reconsider existing structures and procedures. New creative ideas in dance globally resulted. The utilization and exploration of contemporary techniques like Laban Movement Analysis (LMA) and Countertechnique®, systems, and technologies (Motion Capture and Dance Film), gleaned new insights to further develop the pedagogical and choreographic practice. Dance education necessitated adaptations to the artistic practice that produced creative solutions and new innovative ways of working.

- Q: Despite the many negative impacts during the pandemic, the restrictions were motivations to explore new possibilities in teaching and creating for dance in a contemporary world. What are the objectives and contributions of this research?
- A: The objective of this research is to explore new approaches utilizing Laban Movement Analysis (LMA) and Motion Capture to dance in higher education from the pedagogical and choreographic adaptations made during the pandemic. This research provides more accessible, creative ways and socio-political significance to dance education in a globalized world through overcome the spatial isolation from the pandemic.
- Authors/Presenters: **Prof. Seyong Kim** School of Theatre and Dance Western Michigan University Kalamazoo, Michigan **Prof. Kelsey Paschich** Department of Dance Western Michigan University Kalamazoo, Michigan

Thursday - June 09, 2022

Room:	Palolo 2
Time:	10:00 - 11:30am
Session:	Inter-disciplinary Areas of Sciences; Math Education, Differential
	Equations and Math Modeling, Mathematics, Research and Education,
	Math Modeling of Real World Problems, Math Education for Under-
	graduates; Quantitative Methods in Educational Research

Session Chair: Prof. Katsumi Sakata

I. Mathematical Formulation of Environmental Responses of Life Systems

This research project is aimed to build a mathematical model of environmental response of life systems.

- Q: Can environmental response of life systems be universally described?
- A: We constructed a generalized model on environmental response for a genetic regulatory system and a predator-prey ecosystem.

Author/Presenter:



Prof. Katsumi Sakata Department of Life Science and Informatics Maebashi Institute of Technology Maebashi, Gunma Japan Dr. Ramesh Katam Biological Sciences Department College of Science and Technology Florida A&M University Tallahassee, Florida

Room:	Palolo 2
Time:	10:00 - 11:30am
Session:	Inter-disciplinary Areas of Sciences; Math Education, Differential
	Equations and Math Modeling, Mathematics, Research and Education,
	Math Modeling of Real World Problems, Math Education for Under-
	graduates; Quantitative Methods in Educational Research

Session Chair: Prof. Katsumi Sakata

II. Mathematical Modeling of the Tsunami Run-up on a Sloping Beach

The purpose of this paper is to propose the quasi-linear theory of tsunami run-up and run-down on a beach with complex bottom topography. The proposed model can be readily used to investigate run-up and draw-down for different sea bottom profiles. The particular solution, when the sea-floor is described by the piece-wise linear function, is obtained and the effect the different beach profiles and initial wave locations are considered.

Q: What math tools do you use in your model?

A: Partial differential equations.

Prof. Sergei Fomin
Department of Mathematics and Statistics
California State University, Chico
Chico, California

III. Analyzing the Significance of Transitional Housing Programs

The purpose of this research is to examine how homeless students that live in transitional housing and out of transitional housing programs in Florida, perform academically on the FCAT reading test. Therefore, the purpose of this research also advocates for additional transitional housing programs being implemented and developed in the state of Florida.

Author/Presenter:

Ms. Hope L. Rivera Matthews Educational Psychology and Technology The Chicago School of Professional Psychology Chicago, Illinois

Thursday - June 09, 2022

Room:	Palolo 4
Time:	10:00 - 11:30am
Session:	STEAM, Climate Change, Engineering an upcycled product

WORKSHOP

Instill a Culture of Climate Activism at an Elementary School

Climate change is impacting our society. Teaching kids to become stewards of the environment is one way to combat climate change. In this workshop, find out how kids at an elementary school are making changes one trash pick up at a time. Attendees will dive into a lesson about how to create a culture of climate activist at an elementary school. Attendees will be walked through a fun upcycling project that students at the elementary school participated in.

- Q: What can we do about climate change?
- A: Teach our students at a young age that they can make the difference. This impact will be exponential as one green skill over the course of a lifetime can impact mass change.

Author/Presenter:

Dr. Phuong Uzoff Richmond Street School El Segundo Unified School District El Segundo, California





POSTER SESSION

Thursday - June 09, 2022 11:00 am - 12:30 pm Naio Room

Thursday - June 09, 2022

Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

1. Changes in Medicaid Claims for Opioid Use Disorder During the Coronavirus Pandemic: Differences by Rural-urban Status

Little is known about how the pandemic changed Medicaid claims for opioid use disorder (OUD). We obtained county-level claims for OUD, based on relevant ICD codes, in Alabama from January 1, 2018 and June 30, 2020. We estimated a Poisson regression model stratified by rural-urban status to determine structural changes in claims before and after the pandemic. Only urban counties experienced increases in OUD claims (b = 0.08, p < 0.01, +8%). Targeted efforts are needed for these populations.

Q: Did the declaration of the coronavirus outbreak as a pandemic change the number of claims for opioid use disorder in rural and urban areas?

A: Yes, particularly in urban areas.

Authors/Presenters: Dr. Ellen Robertson Dr. David Albright Ms. Shanna McIntosh School of Social Work The University of Alabama Tuscaloosa, Alabama Dr. Justin McDaniel School of Medicine Southern Illinois University Carbondale, Illinois



Hawaii University International Conferences

Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

2. Exploiting Multimodality of Picture Books for Creative L2 Communication

Traditional L2 education has aimed at the memorization and fluent reproduction of accurate sentences; however, the importance of research on the creative processes of L2 learning and interactions is gaining increasing recognition. This study first develops an original picture book with playful mismatches between words and pictures, inspired by Magritte's witty painting. Then it investigates how a picture book can be a multimodal tool that involves the readers in creative negotiation of meanings.

- Q: What do people do when they find a playful gap between what they see and what they hear?
- A: Some may observe, talk about, bridge, or justify the gap. What would you do?

Author/Presenter: **Prof. Haruko Sannomiya** Department of Literature Daito Bunka University Itabashi, Tokyo Japan

3. Creating an Inclusive International Experience

While the creation of a virtual international experience program was conceived as a stop gap measure for delivering a course alternative for a traditional study abroad program during the pandemic, the outcome has far-reaching potential. A virtual international experience can provide content with many of the same benefits as a traditional study abroad program, but at a lower cost with the potential for increasing participation and attracting a more diverse student group to the program.

Q: What limitations does the virtual international experience address?

A: Affordability, Full-time employment, Family obligations, etc.

Authors/Presenters:Dr. Nancy AlbersDepartment of Management & MarketingDr. Tami KnottsDepartment of Management & MarketingCollege of BusinessLouisiana State University ShreveportShreveport, Louisiana

Thursday - June 09, 2022

Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

4. Disparities in Opioid Overdose Deaths by Age, Race, and Sex in Alabama Counties, 1999-2018

Little is known about the geographic distribution of opioid overdose deaths in Alabama. We obtained county-level counts of opioid overdose deaths from 1999-2018 by age, race, and sex from the Centers for Disease Control and Prevention's WONDER database. We calculated age, race, sex, and county stratified crude death rates per 100,000 residents. Results show that males, individuals aged 25-64 years, and individuals who identify as White in Walker county are at greatest risk for overdose.

- Q: What demographic groups are at greatest risk for opioid overdose in Alabama counties?
- A: Middle-aged, White males.
- Authors/Presenters: Ms. Wendi Hogue Dr. David Albright Ms. Shanna McIntosh School of Social Work The University of Alabama Tuscaloosa, Alabama Dr. Justin McDaniel School of Medicine Southern Illinois University Carbondale, Illinois



Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

5. A Perception of Needs for Underprepared Students Regarding Resources to Ensure a Successful Transition Out of College

Underprepared students benefit from engaging/supportive programs designed to help them transition into college, yet there is minimal research on programs and resources needed to assist students after graduation (Augustine, 2010). Limited knowledge about life outside the classroom causes post-graduation plans to be an anxiety ridden topic for undergraduates. College transitioning programs are essential to promote employability, post-graduation confidence and success (Dollinger & Marangell, 2019).

- Q: What do underprepared students need in terms of programming to ensure a successful transition out of college?
- A: A transitional platform and additional alumni mentorship.

Authors/Presenters:Ms. Jade Dallam
Department of Social Work
Dr. Melissa Cheese
Academic Enrichment
Dr. Shiloh Erdley-Kass
Sociology, Social Work, and Criminal Justice
Ms. Madelyn Rodriguez
Diversity, Equity, Inclusion & Multicultural Center
Bloomsburg University of Pennsylvania
Bloomsburg, Pennsylvania



Hawaii University International Conferences

Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

6. Can Art be a Competency Builder? That is how Exposure to Art Shapes the Perception of Desired Qualities of a Technical Graduate

The purpose of this paper is an attempt to determine the influence of public art on changing the attitudes of spatial management students at UPWr, regarding the desired characteristics of a graduate. The research hypothesis assumes a significant evolution of views on this topic under the influence of exposure to works of public art. The results confirm the advisability of changes in the Spatial Economy study program at UPWr aimed at a broader inclusion of Arts and Culture elements.

- Q: Can Art be a competency builder?
- A: The exposure to the arts is shaping an important evolution of views about the desired characteristics of a technical graduate. The evolution of degree programs from STEM to STEAM may result in the strengthening of key competencies desired by today's employers.

Author/Presenter:



Prof. Marian Kachniarz Institute of Spatial Management Wroclaw University of Environmental and Life Sciences Wroclaw, Polland



Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

7. Integrating Scientific Literacy and Proposal Development with a Hybrid Laboratory Format in a Large Introductory Biology Course

Presenting a model integrating a hybrid lab in a large introductory biology course. This format combined smaller class size in lab, increasing one-on-one interaction, and remote sessions which used a scaffolding approach to scientific literature research culminating in a proposal. This strategy explored scientific literacy, student opportunity to express, clarify and follow interests through the proposal, and a method to foster a deeper conceptual understanding of scientific practices.

Q: Are these approaches effective in a large class?

A: Yes, however support and scaffolding are critical for the approach to be effective.

Author/Presenter:



Ms. Rima Barkauskas Biological Sciences Department DePaul University Chicago, Illinois

8. Sex and Body Mass Index Related Difference in Obliquus Capitis Inferior Muscle Thickness

Our study presented the thickness of OCI muscle in normal subjects using quantitative ultrasonographic analysis. Furthermore, this normative value reflects the anatomical variable tendency of demographic factors such as sex and BMI, and it can be used as reference data for further proper evaluation and treatment.

Q: How can it be meaningful of ultrasonographic evaluation about OCI muscle?

A:

Authors/Presenters: Prof. Joon-Shik Yoon Dr. Byung Jun Kim Physical Medicine and Rehabilitation Korea University College of Medicine Seoul, South Korea

Hawaii University International Conferences

Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

9. Water Quality Technology Degree augments Educational Opportunities for Water Treatment Operators

Learn about Pellissippi State's new degree program, designed from industry feedback and tailored to prepare operators for the workforce and state certification. This unique program, the only one of its kind in the southeast region, has successfully trained more than a dozen new drinking water or wastewater plant operators. Graduates are equipped to assume leadership roles from the start of their careers, and all have been employed in full-time positions prior to graduation.

- Q: How is this program unique and what is its goal?
- A: This is the first program of its kind in Tennessee, and the entire southeast region. This degree program aims to train highly-qualified water and wastewater plant operators.

Author/Presenter:



Prof. Cristina Carbajo Department of Natural and Behavioral Sciences Pellissippi State Community College Knoxville, Tennessee



Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

10. Playing College: Making & Designing-Thinking STEAM in Undergraduate Education

Our partnership between Hispanic-serving four-year Queens College and the New York Hall of Science Museum has created a community of practice where interdisciplinary faculty engage in a knowledge exchange to integrate making and design thinking in undergraduate courses. Drawing from complementary expertise in formal and informal learning, our team unpacks their maker mindsets in "making STEAM" to broaden participation in STEAM by (re)invigorating our diverse students' interest in science & tech.

- Q: Does exposure to design thinking and making increase academic engagement and increase feelings of self-efficacy, values, belonging, and STEM identity in undergraduate students?
- A: Initial data and anecdotal reports suggest making and design thinking experiences bolster self-efficacy and engagement. Ultimately, we seek to assess whether such experience supports increased entry and persistence in STEM majors.

Authors/Presenters:Prof. Danne Woo
Division of Arts and Humanities
Prof. Bradley Bergey
Department of Secondary Education & Youth Services
Prof. Matthew Greco
Art Department
Queens College, City University of New York (CUNY)
Queens, New York



Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

11. Instilling Safe, Secure, and Reliable Computing Principles in AI Applications Among STEM Learners

Artificial Intelligence (AI) tools and methods are increasingly being applied to STEM disciplines toward solving problems that were previously thought difficult or unsolvable. This presentation describes the authors' efforts in a funded research project aimed at instilling SSR computing principles among diverse STEM learners. These efforts are supported and informed by a panel of experts drawn from several STEM disciplines across academic, industry, and government organizations.

Q: Are the learning modules suitable for self-directed learning?

A: Yes, they are suitable for in-class and/or self-directed online learning.

Authors/Presenters: Dr. Alvis Fong Dr. Ajay Gupta Dr. Steve Carr Dr. Shameek Bhattacharjee Computer Science Department Western Michigan University Kalamazoo, Michigan

12. Understanding NSF Clouds and Software-Defined Networking (SDN) for Computer Networking and Security Education

Information technology plays an important role in STEM education and securing a cyberspace is very useful to many STEM disciplines. Hands-on laboratories are fundamental stones in cybersecurity curriculums. In this presentation, we discuss our broadening the path to the STEM profession through cybersecurity learning.

Q: How do we broaden the path to the STEM profession?

A: Through cybersecurity learning.

Authors/Presenters: Dr. Kaiqi Xiong Mr. Mohamed Rahouti Cyber Security Department of Mathematics and Statistics University of South Florida Tampa, Florida

Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

13. STEAM Tutoring. The Unexpected Learning Outcome among the Erasmus Students at Wroclaw University of Environmental and Life Sciences in Poland

The purpose of the article is an attempt to show that using STEAM method in tutoring is an effective tool to increase the creativity and effectiveness of education, also in social sciences. The research was conducted at Wrocaw University of Environmental and Life Sciences in Poland and covered the sample of Erasmus students who signed up for the course of "Territorial Marketing".

- Q: What are the benefits of using STEAM method in tutoring in social sciences?
- A: STEAM method in tutoring is the effective tool to increase the creativity and effectiveness of education, also in social sciences.

Author/Presenter:



Dr. Magdalena Raftowicz Department of Applied Economics Wroclaw University of Environmental and Life Sciences Wroclaw, Poland





Thursday - June 09, 2022

Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

14. Discovering Why Business Students at a Minority-Serving University Show a Lack of Interest in Gaining STEM Skills

Upon conducted additional surveys, attended conferences, met with peers at local community colleges, and held student meetings, to collect both first-hand and second-hand data. While an in-depth discussion of my drill-down questionnaires is beyond the scope of this proposal, some objective evidences as highlighted in the paper. These evidences suggest that we need to offer more suitable STEM-designated business education and that women and minority students.

- Q: Why Business Students at a Minority-Serving University Show a Lack of Interest in Gaining STEM Skills?
- A: STEM education must be tailored and must be cultivated as early as possible.

Author/Presenter:



Dr. Myron Sheu Department of Information Systems and Operations Management California State University, Dominguez Hills California



Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

15. Preliminary Results Indicate a Cognitive Behavioral Healthy Lifestyle Intervention for PTSD Improves Sleep and Physical Activity

Posttraumatic stress disorder (PTSD) is associated with poorer health. In particular, a strong relationship between PTSD and heart disease has been documented. This project examined preliminary pilot data on the effects of a cognitive behavioral healthy lifestyle intervention among 22 adults with PTSD. Findings suggest that the healthy lifestyle intervention can improve sleep and physical activity in this population.

- Q: What are some benefits of addressing health problems/behaviors as adjunctive treatments in adults with PTSD?
- A: Preliminary findings suggest that using health behavior intervention as an adjunctive treatment may improve sleep and physical activity.

Authors/Presenters: Dr. Jeff Kibler Dr. Mindy Ma Dr. Jacquelyn Hrzich Ms. Julia Iannucci Ms. Emily Stewart-Stevens Ms. Megan Dann College of Psychology Nova Southeastern University Ft. Lauderdale, Florida



Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

16. NASA STEM Enhancement in Earth Science (SEES) High School Intern Program

SEES addresses the national need to increase the number of high school students, particularly under-represented and underserved, that will pursue STEM college degrees. Through a partnership of institutions and organizations that support STEM education we use NASA's earth observing satellites and missions as a catalyst for a high school intern program. SEES utilizes NASA assets to provide work experience, research, and educational opportunity for high school students from across the nation.

- Q: What do high school students gain from conducting authentic research?
- A: Utilizing NASA subject matter experts as mentors, high school students from across the nation analyze data, conduct research, and explore STEM careers.

Authors/Presenters:



Ms. Deborah Reynolds Commonwealth Charter Academy Texas Space Grant The University of Texas at Austin Austin, Texas



Mrs. Margaret Baguio Commonwealth Charter Academy Texas Space Grant The University of Texas at Austin Austin, Texas

Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

17. Snapshot: Reported Mental Health Beliefs of Veterans and Limited Resource Farmers Introduction

Farmers need support in many areas such as health. This study assessed participants' beliefs related to living safe lifestyles. Workshops were delivered Face-to-face and online, covering a range of farming practice topics. Preliminary results found respondents desired a need for information to be delivered face-to-face with many reporting experiencing little energy, and feelings of hopelessness during the day. It is concluded more specialized training based on participant input be provided.

Q: What health risk factor ranks as one of the highest among farmers?

A: Suicide.

Authors/Presenters:



Dr. Paula Faulkner Dr. Robert Cobb

Agribusiness, Applied Economics and Agriscience Education North Carolina Agricultural and Technical State University Greensboro, North Carolina



Hawaii University International Conferences

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Room:	Naio Room
Time:	10:30am - 12:00pm
Session:	Posters

18. Preparing Multicultural Scholars for the Global Society

This abstract is presented for the poster category and will detail how a funded project is preparing underrepresented students for majors and careers in agriculture and related sciences.

Q: What is one main reason minority students decide not to study abroad?

A: *Fear*.

Authors/Presenters:



Dr. Paula Faulkner Agribusiness, Applied Economics and Agriscience Education North Carolina Agricultural and Technical State University Greensboro, North Carolina Dr. Robert Cobb Dr. Arnab Bhowmik Dr. Salam Ibrahim Dr. Mulumebet Worku Dr. Tahl Zimmerman Agribusiness, Applied Economics and Agriscience Education North Carolina Agricultural and Technical State University Greensboro, North Carolina





Room:	Palolo 1
Time:	12:45 - 2:15pm
Session:	Applied Mathematics
Session Chair:	Dr. Anjan Biswas

I. Optical Soliton Perturbation with Quadratic-cubic Nonlinearity by Semi-inverse Variational Principle

This work retrieves bright optical soliton solution to perturbed nonlinear Schrödinger's equation that is studied with quadratic-cubic nonlinearity by the aid of semi-inverse variational principle. The perturbation terms include inter-modal dispersion, higher-order dispersions, nonlinear dispersion and self-steepening effect, the last two being with full nonlinearity. The existence criteria for these solitons will also be presented.

Q: Where is this model applicable?

A: Nonlinear Fiber Optics.

Author/Presenter: **Dr. Anjan Biswas** Department of Physics, Chemistry and Mathematics Alabama A&M University Normal, Alabama



Room:	Palolo 1
Time:	12:45 - 2:15pm
Session:	Applied Mathematics
Session Chair:	Dr. Anjan Biswas

II. Analysis of Simulated Stationary Processes Using The CDFA

The Hurst exponent measures a time series' tendency to regress substantially to the mean or cluster in a certain direction also known as long-memory behavior. The Detrended Fluctuation Analysis (DFA) method sometimes overestimates the Hurst exponent. To address this issue, the Cantor DFA (CDFA) was developed which is based on Cantor set theory. In this paper, we implement the CDFA method to simulated stationary processes to analyze their long-memory behavior. Computation time is also examined from a parallel optimization scheme for the CDFA. Experimental results show that computation time is cut in half when we use two processors instead of one. However, as the number of processors increases, computation time reduces at a decreasing rate until the law of diminishing returns set in.

Authors/Presenters: Dr. Maria C Mariani

Mathematical Sciences, Computational Science University of Texas at El Paso El Paso, Texas **Mr. William Kubin Mr. Peter K. Asante** Computational Science Program University of Texas at El Paso El Paso, Texas **Dr. Joe A. Guthrie** Department of Mathematical Sciences University of Texas at El Paso El Paso, Texas

Dr. Osei K. Tweneboah Department of Data Science

Ramapo College of New Jersey Mahwah, New Jersey

Room:	Palolo 1
Time:	12:45 - 2:15pm
Session:	Applied Mathematics
Session Chair:	Dr. Anjan Biswas

III. Solving Higher Order Differential Equations: An Integrating Factor Approach and Generalized Solutions to Self-Adjoint Differential Equations

In this work we present an integrating factor approach for solving certain higher order differential equations (DE's) and a generalized method for solving Self-Adjoint Differential Equations.

Authors/Presenters:	Dr. Maria P. Beccar-Varela
	Department of Mathematical Sciences
	University of Texas at El Paso
	El Paso, Texas
	Mr. Peter K. Asante
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	Austin Peay State University
	Clarksville, Tennessee
	Mr. Julien Esquivel
	Department of Mathematical Sciences
	University of Texas at El Paso
	El Paso, Texas

Hawaii University International Conferences
Room:	Palolo 2
Time:	12:45 - 2:15pm
Session:	Higher Education, Mathematics Education; Mentoring, Field
	Experiences; URM Education, Science Education at Sea

Session Chair: Dr. Elise Simmons

I. Persistence and Support for Black Students in STEM Majors at an HBCU

Every year we join in on the celebration of high school students all over the county graduating and preparing for the next phase of their adult life starting their careers and entering college. Surprisingly, some students who choose to continue their educational careers by enrolling in college are shocked to discover that they are not as prepared as they thought. I will offer databased insight into the success of Black undergraduate junior and senior STEM students who overcame such barriers.

- Q: How have the mathematical experiences of Black students at an HBCU contributed to their persistence in STEM majors?
- A: Supportive Faculty & Peer Community.

Author/Presenter:



Dr. Elise Simmons Mathematics Department Florida A & M University Tallahassee, Florida



Room:	Palolo 2
Time:	12:45 - 2:15pm
Session:	Higher Education, Mathematics Education; Mentoring, Field Experiences; URM Education, Science Education at Sea

Session Chair: Dr. Elise Simmons

II. Tips for Mentoring Teaching Candidates in their Field Experiences

When teacher candidates first arrive in their assigned field experience classrooms, they can feel like they are staring at a merry-go-round that is spinning very fast as they struggle to picture how they will get onto that hypothetical merry-go-round and stay on successfully throughout their field experience. The mentor's job is to help show them how. In this presentation, research-based mentoring tips will be provided including mentors not expecting perfection and using direct communication.

- Q: What tips are recommended for mentors to use when mentoring teaching candidates?
- A: Mentors can provide students with a schedule, not expect perfection from their students, encourage students to reflect upon their lessons; communicate directly, clearly and frequently with their students; and encourage their students to take notes during debriefing sessions.

Author/Presenter:



Dr. Kim McGarraugh Jones Dept. of Curriculum, Supervision, and Education Leadership Central Washington University Yakima, Washington



Room:	Palolo 2
Time:	12:45 - 2:15pm
Session:	Higher Education, Mathematics Education; Mentoring, Field
	Experiences; URM Education, Science Education at Sea

Session Chair: Dr. Elise Simmons

III. Initial Benefits and Outcomes of Experiential Learning Program in Complex Field Sciences

The Northern Gulf Institute and its partners developed the Mississippi State University – Science Education at Sea (MSU-SEAS) program with the intention to provide an engaging, experiential learning opportunity to those students who attend historically underfunded districts, regions of exceptionally high poverty (Title I Schools), and those districts with high percentages of underrepresented populations, as well as home-school students, who may otherwise not have the opportunity to undertake these often expensive, and sometimes "exclusive" educational experiences.

The following paper and associated presentation are a blueprint for the program and its initial outcomes.

- Q: What are the benefits of experiential learning when employed in a complex field science environment?
- A: Experiential Learning Theory, also known as learning by doing, implies that students learn and retain material more effectively when immersed and materially involved in the learning process as an educational experience. In this manner, knowledge is discovered by the student and therefore gains more cognitive meaning for the student.

Authors/Presenters: Mr. Jonathan Harris Dr. Jamie Dyer Northern Gulf Institute Mississippi State University Mississippi State, Mississippi Dr. Gray Turnage Geosystems Research Institute Mississippi State University Mississippi State, Mississippi Dr. Adam Skarke Department of Geosciences Mississippi State University Mississippi State, Mississippi

Thursday - June 09, 2022

Room:	Palolo 4
Time:	12:45 - 2:15pm
Session:	Integrating STEAM areas in exploring a given concept, phenomenon, or theme

WORKSHOP

How Literature can Help Integrate STEAM Areas into a Cohesive Learning Paradigm in Elementary School Education

This workshop offers ideas on how Literature can help integrate and provide valuable context for exploring STEAM subject areas. "Charlotte's Web" (2004) by White, E.B. is used for creating exploration activities designed for Elementary Education students. The integrated STEAM approach allows for a more thorough exploration, since each topic, concept, and phenomenon is explored from the perspectives of each of STEAM's five subject lenses. Multiple examples are presented and discussed.

- Q: How can STEAM activities be created around common themes based on a children's book?
- A: Join the workshop to see examples of such activities drawn from the context of "Charlotte's Web."

Author/Presenter:	Dr. Tanya Volkova
	Education Preparation Program
	St. Ambrose University
	Davenport, Indiana



Hawaii University International Conferences

Room:	Naio Room
Time:	12:45 - 2:15pm
Session:	Biology

WORKSHOP

Positive Health Outcomes of a Novel Active-Learning Medicinal Plants Course for Undergraduate STEM majors

This case study outlines successful pedagogical strategies of a semester long project that fostered engagement, data collection, analysis and synthesis for an evidence-based health recommendation by undergraduate students in a complementary and alternative medicine course for STEM majors. Fifty-two percent of students (N=24) had measurable improvements in their own health (lowered anxiety, stress, hypertension, A1C, weight or increased fiber, sleep, mood, exercise) and 26% (N=12) provided health information to a family member or organization.

Author/Presenter:

Dr. Anne Bower College of Life Sciences Department of Biological Sciences Jefferson University- East Falls

Philadelphia, Pennsylvania



Room:	Palolo 1
Time:	2:30 - 4:30pm
Session:	Science and Law; Sociology, Health Science; Science and Mathematics
	Education; Teacher Education
Session Chair:	Dr. Dipresh Prema

I. Increasing Access to Justice for People with Disabilities in Congregate Care Settings During COVID-19: Multidisciplinary Research in Science and the Law

Increasing Access to Justice for People with Disabilities in Congregate Care Settings During COVID-19: Multidisciplinary Research in Science and the Law

Authors/Presenters:



Dr. Dipesh Prema Dept. of Physical Sciences - Chemistry Thompson Rivers University Kamloops, British Columbia Canada



Dr. Ruby Dhand Faculty of Law Thompson Rivers University Kamloops, British Columbia Canada



Hawaii University International Conferences

Room:	Palolo 1
Time:	2:30 - 4:30pm
Session:	Science and Law; Sociology, Health Science; Science and Mathematics
	Education; Teacher Education
Session Chair:	Dr. Dipresh Prema

- II. Shifts in Lifestyle and Socioeconomic Circumstances Predict Change, for Better or Worse, in Speed of Biological Aging: A Study of Middle Age Black Women Using longitudinal data from the Family and Community Health Study, we investigated whether changes in social stress, diet, smoking, exercise, alcohol consumption, and relationship status predict changes in speed of biological aging assessed with three epigenetic clocks
 - Q: Can changes in stress and lifestyle in middle age produce a change in speed of biological aging?
 - A: Yes, changes in socioeconomic stress, diet, exercise and smoking can, for better or worse, change a middle-age person's speed of biological aging.

Authors/Presenters:



Dr. Ronald Simons Department of Sociology University of Georgia Athens, Georgia



Dr. Leslie Simons Center on Biological Embedding of Social Events and Relationships University of Georgia Athens, Georgia

Room:	Palolo 1
Time:	2:30 - 4:30pm
Session:	Science and Law; Sociology, Health Science; Science and Mathematics
	Education; Teacher Education
Session Chair:	Dr. Dinresh Prema

III. Explaining Girls' Delinquency: A Socio-contextual Model

The current study adds to the literature on the negative effects of economic hardship on families and youth by implementing the family stress model to illustrate how economic stress indirectly influences girls' delinquent behavior through its detrimental impact on family processes.

- Q: What is the main contribution to the understanding of girls' delinquent behavior?
- A: Past research has identified economic hardship and family factors as antecedents to delinquency. There is still a need to take into account the social context within which family interaction occurs. That is the focus of the family stress model, which emphasizes the way that economic hardship impacts family processes and ultimately children's socioemotional adjustment.

Authors/Presenters:



Dr. Leslie Simons Center on Biological Embedding of Social Events and Relationships University of Georgia Athens, Georgia



Dr. Ronald Simons Department of Sociology University of Georgia Athens, Georgia

Room:	Palolo 1
Time:	2:30 - 4:30pm
Session:	Science and Law; Sociology, Health Science; Science and Mathematics
	Education; Teacher Education
Session Chair:	Dr. Dinresh Prema

IV. Wasisk Kisihtohtit [Children made it]. Coding, Learning, and Constructing Digital/ STEM Literacies: The role of International Standards in the Design of Community Programs

This presentation will examine best practices for teaching elementary-aged students, in a workshop setting, to design and learn together in community coding programs.

The process of planning and implementing these programs will be discussed. Additionally, logically designing activities that move from simple to complex and are guided by international standards that link to other STEM curricular outcomes--that elementary students should be learning in schools today, will be emphasized.

Q: How can international STEM standards influence the creation of equitable out-ofschool programs for elementary-aged children, especially underrepresented communities?

Author/Presenter:



Dr. Shaunda Wood School of Education St. Thomas University Fredericton, New Brunswick Canada



Thursday - June 09, 2022

Room:	Palolo 2
Time:	2:30 - 4:30pm
Session:	STEM Student Success, Biology, Chemistry, Computer Science, Data
	Science, Engineering, and Mathematics, Robotics; Directing
	Undergraduate Research, Math modeling; Algebra, Calculus,
	Environmenal Engineering, Engineering Computer Applications,
	Programming

Session Chair: Dr. Mary Jo deGarcia Parker

I. Summer Bridge Research Programs - A COVID Challenge

Many summer bridge or other programs focus on initiating high impact activities (Kuh, 2008) as mechanisms of relationship-building among attendants and the university sponsoring these activities. Additionally, a broad spectrum of these bridge programs are grant-funded by either state or federal funding agencies. Mentored research within a university laboratory connects the undergraduate to career insights and cultural awareness of research. COVID- has altered this activity in two years.

Q: How can research take place within a quarantine space?

A: UHD has found a mechanism to circumvent the quarantine!

Author/Presenter:



Dr. Mary Jo deGarcia Parker Scholars Academy University of Houston-Downtown Houston, Texas



Continued on next page

Hawaii University International Conferences

Room:	Palolo 2
Time:	2:30 - 4:30pm
Session:	STEM Student Success, Biology, Chemistry, Computer Science, Data
	Science, Engineering, and Mathematics, Robotics; Directing
	Undergraduate Research, Math modeling; Algebra, Calculus,
	Environmenal Engineering, Engineering Computer Applications,
	Programming

Session Chair: Dr. Mary Jo deGarcia Parker

II. The Impact of COVID-19 on the Program of Excellence in STEM's Summer Academy

This presentation will share the impact of moving the in-person summer academy to a virtual platform. in two years.

- Q: What was the overall impact of COVID-19 on your STEM Academy?
- A: We were able to successfully transfer to a virtual platform and actually increased participation.

Authors/Presenters:



Dr. Tiffany Ardley Pharmaceutical Sciences Florida A&M University Tallahassee, Florida Dr. Jason Black Pharmaceutical Sciences Florida A&M University Tallahassee, Florida



Hawaii University International Conferences

Room:	Palolo 2
Time:	2:30 - 4:30pm
Session:	STEM Student Success, Biology, Chemistry, Computer Science, Data
	Science, Engineering, and Mathematics, Robotics; Directing
	Undergraduate Research, Math modeling; Algebra, Calculus,
	Environmenal Engineering, Engineering Computer Applications,
	Programming

Session Chair: Dr. Mary Jo deGarcia Parker

III. Assessing Design Process Knowledge in 1st and 3rd-year Undergraduate Engineers using a Toy Design Project

The purpose of this study is to compare the design process knowledge and application across the two student groups by assessing the effectiveness of the teaching methods and identifying their weaknesses.

- Q: Why did you select a Toy design project?
- A: It was easily accessible engineering design context and was relevant to many of the students' personal experiences.

Authors/Presenters:Ms. Emmanuella Ejichukwu
Dr. DeLean Tolbert Smith
Mr. Georges Ayoub
Industrial and Manufacturing System Engineering Department
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Dearborn, Michigan



Hawaii University International Conferences

Room:	Palolo 2
Time:	2:30 - 4:30pm
Session:	STEM Student Success, Biology, Chemistry, Computer Science, Data
	Science, Engineering, and Mathematics, Robotics; Directing
	Undergraduate Research, Math modeling; Algebra, Calculus,
	Environmenal Engineering, Engineering Computer Applications,
	Programming

Session Chair: Dr. Mary Jo deGarcia Parker

IV. Epidemiologic Models of COVID-19 Dynamics in NJ Counties

This research focuses on the dynamics of COVID-19 spreading in New Jersey counties. Two popular models were applied to simulate the original data, recover the missing part, and predict future situations: the SIR and the logarithmic model. Differences between the projected data and the actual data is analyzed. The constructed models help to better understand the virus spreading and to gain insight of the shared or distinct patterns presented through these counties.

Q: Which math model to apply?

A: It depends on the data.

Authors/Presenters: Dr. Aihua Li Department of Mathematical Science Montclair State University Montclair, New Jersey **Mr. Pedro Moranchel** Hudson County Community College Jersey City, New Jersey Mr. Courage Lahban Department of Physics Hudson County Community College Jersey City, New Jersey Mr. Siroj Niraula Department of Mathematics University of Hawaii Honolulu, Hawaii



Dr. Aihua Li

Room:	Palolo 4
Time:	2:30 - 4:30pm
Session:	Elementary Education, Teacher Education, Interdisciplinary Education,
	Interdisciplinary Areas of Math Education, Interdisciplinary Areas of
	Sciences, Education Technology, Interdisciplinary Areas of Arts &
	Humanities

WORKSHOP

Transforming Integrative Makerspace Education for STEM

The purpose of this NSF funded work in progress is to improve the quality and effectiveness of STEM education for PreK-4 Education faculty and pre-service teachers. Our project focuses on STEM teaching and learning by creating, implementing, and assessing faculty development, while incorporating maker space pedagogy where students engage in collaborative STEM learning experiences that will incorporate creativity, critical thinking, problem-solving, and communication skills.

- Q: What can the participants expect during the presentation?
- A: There will be opportunities throughout the presentation for participants to engage in the content, ask questions, and participate in a making "design thinking routine" activity. Participants will be able to share personal making experiences, STEM learning opportunities, and ways to connect the content to their personal lives.

Authors/Presenters:



Dr. Virginia Chambers School of Education Point Park University Pittsburgh, Pennsylvania



Dr. Kamryn York School of Education Point Park University Pittsburgh, Pennsylvania

Thursday - June 09, 2022

Room:	Naio Room
Time:	2:30 - 5:00pm
Session:	Indigenous Education

PANEL 1

Indigenous Studies Ph.D. Program at the University of Alaska Fairbanks

The Ph.D. Program in Indigenous Studies at the University of Alaska Fairbanks is an interdisciplinary framework for analysis to better understand the emerging dynamic between Indigenous knowledge systems, Western science, and higher education. As of May 2022, there were 26 people who earned a doctoral degree in Indigenous Studies with 15 self-identifying as Alaska Native and 4 self-identifying as Indigenous. This is a significant increase from 2007, when the fourth Alaska Native earned a Ph.D.Indigenous Education

- Q: What are options for Indigenous Peoples to pursue a doctorate degree for their community?
- A: The University of Alaska Fairbanks has offered the Indigenous Studies Ph.D. program since 2009.

Author/Presenter:



Dr. Sean Asik Topkok Center for Cross-Cultural Studies University of Alaska Fairbanks Fairbanks, Alaska



Hawaii University International Conferences

ACKNOWLEDGEMENT

Hawaii University International Conferences would like to thank the following people and organizations who have made our 2022 STEM/STEAM and Education Conference a success!

Maps: Courtesy of Hawaii Visitors & Convention Center

The Prince Waikiki Resort for the beautiful conference venue.

Keynote Speaker

We would like to thank **Dr. Leo Stocco**, Faculty of Engineering, Computer and Mathematical Sciences (ECMS), University of British Columbia, Vancouver, British Columbia, Canada for sharing his knowledge and skills with us.

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THE SESSIONS CHAIRS

Thanks to all the Session Chairs for your guidance of the participants and presenters in each session to maximize the experiences of the session attendees, to convey the thoughts and new ideas each brings to our conference. All timely presentations are important to expand the overall knowledge offered from many perspectives.

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We also want to thank each and every one who attended our conference for their contributions to the knowledge bases presented and the interactions of the attendees who generously shared their knowledge and expertise to enhance the conference experience for all who attended. We hope to see all of you back in Hawaii again one day in our continuing effort to bring those together in conferencing here in this magnificent environment as we look to the future of educational efforts in all parts of the world!





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