



2014 Hawaii
**EDUCATION
STEM
CONFERENCE**

June 16, 17 & 18 at the Ala Moana Hotel



UNIVERSITY of DUBUQUE

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HSGA

WELCOME ADDRESS

Aloha and welcome to the annual *STEM and Education Conference* held at the Ala Moana Hotel 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 experiences in their particular disciplines to share with each and every one.

We hope you enjoy your stay with our host, the Ala Moana Hotel, a prime location in the Ala Moana

area of Honolulu 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 Mai!

(All are Welcome!)

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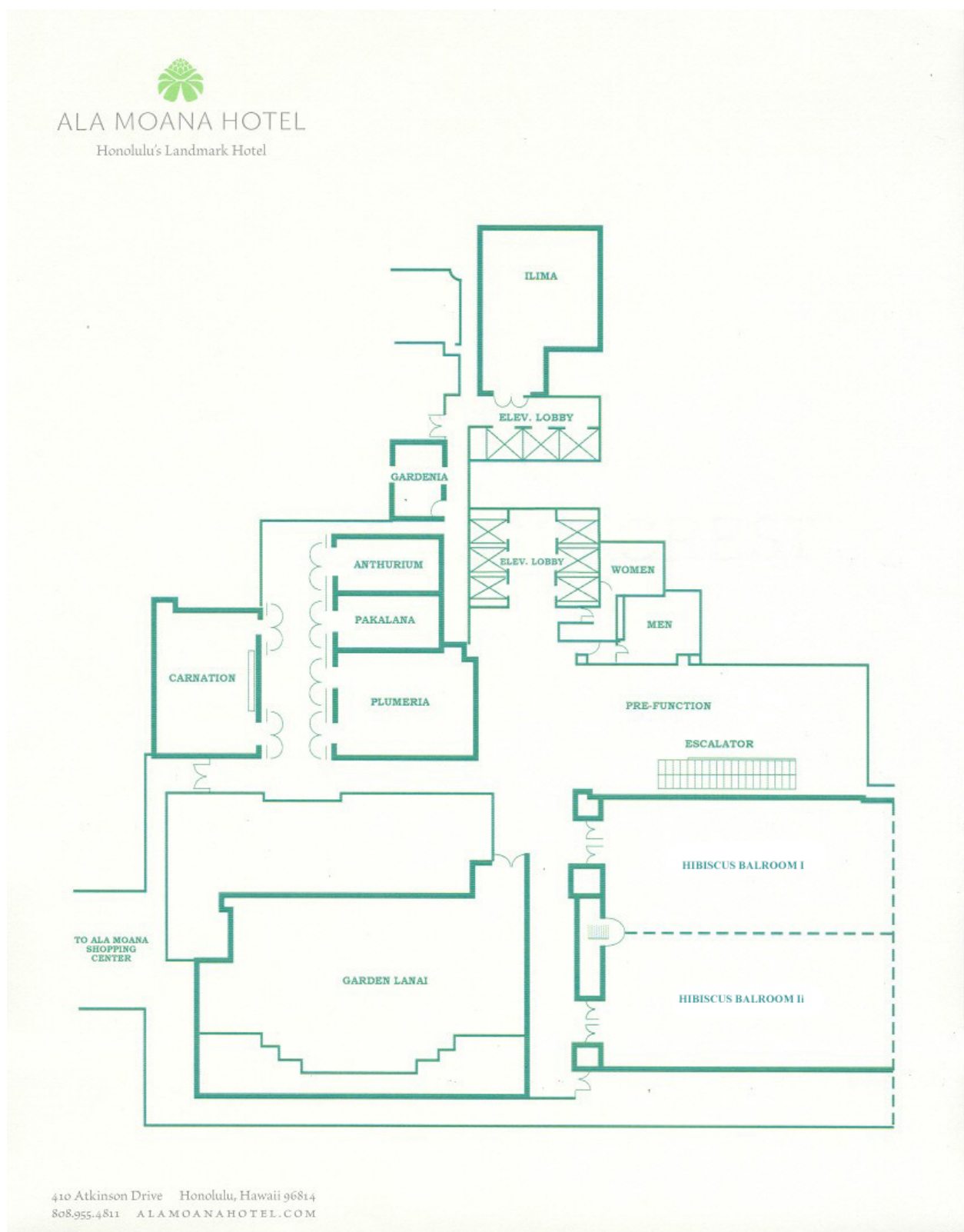
Please visit our website for more details on the next conference.

www.huichawaii.org

stem@huichawaii.org

Contact Number: 1-808-537-6500

ALA MOANA HOTEL: FLOOR PLAN (2ND FLOOR)



CONFERENCE SCHEDULE

Registration Hours – 2nd Floor

| | |
|---------------------|-------------------|
| June 15 – Sunday | 1:00 pm – 7:00 pm |
| June 16 – Monday | 6:30 am - 5:30 pm |
| June 17 – Tuesday | 6:30 am - 5:30 pm |
| June 18 – Wednesday | 6:30 am -1:00 pm |

Hawaiian Steel Guitar Presentation

Monday - June 16 Garden Lanai

Hula Performance

Ms. Sunshine Oschner – Solana’s Dance Mix

Monday - June 16 Garden Lanai

Keynote Speaker Address

Prof. Lee C. Payton – Columbia College, Chicago

June 17 Garden Lanai Ballroom

Exhibits:

June 16, 17, & 18 – 9:00 am to 4:00 pm Garden Lanai

Concurrent Session Times

8:15 – 9:45 AM * 10:00 – 11:30 AM * 12:45 – 2:15 PM * 2:30 – 4:00 PM * 4:15 – 5:45 PM

Poster Session

11:00 am – 12:30 pm, Ballroom

Breakfast – Ballroom

(Breakfast is complimentary)

| | |
|---------------------|-------------------|
| June 16 – Monday | 6:30 am – 8:30 am |
| June 17 – Tuesday | 6:30 am – 8:30 am |
| June 18 – Wednesday | 6:30 am – 8:30 am |

Tea Break

Monday to Wednesday - 10:30 am – 12:30 am/ 2:30 pm – 4:30 pm

Lunch Break

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

Session Chairs (Instructions)

- Introductions of Participants
- Start and complete sessions on time
- Chair leads the discussions and hold question and answer period at end of session



DAY 1

Monday – June 16, 2014

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A global leader in interactive teaching technologies, Mimio® designs innovative and affordable hardware and software solutions that increase teacher effectiveness and student engagement.

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HAWAIIAN STEEL GUITAR - PERFORMANCE

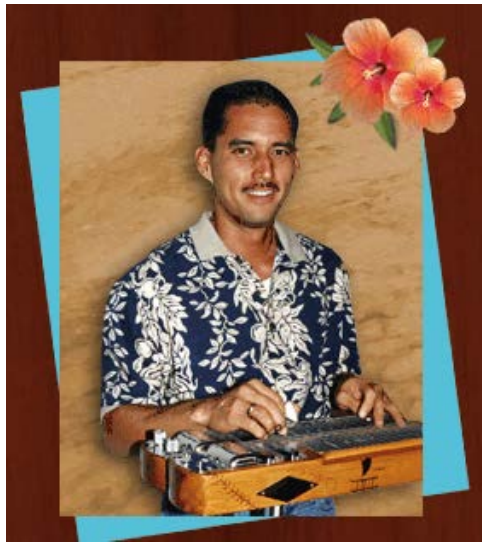
June 16, 2014 – Garden Lanai Ballroom

7:00 am – 8:15 am

HSGA

Hawaiian Steel Guitar Association

OFFICIAL SPONSOR



Mr. Kamaka Tom
Hawaii, Secretary Treasurer

The Hawaiian Steel Guitar Association is a worldwide organization promoting traditional Hawaiian music and the signature sound of Hawaiian steel guitar.

Our site contains information for HSGA members and for non-members who wish to learn about and listen to the beautiful music of the Hawaiian steel guitar.

We welcome you and encourage you to explore HSGA. If you enjoy your experience here, please let us know. We are always looking for new friends and new members.

Monday - June 16, 2014

Room: Anthurium
Time: 8:15-9:45am
Session: Physics and Astronomy, Science Education and Arts and Sciences
Session Chair: Dr. Lee C. Payton

I. Planet Under Pressure

The space between Earth's surface and the ionosphere forms a giant resonator - the Schumann Resonance Cavity. Global lightning activity creates standing waves within this resonator at a fundamental frequency of 7.83 Hz. What is the effect of industrialized noise pollution in this resonator? Does it damage the Earth?

Author/Presenter: **Dr. Lee C. Payton**
Cinema Art & Science
Columbia College Chicago

II. Experimental Study on Optical Properties of Atomically Thin Tungsten Disulfide.

We use photoluminescence and absorption spectroscopy to investigate the valence band splitting induced by spin orbital coupling and exciton and trion binding energies of single layer WS₂. Meanwhile, polarized PL is used to explore valley polarization and valley coherence.

Author/Presenter: **Mr. Bairen Zhu**
Physics Department
The University of Hong Kong

Mr. H.L. Zeng
Physics Department
Chinese University of Hong Kong

Mr. J.F Dai
Physics Department
South University of Science & Tech of China

Mr. Z.R. Gong
Physics Department
The University of Hong Kong

Mr. L. Xie
Physics Department
The University of Hong Kong

Dr. X. Chen
Physics Department
The University of Hong Kong

Mr. X.D. Cui
Physics Department
The University of Hong Kong

Continued on next page

III. Science is a Verb: A Professional Development for Elementary School Teachers to Improve Student Science Learning

This paper presents a professional development to improve elementary school teachers' willingness and ability to teach science as part of the daily curriculum and to improve elementary school students' science learning. This intervention is designed to enhance elementary school teachers' competency to teach science, transform the teachers' practice of teaching science in a way that will capture elementary students' interest, thereby motivating students toward increased achievement in science.

Author/Presenter: **Dr. Nancy Harding**
Graduate School of Education and Psychology
Pepperdine University

IV. Fostering Student Research – A Model for Student Success

Students of color are seriously lacking in numbers in graduate STEM areas. Many students are unaware of the benefits of graduate school or lack the research opportunities to successfully prepare them for graduate school. The Bowie State University, Washington Baltimore Hampton Roads – Louis Stokes Alliance for Minority Participation is successfully exposing students to the benefits of graduate school while fostering enriching research experiences with mentors.

Author/Presenter: **Dr. Dozier Uvetta**
Bowie State University

Monday - June 16, 2014

Room: Carnation
Time: 8:15-9:45am
Session: Inter-disciplinary Areas of Mathematics, Applied Mathematics,
Aerospace and Mechanical Engineering
Session Chair: Dr. Anjan Biswas

I. Quasi-stationary Optical Gaussons

The dynamics of optical solitons with log-law nonlinearity also known as optical Gaussons, in presence of several perturbation terms, will be addressed. The multiple-scale perturbation analysis will be applied to obtain quasi-stationary optical Gausson solution. Additionally, the definition of the phase introduced will reveal a couple of resonant conditions that cannot be otherwise retrieved.

Author/Presenter: Dr. Anjan Biswas
Department of Mathematical Sciences
Delaware State University

II. Predator-prey Dynamics in a Changing Environment

We propose a modified predator-prey model where the carrying capacity of the environment is dependent on the availability of a biotic resource. Stability, bifurcation and numerical analyses are presented to illustrate the system's dynamical behaviour. We examine special cases of the system and show that both permanence and extinction are possible.

Author/Presenter: Dr. Zlatko Jovanoski
School of Physical, Env. & Mathematical Sciences
UNSW Canberra

Dr. Hamizah Mohd Safuan
School of Physical, Env. & Mathematical Sciences
UNSW Canberra

Dr. Harvinder Sidhu
School of Physical, Env. & Mathematical Sciences
UNSW Canberra

Dr. Isaac Towers
School of Physical, Env. & Mathematical Sciences
UNSW Canberra

III. The Fourier Transform Solution for the Green's Function of Monoenergetic Neutron Transport Theory

Nearly 65 years ago, Ken Case published his seminal paper on the singular eigenfunction solution for the Green's function of the monoenergetic neutron transport equation with isotropic scattering. Previously, the solution had been obtained by Fourier transform. While it is apparent the two had to be equivalent, a convincing equivalence proof for general anisotropic scattering remained a challenge until now.

Author/Presenter: **Prof. Barry D. Ganapol**
Aerospace and Mechanical Engineering
University of Arizona

Monday - June 16, 2014

Room: Pakalana Room
Time: 8:15-9:45am
Session: STEM, Education / Environmental Science Computer Science and Engineering
Session Chair: Dr. Yajaira Mejia

I. A National Model for Increasing the Number of Minority Graduates in Environmental Sustainability

The City College of New York in collaboration with the US Department of Education developed and implemented a graduate program to support and train graduate students in Earth Sciences and Environmental Sustainability (ESES) fields. The ESES Graduate Initiative aims to increase the quality of the graduate experience through updated curriculums and exposure to cutting edge research projects in ESES fields.

Author/Presenter: **Dr. Yajaira Mejia**
Engineering Department
City College of New York

Dr. Jorge E. Gonzalez
Engineering Department
City College of New York

II. What Approaches Work Best for Teaching Secure Coding Practices?

The same vulnerabilities continue to appear in code, over and over again, yet many educational institutions continue to teach programming as they always have. Some high-tech companies have found it necessary to establish ongoing security training for their developers to make up for the absence of college-level, secure coding curriculum.

Author/Presenter: **Dr. Martha Crosby**
Dept. of Information & Computer Sciences
University of Hawaii Manoa

Dr. Sam Chung
Institute of Technology
University of Washington Tacoma

Ms. Leo Hansel
Institute of Technology
University of Washington Tacoma

Dr. Bai Yan
Institute of Technology
University of Washington Tacoma

Dr. Elizabeth Moore
Principle Evaluator

Dr. Carol Taylor
Eastern Washington University

III. How I Got Here - Trajectories of Undergraduate Latinas in STEM

This study examines the trajectories of fifteen Latinas in STEM at a private institution through the social cognitive career theory and resilience lenses. It highlights instances when they felt encouraged to pursue STEM, protective and risk factors they encountered, introduction to STEM degrees and their STEM experience prior to and at their university. There is an emphasis on how mentors, parents, professors, and academic programs impacted their educational experience and pathway into STEM.

Author/Presenter: **Ms. Rosalia Chavez Zarate**
Graduate School of Education
Stanford University

IV. A New Continuous Learning Environment Model to Improve Students' Skills and Professionals in STEM

The City College of New York in partnership with Hostos and La Guardia Community Colleges created The Alliance for Continuous Innovative Learning Environments in STEM (CILES) as model to increase the number of professionals in STEM fields.

Author/Presenter: **Dr. Yajaira Mejia**
Engineering Department
City College of New York

Dr. Jorge E. Gonzalez
Engineering Department
City College of New York

Monday - June 16, 2014

Room: Plumeria
Time: 8:15-9:45am
Session: Education, Technology, Engineering, and Computer Science
Session Chair: Prof. William Singhose

I. Development of an Interactive Textbook for Command-Shaping Control Methods

The paper presents an interactive textbook for teaching command-shaping control methods to engineering students.

Author/Presenter: **Prof. William Singhose**
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology

Mr. Arto Kivila
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology

Mr. Warren Seering
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology

II. Role of Nanotechnology and Graphics Processing Units in Cognitive

SEE ADDENDUM. PRESENTATION MOVED TO P63.

Author/Presenter: **Prof. Yenumula B. Reddy**
Computer Science
Grambling State University

III. VEGILAB and Aquaponics Indoor Growing System

A senior project that is a collaboration between a Japanese company and a university to design and fabricate an indoor growing system using the VEGILAB technique and Aquaponics system.

Author/Presenter: **Dr. Megumi Leatherbury**
Engineering Technology
Weber State University

| *Continued on next page*

IV. Rehabilitation Model for School Buildings

This paper presents a prioritization system for the rehabilitation of Kindergarten through 12th grade public school buildings in California. This system builds on the current school condition assessment process and assists to allocate rehabilitations funds in a rational manner that assures addressing and prioritizing the most deteriorated schools.

Author/Presenter: **Dr. Tariq Shehab**
Dept. of Civil Engineering & Construction Engineering Management
California State University, Long Beach

Dr. Adham Nouredine
Dept. of Civil Engineering & Construction Engineering Management
California State University, Long Beach

Dr. Elhami Nasr
Dept. of Civil Engineering & Construction Engineering Management
California State University, Long Beach

Dr. Reza Haghighat
Dept. of Civil Engineering & Construction Engineering Management
California State University, Long Beach

Monday - June 16, 2014

Room: Anthurium
Time: 10:00-11:30am
Session: Academic Advising and Counseling; Higher Education
Panel Workshop: Dr. Deborah Lowe Martinez

Ensuring Successful Educational Outcomes for Foster Youth in Higher Education

Foster youth are among the most underrepresented student populations on college campuses. Nationwide, it is estimated only 1-3% of foster youth graduate from college. Why is this so? Presenters will discuss causes for this abysmal statistic, best practices for advising and counseling to ensure better educational outcomes for foster youth, impact of college support programs and strategies for positive student development and engagement.

Author/Presenter: **Dr. Deborah Lowe Martinez**
Educational Opportunity Program
University of California

Dr. Julian Ledesma
Educational Opportunity Program
University of California

Dr. Jenny Vinopal
California Youth Connection



Monday - June 16, 2014

Room: Carnation
Time: 10:00-11:30am
Session: Mechatronics/MEMS/NEMS/Robotics/Automation; Education Technology; STEM Education / Foundations of Mathematics; Mathematics Education
Session Chair: Dr. Jared V. Berrett

I. Motivating Minority Students towards STEM through Hands On Pedagogy

How two successful STEM teachers are using technology project based learning to reach their minority Native American population and get them interested in STEM subjects. Learning theory suggests that much of the difficulty with getting students interested in STEM subjects may have links to teaching pedagogy. Projects like hovercrafts, robot's, solar array's, electric skateboard's, slime, bio water filters, laser scanning, 3D modeling, and rapid Prototyping are keeping students in school.

Author/Presenter: Dr. Jared V. Berrett
Utah State University Eastern

Dr. H. Scott Halliday
Navajo Technical

II. Teaching Classics in the Digital Age

It's not just classics that is changing: it's the whole academy. The rate and type of change that we see in the academy parallel those at play in the world at large. This presentation will explore some of those changes and their causes, examining shifts in the expectations of students (and their parents); changed attitudes toward reading and textuality; and the impact of new technologies such as the internet. Can educators cope with such changes and even exploit them in the learning environment?

Author/Presenter: Dr. John T. Kirby
Department of Classics
University of Miami

III. Augmenting Large-enrollment Instruction With Game-based Mechanics

Gamification is the application of game mechanics and elements in non-game contexts to engage and motivate users. A case study was conducted on a large-enrollment introductory computer science course that applied game mechanics in instruction. This paper details the setup, implementation, and outcomes of the study.

Author/Presenter: **Mr. Edward Meyer**
Dept. of Information & Computer Sciences
University of Hawaii at Manoa

Dr. Martha Crosby
Dept. of Information & Computer Sciences
University of Hawaii Manoa

Mr. Michael-Brian Ogawa
Dept. of Information & Computer Sciences
University of Hawaii at Manoa

IV. Developing Intercultural Competence in an Era of Globalization

SEE ADDENDUM. PRESENTATION MOVED TO DAY 2 P44

Author/Presenter: **Dr. Michael A. Moodian**
Brandman University

V. Assessing Learning in Advising: Utilizing Institutional Goals to Measure Learning Outcomes

This paper describes how learning outcomes were assessed following participation in a six-module advising model employing structured learning experiences for entering students at a Midwest public university. Institutional measures of academic performance and retention were examined relative to the number of modules completed. The results support incorporation of institutional goals to assess learning in advising.

Author/Presenter: **Dr. Carmalita M. Kemayo**
University of Illinois Springfield

Monday - June 16, 2014

Room: Pakalana
Time: 10:00-11:30am
Session: Education Technology, Statistics
Workshop

Improve Student Engagement and Statistical Literacy by Integrating Twitter, Ask3, and Your Stat Class.com into a Flipped Class Model for a First-Semester Statistics Course

Increased levels of understanding for students in a first-semester statistics course can be done by integrating alternative teaching modalities and intertwining the web, mobile apps, and social media into a successful flipped classroom. The presentation will discuss Your Stat Class.com's usefulness in a flipped class model, the employment of mobile learning via the Ask3 app for peer collaboration, and the implementation of Twitter for data collection, analysis, discussions, and weekly chats.

Author/Presenter: **Ms. Latricia Williams**
Department of Mathematics
St. Petersburg College





POSTER SESSION

Monday, June 16, 2014
11:00 am – 12:30 pm
Garden Lanai

Monday - June 16, 2014

Room: Ballroom
Time: 11:00 – 12:30 pm

1. Perspectives of Pre-Service Teachers on Students with Emotional Disabilities

The purpose of this research was to identify changes in perceptions of pre-service teachers enrolled in an undergraduate-level behavioral management course by conducting a pre- and post-test survey at the beginning and at the end of the course. The pre-service teachers were required to observe an alternative education special education classroom which contained students with emotional disabilities (ED) and learn strategies to help prepare them in the area of behavioral management.

Topic: Early Childhood Education / Elementary Education; Educational Foundations; Special Education

Author/Presenter: **Dr. Andrea P. Beam**
School of Education
Liberty University

Dr. Russ Yocum
School of Education
Liberty University

2. Living-Learning Community in Support of STEM Education

The major goal of the project was to provide scholarships and academic support to students pursuing undergraduate degrees in STEM (Science, Technology, Engineering, and Mathematics), who then entered graduate STEM programs or joined the workforce in STEM fields. This presentation was possible because of an NSF (National Science Foundation) S-STEM Scholarship grant awarded to Robert Morris University (RMU) in 2008, # 0806927.

Topic: Academic Advising and Counseling; Educational Foundations; Science Education; STEM

Author/Presenter: **Dr. Maria Kalevitch**
School of Engineering, Mathematics & Science
Robert Morris University

Ms. Cheryl Maurer
School of Engineering, Mathematics & Science
Robert Morris University

Dr. Paul Badger
School of Engineering, Mathematics & Science
Robert Morris University

Dr. Greg Holdan
School of Engineering, Mathematics & Science
Robert Morris University

Dr. Arif Sirinterlikci
School of Engineering, Mathematics & Science
Robert Morris University

Continued on next page

3. Is Freshman Advising Seminar Evolutionary?

First year seminar is regarded as an excellent strategy for group advising. Yonsei University is offering freshman advising seminar, Yonsei RC 101, as compulsory course for all freshmen. This course was originated from pre-enrollment program, and gradually has been developed to this status quo. Its evolutionary process and topics covered will be shared with the audience, who are interested in utilizing the freshman advising seminar as valuable avenue for group advising for freshman.

Topic: Academic Advising and Counseling

Author/Presenter: **Prof. Won-kyung Lee**
University College
Yonsei University

4. A Semiconductor Device Simulator Utilizing MATLAB

A device simulator that is functional and modular in nature is developed using MATLAB to allow for flexibility during programming and to allow for future development with relative ease. The program's main goal is to provide a tool that can supplement device modeling and to construct basic semiconductor equations using MATLAB tools. MATLAB's capability and inherent nature of handling matrices and matrix operations makes this approach an excellent technique for device modeling

Topic: Physical Sciences; Mathematics; Inter-disciplinary Areas of Sciences

Author/Presenter: **Prof. Hamid Fardi**
Department of Electrical Engineering
University of Colorado Denver

Dr. Gita Alaghband
Dept. of Computer Science & Engineering
University of Colorado Denver

5. Implementation of Student Advising for Freshmen Year in Residential College

In 2014, all students spend their freshman year in the Residential College of Yonsei university at International Campus. The Residential College consists of 12 houses with a total of 4,000 students. The college of freshmen performs the triple advising to support for all students and a widely emulated model of advising excellence, while students are planning their college life through e-portfolio system.

Topic: Academic Advising and Counseling

Author/Presenter: **Prof. JeongEun Nah**
University College
Yonsei University

Continued on next page

6. Emphasizing Core Calculus Concepts Using Biomedical Applications to Engage, Mentor and Retain STEM Students

This project provides a series of for-credit, applied learning modules that are given in parallel to the freshman and sophomore calculus courses. The modules are developed and led by faculty members. The proposed modules emphasizes mathematics and statistics relevant to four biomedical research areas 1) orthopaedics, 2) infectious diseases, 3) heat propagation in the human body, 4) mammography and radiology. Students participate in field trips to visit facilities and labs related to their module.

Topic: Curriculum, Research and Development / Mathematics / Biomedical Engineering and Technology

Author/Presenter: **Prof. Taufiqar R. Khan**
Department of Mathematical Sciences
Clemson University

Dr. Marilyn Reba
Department of Mathematical Sciences
Clemson University

Dr. Irina Viktorova
Department of Mathematical Sciences
Clemson University

Dr. Ellen Breazel
Department of Mathematical Sciences
Clemson University

Dr. John DesJardin
Department of Bioengineering
Clemson University

7. Conceptions of Teaching at a Saudi University

University It has been postulated that academic teachers will base their teaching practices on the theories they hold about teaching and learning. This study examines conceptions of teaching held by academic teachers at a university in Saudi Arabia.

Topic: Adult Education; ESL/TESL; Higher Education; Language Education

Author/Presenter: **Dr. Shaikah Madkhali**
College of Arts
King Saud University

| *Continued on next page*

8. Integrating Art in STEM

This presentation is a result of research on integrating the arts in STEM and will display the why, what, and how art is integrated in all disciplines. The work of children, ages 3-8 in an urban setting, many of whom are multi-handicapped and English Language Learners, and their study of artists and the integration of art and STEM will be shared. Specific lesson plans and activities will be shown.

Topic: Art Education; Early Childhood Education/Elementary Education; Science Education

Author/Presenter: **Dr. Lila Ubert Carrick**
New Jersey City University

9. a2-Antiplasmin and Plasminogen, and the Risk of Myocardial Infarction in Women

As measured by a plasma-based assay, decreased fibrinolytic potential has been shown to be a risk factor for arterial thrombosis.

Topic: Health Education; Science Education; Statistics

Author/Presenter: **Dr. Golnaz Bagheri Babak**
Dept. of Biostatistics & Community Medicine
Mazandaran University of Medical Sciences



Dr. Bagheri Babak
Dept. of Cardiology
Mazandaran University of Medical Sciences

Dr. Vahid. Mokhberi
Dept. of Cardiology
Mazandaran University of Medical Sciences

Dr. Razhan Piran
Dept. of Cardiology
Mazandaran University of Medical Sciences

10. Race and Disparate Workplace Experiences: Understanding the Postdoctoral Workforce

This paper examines the workplace experiences and perceptions of the postdoctoral workforce at the University of California (UC) using mixed methods. Specifically, postdoctoral work experiences were identified and compared across race and ethnicity to interpret disparate work experiences that can be attributed to various forms of discrimination, and better understand the extent to which international postdocs engage in union advocacy to address work-related discrimination.

Topic: Higher Education

Author/Presenter: **Dr. Maria Sayil Camacho**
Higher Education and Organization Change
University of California Los Angeles

Dr. Neal Sweeney
Institute for the Biology of Stem Cells
University of California Santa Cruz

11. The Array of Remainders

Remainders of successive divisions by a given divisor are organized in a particular order and placed in a matrix. The matrix, in turn, will leverage auxiliary applications such as accelerating Euler Phi function for max periods and simplified prime number verification.

Topic: Mathematics / IPFW

Author/Presenter: **Dr. Fereydun Mohandespour**
Mathematics / IPFW
Indiana University - Purdue University at Fort Wayne

Monday - June 16, 2014

Room: Anthurium
Time: 12:45-2:15pm
Session: Statistics, Mathematics Education
Session chair: Dr. Penelope Bidgood

I. Detection of Change Points Using the Wavelet Transform

We use wavelets within a Bayesian framework to identify changes in the form of shifts in data collected over time in the presence of noise and missing observations. Our main contribution is to investigate the usefulness of the procedure for real data sets, and to modify it by using the more recent lifting transform to identify change points, specifically using an adaptive lifting procedure due to Nunes et al. (2006).

Author/Presenter: **Dr. Arunendu Chatterjee**
Department of Mathematics
University of Wisconsin

II. Relating Statistics Assessment at the Tertiary Level to the Real World

This paper presents findings from various projects on assessment in statistics in which the author has been involved. Using real data in realistic scenarios has been shown to increase students' interest in, and enjoyment of, statistics, so the teaching, learning and assessment processes should reflect this.

Author/Presenter: **Dr. Penelope Bidgood**
Mathematics Department
Kingston University, UK

III. Engaging Students Through Real-Life Mathematics: Police Station Problem

When a city wants to build a new police station, the question that needs to be asked is where the best location to minimize the response time to a call when one comes in. This is the question that we will answer using a technique called method of random search. By analyzing the district breakdown of the city, the frequency of calls to each district, and the gridding of the city, we can answer the question, and begin to see how teaching secondary mathematics can be more meaningful, more engaging, and ultimately, more real.

Author/Presenter: **Dr. Carolyn Pinchback**
Mathematics Department
University of Central Arkansas

Dr. Dennis Show
Little Rock School District

Dr. Long Le
Mathematics Department
University of Central Arkansas

Monday - June 16, 2014

Room: Plumeria
Time: 12:45-2:15pm
Session: Education - Foreign Languages, Language Education, STEM and Education, Distance Education
Session Chair: Dr. Timothy W. Richardson

I. Accelerating Literacy Development in Chinese as a Foreign Language: Theoretical, Empirical and Anecdotal Perspectives on the Potential Usefulness of a Sophisticated Version of an Old Strategy

The Chinese writing system presents an extraordinary memorization challenge for alphabetic-language students of Chinese. Professionals who teach Chinese to such learners have tried to address this problem in many different ways in traditional academic contexts, but they have also begun to look more carefully at how some learners have developed exceptional skills using non-conventional resources in non-traditional settings. This presentation will focus on the potential usefulness of one such learner's approach—a sophisticated and theoretically persuasive strategy that relies on learner autonomy, logical systematization, and innovation to reduce the challenge inherent in the Chinese writing system, and to accelerate literacy development.

Author/Presenter: **Dr. Timothy W. Richardson**
Dept. of International Cultural Studies & World Languages
Brigham Young University—Hawaii

II. Interact with Spanish-speaking Community through Creative Project Developed in Small Groups Enhance Medical Spanish Learning.

Since 2006, the students have enjoyed learning medical Spanish by creating projects in which they apply course material to “real life” situations and share important health information with the Spanish-speaking community in Merced, Atwater and Planada.

Author/Presenter: **Ms. Yolanda A Pineda-Vargas**
Sch. of Social Sciences, Humanities & Arts
University of California, Merced

III. Latina Graduate Students' Experiences in STEM

This study provides an in-depth understanding of the risk and protective factors that ten Latina graduate students encountered in their STEM programs at a selective university. Risk factors included unsupportive professors and experiencing microaggressions. Protective factors included having a positive academic socialization experience and having a network of supportive mentors. These results may inform the creation of stronger interventions for underrepresented students in STEM fields.

Author/Presenter: **Ms. Liza Renee Lizcano**
Graduate School of Education
Stanford University

III. Interactive Assessment Techniques for Distance Education Courses

Alternative assessment techniques are essential for increasing student learning in blended/online courses. Rather than simply answer multiple-choice questions, students should choose meaningful, relevant activities. By using an academic contract, students will be active participants in their own learning. Contracts add a dimension of authenticity to distance education courses where students can learn, retain, and transfer more course content. Guidelines and examples contracts will be given.

Author/Presenter: **Dr. Brenda Litchfield**
Department of Professional Studies
University of South Alabama

Monday - June 16, 2014

Room: Carnation
Time: 2:30-4:00pm
Workshop/Panel: Special Education

Reexamining Current Spaces: Opportunities to Support Academic Social Skills with Students with Disabilities

Although the Common Core standards provide ample opportunities for students to receive depth of instruction, students with disabilities are often left without supports and strategies to actively engage in academic language and listening opportunities. This session will examine opportunities in which students with disabilities are given to practice their academic language and listening skills or in other words their academic social skills.

Author/Presenter: **Dr. Trisha Nishimura**
Department of Education
Whittier College



Monday - June 16, 2014

Room: Pakalana
Time: 2:30-4:00pm
Workshop/Panel: ESL/TESL

Using Improvisational Drama to Practice Grammar, Teach Spoken English and Empower ESL/EFL Students

Using improvisational drama activities, teachers can help ESL/EFL students improve their spontaneous speech while correctly practicing grammar structures. In this workshop, improv activities which work well in grammar classes, ones which students like and help students speak in a spontaneous and grammatically correct way will be shown. In particular, activities to teach articles, and verb tenses will be explained and demonstrated. These activities ensure that each student speaks.

Author/Presenter: **Dr. Elizabeth Whalley**
English Department
San Francisco State University





DAY 2

Tuesday – June 17, 2014



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KEYNOTE SPEAKER – PROF. LEE C. PAYTON

June 17, 2014

Garden Lanai Ballroom

7:30 am – 7:55 am

STEAM VS STEM

THE VALUE OF THE ARTS IN ALL AREAS OF EDUCATION

PROF LEE C. PAYTON



Professor Payton earned his MFA degree in 2000 in Film and Recording Arts from the Florida State University Film School. During the MFA program, Mr. Payton apprenticed with Academy Award winner Richard Portman, studying the fine art of sound mixing for the cinema. Mr. Payton also holds a Bachelor of Science degree in Visual Arts from Florida State University. For the past fifteen years, Payton has taught at five major colleges and universities, designed and taught multidisciplinary curriculums, worked with a diverse array of students, served as Assistant Dean and as Audio Coordinator, and has created numerous professional internship opportunities for students and graduates. As an artist, musician, filmmaker, writer, photographer and academician, Professor Payton believes that a dynamic synthesis of craft and technology is required to convey meaningful messages and to help inspire both clients and students. Some of these ideas can be expressed succinctly by a favored quote from Socrates: **'Education is the kindling of a flame, not the filling of a vessel.'**

Tuesday - June 17, 2014

Room: Carnation
Time: 8:15-9:45am
Session: Educational Measurement and Evaluation / Material science and Engineering.
Session Chair: Prof. Thomas Tannert

I. Evaluating the Impact of Changes to Team Size to the Effectiveness of Team-Based-Learning Format

Based on the hypothesis that student resistance to TBL in a second year Solid Mechanics course is mostly caused by insufficient team interaction, the goal of the study presented herein was to create a more interactive learning environment. These preliminary findings suggest that decreasing the team size in a TBL course does neither increase student or team performance nor does it improve the student evaluations of teaching effectiveness.

Author/Presenter: Prof. Thomas Tannert
Civil Engineering
The University of British Columbia

II. Fostering Global Collaboration between Engineering Students through a Robotic Design Competition

Students from five international universities collaborate together on designing and building competition robots. This paper showcases the design outcomes and highlights the key lessons from this collaboration.

Author/Presenter: Dr. James Potter
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology

Prof. William Singhose
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology

Mr. Ali AlSaibie
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology

Mr. Arto Kivila
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology

III. Engineering an Irregular Warfare (IW) Model

Engineering models of a complex system is difficult when you understand the system. When you don't understand the system the problem is compounded. For systems involving social interactions, the theoretical basis of the social sciences is poor. That is, we don't understand these systems. We have built an ontology of the IW domain that separates what we do know from what we don't know. This presentation sketches the engineering process for building an IW model using the IW ontology.

Author/Presenter: **Dr. Dean S. Hartley III**
Hartley Consulting

IV. The Importance of Place, Culture, and Trust in Sustainable Engineering Education

In both sustainable engineering design and engineering education, enduring solutions must incorporate place, culture, and trust. This paper describes a project that aims to both advance sustainable engineering design practice and engineering education within the Oglala Lakota Tribal Community through a National Science Foundation (NSF) funded Pre-Engineering Education Collaborative program developed between mainstream universities and a tribal college in South Dakota.

Author/Presenter: **Dr. Jennifer L. Benning**
Department of Civil and Environmental Engineering
South Dakota School of Mines and Technology

Dr. Foster J. Sawyer
Department of Geological Engineering
South Dakota School of Mines and Technology

Tuesday - June 17, 2014

Room: Pakalana
Time: 8:15-9:45am
Session: Probability; Statistics, Mathematics Calculus
Session Chair: Dr. Borek Puza

I. The Tail Functions Approach to Confidence Estimation

This paper reviews the method of tail functions (TFs) for constructing confidence intervals (CIs). The idea is to generalize the constant cutoffs (e.g. 0.025 and 0.975) in the definition of a CI to functions of the target parameter. The ordinary 2- and 1-sided CIs are defined by the constant TFs 1/2, 0 and 1. Under prior information, the TFs approach is an alternative to the Bayesian and can lead to improved CIs, whilst retaining frequentist coverage probabilities.

Author/Presenter: **Dr. Borek Puza**
Research School of Finance, Actuarial Studies & Applied Statistics
Australian National University

II. A New Solution for the 1D Radiative Transfer Equation

A new solution to the angularly discretized radiative transfer equation in a 1D slab medium with anisotropic scattering has been proposed. While similar to other solutions involving linear algebra, the proposed solution avoids instability caused by stiffness by expressing the complimentary part in terms of the hyperbolic sinh rather than simple exponentials. The effectiveness of this solution to produce extreme benchmark quality reflectances and transmittances with Wynn-epsilon convergence acceleration is demonstrated.

Author/Presenter: **Prof. Barry D. Ganapol**
Aerospace and Mechanical Engineering
University of Arizona

III. How Can Topology and GIS Enhance the Study of Asian Green Mussel (*Perna viridis*)?

How can topology and geographical information systems enhance the study of Asian green mussel (*Perna viridis*)? In this paper, the author explains the application of basic topological rules in enhancing geodatabases applied to oceanographic studies.

Author/Presenter: **Prof. Junalyn Navarra-Madsen**
Department of Mathematics & Computer Science
Texas Woman's University

Tuesday - June 17, 2014

Room: Plumeria
Time: 8:15-9:45am
Session: Education, Secondary Education, Teacher Education, ESL/TSL and STEM
Session chair: Dr. Karen M. Watt

I. The African American Male AVID Initiative: A Study of Impact on Student Aspirations and School Performance

This is a study of five high schools implementing the African American Male Initiative (AAMI). These high schools are externally funded for the purpose of recruiting and retaining more African American males into the college preparation program Advancement Via Individual Determination (AVID). Four years of student survey data and transcript data for a cohort of African American male high school students are presented in this study.

Author/Presenter: **Dr. Karen M. Watt**
College of Education
The University of Texas Pan American
Dr. Jeffrey Huerta
College of Education
The University of Texas Pan American
Dr. Jennifer Butcher
Department of Educational Leadership
Lamar University

II. Quality Assessment of New Graduates of the Faculty of Science and Technology, Thammasat University

The objectives of this project were to study job seeking status, working status, job satisfaction and the ability to apply the academic knowledge to the job of new graduates from the Faculty of Science and Technology, Thammasat University.

Author/Presenter: **Dr. Penkhae Hickinbottom**
Dept. of Math. & Statistics, Faculty of Science & Technology
Thammasat University

Chinnaphong Bumrungrsup
Dept. of Math. & Statistics, Faculty of Science & Technology
Thammasat University

Suman Muntup
Dept. of Math. & Statistics, Faculty of Science & Technology
Thammasat University

Benjamas Tulyanitikul
Dept. of Math. & Statistics, Faculty of Science & Technology
Thammasat University

III. Engaging STEM Teachers in Language Development and Literacy Practices for English Learners

This paper will discuss a study on the integration of language development and literacy practices for English language learners in math, science and technology classes taught by experienced STEM teachers in urban schools in the Northeast.

Author/Presenter: **Dr. Gladys Vega Scott**
Languages and Cultures
William Paterson University

Dr. Carrie Eunyoung Hong
Educational Leadership & Professional Studies
William Paterson University

Tuesday - June 17, 2014

Room: Anthurium
Time: 10:00-11:30
Session: Mathematics and STEM
Session Chair: Dr. Claude M. Tameze

I. Developing Mathematical Reasoning through the Five Strands of Mathematical Learning Proficiency

Developing Mathematical Reasoning Through the Five Strands of Mathematical Learning Proficiency is designed to address two key issues confronting America: the declining number of students proficient in mathematics and the number of students who receive baccalaureate and graduate degrees in STEM fields and the low percentage of all U.S. undergraduates who major in natural science or engineering as compared to other industrialized nations.

Author/Presenter: **Dr. Claude M. Tameze**
Department of Mathematics & Computer Science
The Lincoln University

Dr. Vesna Zeljkovic
School of Engineering & Computer Science
New York Institute of Technology

II. Successfully Flipping a Mathematics Classroom

This paper addresses the successful results of a flipped classroom for general education college students most resistant to mathematics. It reviews student performance and satisfaction and explains various pedagogical strategies such as small group work and monitoring student engagement. Challenges of a flipped classroom are examined including formatting the on-line presentations, insuring that students view them, and the limits of classroom interaction.

Author/Presenter: **Prof. Gregory Goeckel**
Department of Mathematics
Presbyterian College

III. STEM: Charting the Weather

Thirty teachers participated in a professional development course that integrated science, mathematics, literacy, and technology for elementary/middle level teachers. Using one of the lessons pertaining to weather, the speaker will share a fourth grade teacher's implementation of the project with his students as well as several the students' power point presentations.

Author/Presenter: **Dr. Carolyn Pinchback**
Mathematics Department
University of Central Arkansas

Dr. Uma Garimella
STEM Institute
University of Central Arkansas

Mr. Daniel Hope
Greenbrier Eastside Elementary

Continued on next page

IV. Increasing the Successful Participation of Students with Disabilities in STEM

Learn about challenges students with disabilities face in pursuing STEM fields and about interventions for students and for teachers and faculty and can make STEM academic programs and careers welcoming and accessible to individuals with disabilities. Examples from the award-winning DO-IT (Disabilities, Opportunities, Internetworking, and Technology) Center and useful resources will be shared in this presentation.

Author/Presenter: **Dr. Sheryl Burgstahler**
College of Education, DO-IT Center, UW Access Technology Ctr
University of Washington

Tuesday - June 17, 2014

Room: Carnation
Time: 10:00-11:30am
Session: Higher Education; Visual Arts, Media Arts
Session Chair: Prof. Kristine Hwang

I. Augmented Reality (AR) Design Research for connecting print and interactive media in Graphic Design Education

Augmented Reality (AR) apps put the print publication and digital media together. The interactive prints with AR let the readers enjoy traditional reading experiences and explore interactive adventures. AR design research in graphic design education lets students prepared for their professional practices in the industry of interactive prints with Augmented Reality.

Author/Presenter: Prof. Kristine Hwang
School of Art and Design
Kennesaw State University

II. Collaboration: Shaping tomorrow's Designers

Collaboration and teamwork are essential to creating the most effective and compelling visual communications and should be major components of graphic design education. This presentation explores an interdisciplinary collaborative project, which is comprised of 20 senior graphic design students working together on teams to create their graduation exhibition from initial ideas to completion.

Author/Presenter: Mr. Yuanliang Sun
Gwen Frostic School of Art
Western Michigan University

III. Dynamic Cinema Soundtrack

Our College offers a Weeks of Welcome celebration for incoming first-year students. To help enlighten our first-time Cinema students to the nature and nuance of cinema sound, I host a two-hour interactive workshop - Dynamic Cinema Soundtrack. Conference presentation includes video clips.

Author/Presenter: Dr. Lee C. Payton
Cinema Art & Science
Columbia College Chicago

IV. Learning Assessment in Higher Education: A Focus In Radio and Television Production

This article explores the relationship between assessment, accountability and student learning outcomes in Mass Media production. The purpose of developing assessment for students in higher education Radio and Television production courses is to determine how well students are learning in producing radio or television show. The article offers practical guidance and is designed to meet ever-increasing demands for improvement and accountability of Radio/Television instructors in higher education.

Author/Presenter: **Dr. Eric U. Dogini**
Mass Media Arts
Clark Atlanta University

Tuesday - June 17, 2014

Room: Pakalana
Time: 10:00-11:30am
Session: Engineering, Technology, Information and Computer Sciences
Session Chair: Prof. Dusan Soltes

I. Smart Technologies for E-Surveillance: Some Evident Benefits but Also Many Problems Regarding Protection of Personal Data and Disrespect for Fundamental Human Rights.

The proposed paper deals with applications of the contemporary smart ICT based surveillance technologies in the current cyberspace with highlighting many positives of these applications regarding the higher security but also presents some negatives regarding its misuse for violations of fundamental human rights regarding protection of personal data, privacy, confidentiality in communications, etc.

Author/Presenter: Prof. Dusan Soltes
Faculty of Management
Comenius University

II. A Modular Approach to Teaching Mobile APPS Development

To better relate mobile applications development to other topics from computer science and adapt to the continuous evolution in the mobile development environment, apps development course content is organized as a model consisting of five modules. Throughout these modules, mobile apps development is treated as an integral part of the computer science curriculum.

Author/Presenter: Dr. Rad Alrifai
Computer Science Department
Northeastern State University

III. Microscopic, Spectroscopic, and Voltammetric Studies for Development of Conductive Boron-doped Diamond Electrodes

The current microscopic, spectroscopic, and voltammetric investigations are directed towards improving the properties of boron-doped diamond electrode coating materials for their future use in clinical studies of deep brain stimulation (DBS) via fast-scan cyclic voltammetry (FSCV).

Author/Presenter: **Dr. Felicia S. Manciu**
Department of Physics
The University of Texas at El Paso

Dr. Kendall Lee
Department of Neurologic Surgery
Mayo Clinic

Dr. Jonathan R. Tomshine
Division of Engineering
Mayo Clinic

Dr. James N. Kruchowski
Mayo Clinic

Dr. Su-Youne Chang
Mayo Clinic

Dr. Kevin E. Bennet
Mayo Clinic

Tuesday - June 17, 2014

Room: Plumeria
Time: 10:00 - 11:30am
Session: Education, Curriculum, STEM
Session Chair: Dr. Sandra B. Nite

I. Increasing Calculus II Success with a Bridging Program

To improve success in Calculus II, we launched a one-week Bridge Program to strengthen skills of students who earned a B or C in Calculus I. Preliminary results are promising; 150 students enrolled. The 60 students who completed the survey at the end were very positive about the experience, believing it helped them recall previous skills and refine their calculus knowledge. The program was completely online with 15 hours of instruction through live tutors and online practice problems.

Author/Presenter: **Dr. Sandra B. Nite**
Teaching, Learning & Culture Department
Texas A&M University

Dr. G. Donald Allen
Texas A&M University

II. Designing Local, Meaningful, In-depth Learning Opportunities to Engage Teachers and Students of STEM

The multi-disciplinary reality/nature of engineering and science as academic disciplines and professions require that students first master STEM curricula in public schools, and that this curricula be designed and delivered in integrated ways by competent teachers throughout the 'education-pipeline'. This paper examines how learning opportunities can be designed to provide depth and breadth of learning in ways perceived as internally motivating by teachers and their students.

Author/Presenter: **Dr. Shaunda Wood**
School of Education
St. Thomas University

| *Continued on next page*

III. Producing Highly Qualified Mathematics and Science Teachers through an MAT Program at a Historically Black College in the United States

Xavier University of Louisiana, a Historically Black College, offers a Master of Arts in Teaching (MAT) degree for mathematics and science graduates to obtain teacher certification. This presentation will share with the audience the curriculum, strategies used to recruit and maintain qualified mathematics and science graduates, and success of the program thus far. The discussion will involve the various methods of funding the program and professional development used for the candidates.

Author/Presenter: **Dr. Rosalind Hale**
Division of Education and Counseling
Xavier University of Louisiana

Dr. Ahdija Baker Donatto
Division of Education and Counseling
Xavier University of Louisiana

IV. Half-Day AND Full-Day Kindergarten: Key Factors That Make a Difference in the Reading Achievement of Struggling Readers Literacy Intervention

The purpose of this study was to investigate the impact that literacy instruction in full-day and half-day kindergarten had on the literacy achievement of struggling readers receiving literacy intervention. Findings from this qualitative study showed that it was the quality of instruction, rather than the extended time of the full-day kindergarten program, that impacted the gains made in reading by these two groups of kindergarten students.

Author/Presenter: **Dr. Kari Pawl**
Concordia University Chicago

V. Developing Intercultural Competence in an Era of Globalization

SEE ADDENDUM. FROM DAY 1 PAGE 16.

This study investigated the effects of 18 months of doctoral studies, including an international experience, on the intercultural competence levels of doctoral students majoring in organizational leadership. The Intercultural Development Inventory, a survey assessment designed to quantitatively measure intercultural sensitivity, was administered to the sample through a repeated measures design.

Author/Presenter: **Dr. Michael A. Moodian**
Brandman University



POSTER SESSION

Tuesday, June 17, 2014
11:00 am – 12:30 pm
Garden Lanai

Tuesday - June 17, 2014

Room: Ballroom
Time: 11:00 - 12:30pm

1. URI's Noyce Teacher Scholarship Program: Recruitment Efforts Year 1

URI's Robert Noyce Teacher Scholarship Program seeks to increase the overall number, diversity, and percentage of our teacher education candidates with STEM backgrounds. We actively recruited undergraduate STEM majors and STEM professionals who might otherwise not have considered a career in K-12 teaching and will be supporting them through their induction years. A range of recruitment strategies were used. Results of our recruitment efforts will be shared.

Topic: Early Childhood Education / Elementary Education; Science Education; Secondary Education; Teacher Education

Author/Presenter: **Dr. Anne M. Seitsinger**
School Of Education
University of Rhode Island

Dr. Kathy Peno
School Of Education
University of Rhode Island

Dr. Jay Fogleman
School Of Education
University of Rhode Island

Dr. Cornelis de Groot
School Of Education
University of Rhode Island

Dr. David Byrd
School Of Education
University of Rhode Island

Dr. Christine Dolan
School Of Education
University of Rhode Island

Dr. Joan Peckham
Department of Computer Science
University of Rhode Island

Dr. Jessica Libertini
Department of Mathematics
University of Rhode Island

2. Motivation Matters: Designing Learning Environments to Ignite, Excite, & Engage Learners.

How might we motivate students to actively engage with course content? During this workshop, I will share the theoretical underpinnings of my newly crafted C7 Motivation Model, identify and explain the components of the model, and share the corresponding SAMES instrument used to monitor student attitudes, motivation, engagement, and success. Each participant will then begin a draft C7 design. To conclude the workshop, participants will share their draft designs for peer review and feedback.

Topic: Curriculum, Research & Development; Education Technology; Health Education.; Language Education; Science Education; Social Studies Education; Teacher Education; Connected Curriculum; Inter-dis. Areas of Science; Embedded Technology; Education Technology; Mathematics Education.

Author/Presenter: **Dr. Jodi J. Haney**
Department of Environment and Sustainability,
Bowling Green State University

3. Creating "Fireworks" in Your Mathematics and Chemistry Classroom through Problem Based Lessons

The 5E inquiry based lesson “Fireworks” explores problem based applications of instructional content in an engaging, hands-on, STEM cross-curricular presentation.

Topic: Engineering and Mathematic/Algebra; Applied Mathematics; Mathematics Education.

Author/Presenter: **Ms. Kathryn Volz**
GSKyTeach
Western Kentucky University

Dr. Martha Day
GSKyTeach
Western Kentucky University

Dr. Lisa C. Duffin
Jefferson County Public Schools, Louisville

4. Inquiry-Based 5E Lesson in a High School Geometry Classroom: The Rediscovery and Applications of the Golden Ratio

The 5E inquiry model of instruction is a constructivist teaching methodology that allows students to develop their own pathways to understanding of novel concepts. In this lesson, high school geometry students explore the golden ratio of phi. Students discover and derive the golden ratio through a guided inquiry activity. This methodology allows students to become immersed in the subject matter while creating their own explanations of mathematical concepts.

Topic: Art Education; Secondary Education; Visual Arts / Geometry; Mathematics Education

Author/Presenter: **Mr. Philip Cooper**
Western Kentucky University

Dr. Martha Day
GSKyTeach
Western Kentucky University

Dr. Lisa C. Duffin
Western Kentucky University

5. Practical Tips for Teaching English Vowels to Chinese Speakers

This poster session will give practical tips for ESL teachers to present North American English vowels to speakers of Chinese (and other languages). Points will include a comparison of notation systems, variations caused by vowel shift and r-coloring, clarification of confusing terminology, and recommendations for avoiding the influence of tone in instruction.

Topic: ESL/TESL

Author/Presenter: **Prof. Barry D. Griner**
American Language Institute
University of Southern California

6. Internal Stress, Microscopic, and Spectroscopic Analysis in Cadmium Telluride Grown by Close-space Sublimation

Since development of such devices requires a high quality and low defect material, the goal of this study is to microscopically and spectroscopically examine not only crystallinity, but also the induced stress in the material due to the effect of substrate orientation. This information is valuable if optimization of sample growth conditions is envisioned.

Topic: Material science and Engineering.

Author/Presenter: **Ms. Jessica G. Salazar**
Department of Physics
The University of Texas at El Paso

Ms. Stella A. Quinones
The University of Texas at El Paso

Ms. Aryzbe Diaz
The University of Texas at El Paso

Mr. William G. Durrer
The University of Texas at El Paso

Mr. Jose A. Valdez
The University of Texas at El Paso

Ms. Celia Garcia
The University of Texas at El Paso

Dr. Felicia S. Manciu
Department of Physics
The University of Texas at El Paso

7. Nicotinamide Adenine Dinucleotide Phosphate Oxidase subunit-4 (Nox-4) and Peroxisome Proliferator Activated Receptor (PPAR) - a expression in Human Primary Renal Proximal Tubule Epithelial Cells is increased by Angiotensin II

Renal proximal tubule epithelial cells (RPTEC) facilitate solute and water reabsorption along the nephron. Angiotensin II (Ang II) promotes sodium reabsorption in the proximal tubule and causes hypertension by increasing Nox-4 expression. PPAR-a receptors are located in the RPTEC and have anti-hypertensive properties, however the role of PPAR-a on RPTEC function is not well understood. The goal of this study is to determine if Angiotensin II will increase Nox-4 and PPAR-a expression in RPTEC.

Topic: Physiology; Biological Sciences

Author/Presenter: **Ms. Jasmine Blackmon**
Department of Biological Sciences
Howard University

Mr. Dan Zhang
Department of Physiology and Biophysics
Cancer Center

Dr. Tamara Hudson
Cancer Center
Howard University

Dr. Dexter L. Lee
College of Medicine
Howard University

| *Continued on next page*

8. Ion Channels and Glioma Cells

This project will identify the role of ion channels in glioma metastasis. We will conduct a systematic review which will allowed us to gain a comprehensive overview of all published works focusing on ion channels and glioma metastasis. Ion channels glioma was searched on Pubmed-Medline and specific articles were included in our review. Data was extracted using a data extraction form. This information will be used to conduct lab research to further explore our topic.

Author/Presenter: **Ms. Assata Pyatt**
Bowie State University

Dr. Mikhail Robinson
Bowie State University

Dr. Julia Foster
Bowie State University

9. A Polymorphic Alu Repeat on Chromosome 8q24 is Associated with Prostate Cancer Risk in African Americans

Our research study is primarily focused on how a polymorphic alu repeat on chromosome 8q24 is associated with prostate cancer risk in African Americans. We used molecular biology techniques to study this topic.

Topic: A Polymorphic Alu Repeat on Chromosome 8q24 is Associated with Prostate Cancer Risk in African Americans

Author/Presenter: **Ms. Symone Jordan**
Department of Medicine
Howard University

Dr. Rick Kittles
Department of Medicine
University of Illinois at Chicago

Dr. Terry Fitzpatrick
Department of Medicine
University of Illinois at Chicago

10. Information and Computer Sciences; Mathematics

Encouraging Student Interest in Quantitative Reasoning Courses

The following approaches are useful in teaching programming languages and quantitative reasoning courses. The approaches include: designing projects with animation and multimedia effects to help students visualize results; using real life examples to explain intuitive ideas of mathematical concepts/formulas; giving step by step illustration; and increasing lab time.

Topic: Education Technology; Science Education; Visual Arts /
Information and Computer Sciences; Mathematics

Author/Presenter: **Dr. Tong Yi**
Department of Mathematics & Computer Science
Iowa Wesleyan College

11. The Anti-derivative of e^x

This paper academically defines the anti-derivative of $y = e^x$, the function used in a variety of standardized normal distribution applications. It is significantly different from an approximation because it defines Y , the integral of y , as a family of y for the first time

Author/Presenter: **Dr. Fereydon Mohandespour**
Mathematics / IPFW
Indiana University - Purdue University at Fort Wayne

12. Increasing Student Motivation and Performance through Inquiry Based Learning with STELLA Systems Thinking and Simulation Software

SEE ADDENDUM. MOVED FROM P53.

The effect of Collaborative Project Based Learning (CPBL) on student performance and motivation in undergraduate mathematical modeling classes is investigated. The inquiry based collaborative learning strategies that incorporate The American Museum of Natural History as a Learning Laboratory and the STELLA Systems Thinking software are introduced.

Author/Presenter: **Dr. Lia Leon Margolin**
Mathematics Department
Marymount Manhattan College, New York

Tuesday - June 17, 2014

Room: Anthurium
Time: 12:45-2:15pm
Session: Mathematics, Education, Computer Science
Session Chair: Dr. Carla Gerberry

I. Increasing Student Motivation and Performance through Inquiry Based Learning with STELLA Systems Thinking and Simulation Software

SEE ADDENDUM. MOVED TO DAY 2 POSTER P52.

The effect of Collaborative Project Based Learning (CPBL) on student performance and motivation in undergraduate mathematical modeling classes is investigated. The inquiry based collaborative learning strategies that incorporate The American Museum of Natural History as a Learning Laboratory and the STELLA Systems Thinking software are introduced.

Author/Presenter: **Dr. Lia Leon Margolin**
Mathematics Department
Marymount Manhattan College, New York

II. Mathematics Anxiety and Preservice Teacher's Performance in Geometry

This study examines pre-service elementary school student's mathematics anxiety and how it changes over the course of a Geometry course.

Author/Presenter: **Dr. Carla Gerberry**
Mathematics and Computer Science Department
Xavier University

III. PISA Functional Literacy as Represented in Taiwanese Mathematics Textbooks

PISA's "Functional Literacy" emphasizes the theoretical concept of mathematics as a human activity. From this pedagogical point of arrival, the "The mathematization cycle" serves as an instructional cycle which is a crucial feature in PISA's designed assessment. This study was focused on the content and design of Taiwanese mathematics textbook problems for secondary school.

Author/Presenter: **Dr. Suiv Fen Lee**
SUNY New York State Farmingdale College
Adelphi University

Tuesday - June 17, 2014

Room: Carnation
Time: 12:45-2:15pm
Session: Education, Social Science; Urban and Regional Planning
Session Chair: Dr. Tulasi R. Joshi

I. Creating Economies of Scale for Economic Growth: A Panacea for West Virginia's Economic Growth

Industrial revolution laid foundation for the current scope of economies of scale and world urban growth which are intertwined with productivity and profits. West Virginia with declining population and lack of job opportunities has yet to take advantages of this mechanism. This proposal examines how economies of scale can be achieved in the state of West Virginia to create economic growth in the context of regional urban planning.

Author/Presenter: **Dr. Tulasi R. Joshi**
Department of Behavioral Science
Fairmont State University

II. The roles of School Administrators in Assuring Cultural Competent Schools

School administrators should set the tone for an effective school climate that supports cultural diversity. School administrators must have effective training and skills in cultural diversity in order to implement professional development for the entire staff.

Author/Presenter: **Dr. Jane A. Crossley**
Graduate Programs in Education Department
Chicago State University

III. The Precursors of Professionalism of Business Graduates and the Ethical Implications of these Precursors for Business Education and the Profession

This study uses the framework of professionalism to examine the values and attitudes of business students as they graduate from their programs and join their profession.

Author/Presenter: **Dr. Lana Nino**
Department of Business Administration
Whittier College, California

Tuesday - June 17, 2014

Room: Pakalana
Time: 12:45-2:15pm
Session: Education, STEM
Session Chair: Prof. Peter Borgesen

I. On the Combination of New Perspectives and Conventional Wisdom Needed in High Tech Industries

Industries such as electronics and solar cell manufacturing have a growing need for cross disciplinary engineers who question common knowledge and practices. However, a better understanding of the industry and the job is required for such engineers at the entry level. Attempts to teach all of this in the class room, the research lab and industry will be discussed.

Author/Presenter: Prof. Peter Borgesen
Systems Science & Industrial Engineering
Binghamton University

II. Increasing STEM Students' Performance: Using Models to Improve Visualization Skills

One of the biggest problems engineering students are facing is visualization. In order to help students to improve this skill and make teching and learning more productive and interesting, I have developed a teaching strategy based on using models. Experience in using models shows significant improvements in student performances.

Author/Presenter: Prof. Slobodan Urdarevik
Industrial & Manufacturing Engineering
Western Michigan University

III. Using Tiered Testing in Conjunction with Thoughtful Reflection to Bolster Students' Thinking in Chemistry

This research describes a high school chemistry teachers' effort to increase student's critical thinking, reflection, and metacognition using multi-tiered tests as tools for learning in addition to record.

Author/Presenter: Mr. C. Bennett Johnson
GSkyTeach
Western Kentucky University

Dr. Lisa C. Duffin
GSkyTeach
Western Kentucky University

Dr. Martha M. Day
GSkyTeach
Western Kentucky University

Continued on next page

IV. Precalculus for Scientist and Engineers

Mathematical Structure is introduced in Precalculus mathematics. Students are required to write proofs and create their own algorithms. In addition, they must justify each equality they write with an axiom, definition or theorem.

We targeted STEM freshmen. The prerequisite for the course is a passion for learning and a desire for a challenge. Students are given permission to register for the course after discussing the challenges of the material with the instructor.

The results are marvelous!

Author/Presenter: **Prof. Andrew D. Jones, Jr.**
Department of Mathematics
Florida A&M University

Tuesday - June 17, 2014

Room: Plumeria
Time: 12:45-2:15pm
Performance: Art Education; Music Education; Visual Arts; Ethnomusicology
Information and Computer Sciences; Technology,
Engineering and Mathematics / Education Technology

Imágenes de España: Images of Spain, through photos, poetry and text

Perhaps best utilized as a model for those wishing to incorporate visual art, technology and fine arts, this sixty minute solo piano performance combines music, art, photography and technology as a way to educate and entertain the audience of societal influences on music from the Nationalist culture of Spain.

Author/Presenter: **Dr. Dena Kay Jones**
Department of Music
The University of Texas at El Paso



Tuesday - June 17, 2014

Room: Anthurium
Time: 2:30-4:00pm
Panel: Curriculum, Research and Development; Higher Education; Social Science

**Diversity Mapping: How Committed is Your College/University to a
Diversity/Inclusion? A Demonstration Panel**

On this panel, Dr. Kona Halualani, senior lecturer and a higher education professor, will engage in a conversation with a panel of four other panelists. The panelists will be representing various diversity-related topics, including a deep dive into campus structure, grounded in diversity, in terms of values, principles, and institutional goals, policies, and processes. She will demonstrate the diversity of the panelists' experiences and the diversity of the panelists' experiences.

Author/Presenter: Dr. Kona Halualani
Communication Studies
San Jose State University



Tuesday - June 17, 2014

Room: Carnation
Time: 2:30-4:00 pm
Panel: Gender and STEM

Women's Experiences in STEM Classes

We will discuss different aspects of the experiences of women in STEM classrooms at the elementary (Presenter 1), undergraduate (Presenter 2), and graduate levels (Presenter 3). Successful interventions and recommendations for the retention of women in STEM will also be discussed (Presenter 4). Each presenter will have approximately 15 minutes to present, the discussant will have 15 minutes to critique/add to the presentation, and there will be 15 minutes for questions and discussion.

Author/Presenter: **Ms. Liza Renee Lizcano**
Graduate School of Education
Stanford University

Ms. Shima Salehi
Graduate School of Education
University of Wisconsin-Madison

Ms. Sonia Olivia Ibarra
Graduate School of Education
Stanford University

Ms. Rosalia Zarate
Graduate School of Education
Stanford University

Ms. Lauren Aguilar
Stanford University

Tuesday - June 17, 2014

Room: Plumeria
Time: 2:30-4:00pm
Workshop: Teacher Education

Learning to Teach Through Critical Explorations in Science

Hands-on workshop presenting a Science Methods course within a master's level, pre-service, program that uses Critical Exploration as the pedagogical foundation and methodological approach. Course structure and design, assignments, clinical activities, and standards will be reviewed. Attendees will engage in several standards-based critical explorations and examine student work samples and assignments. Three course inspired studies will be discussed. Take home hand-outs and materials.

Author/Presenter: **Dr. Susan Rauchwerk**
Elementary Education
Lesley University

Dr. Nicole Weber
Lesley University





Day 3

Wednesday – June 18, 2014

Wednesday - June 18, 2014

Room: Plumeria
Time: 8:15-9:45am
Session: Education, STEM
Session Chair: Dr. Felicia Sawyer

I. Impact of University Teacher Education Programs on Student Teachers

The purpose of this study was to identify effective characteristics of student teaching experiences of historically African American institutions in comparison to other state and private universities. Impact of University Teacher Education Programs on Pre-service Teachers.

Author/ Presenter: **Dr. Felicia Sawyer**
NC A&T State University

Dr. Sharon Hunter
NC A&T State University

Dr. Gloria Elliott
NC A&T State University

Dr. Bobbie Little
Shaw University

II. Citizen Science: Inquiry Based Learning in the Core Curriculum to Advance College Science Literacy

To develop scientific literacy in our students, Citizen Science was added to Bard College's common curriculum. During this, all first year students participate in scientific inquiry. Students take part in problem-based learning, laboratory experimentation, and computing activities. Varied strategies are used to develop students' abilities to critically evaluate scientific evidence, and recognize strengths and limitations of common tools. Student outcomes from years 1-4 will be discussed.

Author/Presenter: **Dr. Amy F. Savage**
Citizen Science Program
Bard College

III. UT Transportation STEM Academy for Teachers

This paper will provide a summary of key aspects of the pilot implementation CTR's, UT Transportation STEM Academy for Teachers. Topics to be covered will include the design and implementation of the academy, feedback from participating teachers, lessons learned, recommendations for transferability of the approach, an assessment of resulting products and a quantitative review of the breadth of impact of the academy's first year.

Author/Presenter: **Dr. Jerry Everett**
Center for Transportation Research
University of Tennessee

IV. Girls Engages in Math and Science University (GEMS.U)

Girls Engaged in Math and Science University (GEMS-U) is an innovative statewide project, spearheaded by the Alabama Department of Education, designed to develop and disseminate high quality materials and training resources. It is hosted by the Alabama Learning Exchange (ALEX), a nationally recognized state web portal. GEMS-U actively engages girls in Science, Technology, Engineering, and Math to better prepare them for the 21st Century workforce.

Author/Presenter: **Shannon Parks**
Alabama Dept of Education

Hailey Ridgeway
Alabama Dept of Education

Stephanie Baird
Alabama Dept of Education

Tiffany Davies
Alabama Supercomputer

Wednesday - June 18, 2014

Room: Anthurium
Time: 8:15 – 9:45 am
Workshop: Reading Education; Teacher Education

Act II- Reading in the Adolescent Years

Title of Workshop Presentation: Act II- Reading in the Adolescent Years

During this interactive workshop, participants will be given a brief overview of the developmental characteristics of adolescent learners and see demonstrations of effective strategies to improve reading comprehension, vocabulary knowledge, and fluency.

Author/Presenter: **Dr. Kari Pawl**
Concordia University Chicago



Wednesday - June 18, 2014

Room: Carnation
Time: 8:15 – 9:45 am
Workshop: Curriculum, Research & Dev.; Educational Admin.; Edu. Policy & Leadership; Science Edu. Teacher Edu. STEM /Other Area Related to Sciences; Technology, Engineering & Math./STEM/Inter-disciplinary Areas of Mathematics; STEM

Developing a Model for Effective STEM Education

With the current emphasis on STEM careers, there has been a dramatic increase in the number of schools and programs touting a STEM focus. Yet, the discussion of STEM education has not provided robust opportunities to explore the processes, tools, and resources that characterize effective STEM teaching, learning, and assessing. This session will provide an emerging model for STEM education that gets what is means to develop learners who have STEM literacy.

Author/Presenter: **Dr. David K. Pugalee**
Center for STEM Education
UNC – Charlotte

Ms. Alisa Wickliff
Center for STEM Education
University of North Carolina – Charlotte



Wednesday - June 18, 2014

Room: Pakalana
Time: 10:00-11:30am
Workshop: Curriculum, Research & Dev.; Education Technology; Health Edu.; Language Edu.; Science Education; Social Studies Edu.; Teacher Edu.; Connected Curriculum; Inter-dis. Areas of Science; Embedded Technology; Education Technology; Mathematics Edu.

HiTech STEM: Integrating technology into STEM undergraduate courses to enhance student motivation, engagement and success!

What technology tools (apps, web 2.0 tools, devices and other hardware) can be used in STEM undergraduate courses to foster student motivation, engagement, and success? Over the past two years, a group of 10 STEM faculty and staff members at Bowling Green State University have explored and identified effective ways to integrate technology into the undergraduate course experience. We will share both viable tools and developed tutorial resources during this poster presentation session.

Author/Presenter: **Dr. Jodi J. Haney**
Dept. of Environment and Sustainability
Bowling Green State University

Dr. Lisa Addis
COSMOS
Bowling Green State University



Wednesday - June 18, 2014

Room: Carnation
Time: 10:00 am – 11:30 am
Workshop/Panel: Special Education

Finding the Voice Within: Deconstructing the Model Minority Theory in Families with Students with Disabilities.

This presentation will examine one family's journey from initial diagnosis to their current educational experiences in understanding disability from an Asian American cultural perspective. This study will specifically examine the role of voice and gender from the perspective of the parents and the child with a disability and the impact of the Model Minority theory on cultural and behavioral expectations of students with disabilities.

Author/Presenter: **Dr. Trisha Nishimura**
Department of Education
Whittier College





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ACKNOWLEDGEMENT

Hawaii University International Conferences would like to thank the following people who have made our 2014 STEM and Education Conference a success.

Map courtesy of Hawaii Visitors & Convention Center

Ms. Sunshine Oschner – Solana's Hula Dance Mix performance

SPONSORS

We would like to extend our heartfelt appreciation to our sponsors: **Mimio**, **GFG Live!** and **Akamai Creative Solutions**. With their help we are able to improve the conferences to better serve our attendees and presenters allowing us to provide a platform for their academic pursuit and discovery.

KEYNOTE SPEAKER

We would like to thank **Prof. Lee C. Payton** for sharing his knowledge and skills with us.

HAWAIIAN STEEL GUITAR ASSOCIATION

We would like to thank **Mr. Kamaka Tom** for the splendid introduction and music performance at the conference. His dedication to academic endeavors and sharing his knowledge and skills with us is greatly appreciated.

REVIEWERS

We thank the dedicated professionals who reviewed the papers submitted by our conferees to be included in our programs for the conference proceedings. Your work is of the utmost importance to make sure those accepted meet the highest academic standards for presentation.

Dr. Nasseh Tabrizi
Dr. Carolyn Williams
Prof. Martin Reisslein
Dr. Mary Lou Fritts
Dr. Felicia Sawyer
Dr. Elizabeth Whalley
Prof. Samya Bano Zain
Dr. Suzanne Whitehead
Dr. Jane Teng

Prof. Kevin Anderson
Dr. Suman Balasubramanian
Dr. Martha Day
Dr. Claude Tameze
Dr. Sandy Lopez-Isnardi
Dr. Amy Freshwater
Dr. Diane Uber
Dr. Lee C. Payton

The **HUIC Staff** would like to cordially invite you to participate in the growth and development of the conference by becoming a peer reviewer for our future conferences. If you are interested in becoming a peer reviewer please complete the form available at the registration desk indicating your topic of interest and specialization.

THE SESSIONS CHAIR

Thanks to all of the Session Chairs for your guidance of the participants and presenters in each session to maximize the experiences of all 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.

Dr. Lee C. Payton
Dr. Anjan Biswas
Dr. Yajaira Mejia
Prof. William Singhose
Dr. Deborah Lowe Martinez
Dr. Penelope Bidgood
Dr. Timothy W. Richardson
Prof. Thomas Tannert
Dr. Borek Puza

Dr. Karen M. Watt
Dr. Claude M. Tameze
Prof. Kristine Hwang
Prof. Dusan Soltes
Dr. Sandra B. Nite
Dr. Carla Gerberry
Dr. Tulasi R. Joshi
Prof. Peter Borgesen
Dr. Felicia Sawyer

ALL PARTICIPANTS

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 all attendees who generously shared their knowledge and experiences 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 all educational efforts in all parts of the world!

Mahalo!

ALA MOANA HOTEL



410 Atkinson Drive in Honolulu, Hawaii

ADDENDUM

1. **Dr. Carmalita M. Kemayo** - University of Illinois Springfield
Added to June 16th, Carnation Room: 10:00 – 11:30am.

Title: Assessing Learning in Advising: Utilizing Institutional Goals to Measure Learning Outcomes

Synopsis: This paper describes how learning outcomes were assessed following participation in a six-module advising model employing structured learning experiences for entering students at a Midwest public university. Institutional measures of academic performance and retention were examined relative to the number of modules completed. The results support incorporation of institutional goals to assess learning in advising.

2. **Dr. Michael A. Moodian** – Brandman University
From June 16th, Carnation Room: 10:00 – 11:30am
Moved to June 17th, Plumeria Room: 10:00 – 11:30am

Title: Developing Intercultural Competence in an Era of Globalization

Synopsis: This study investigated the effects of 18 months of doctoral studies, including an international experience, on the intercultural competence levels of doctoral students majoring in organizational leadership. The Intercultural Development Inventory, a survey assessment designed to quantitatively measure intercultural sensitivity, was administered to the sample through a repeated measures design.

3. **Mrs. Sarab Al Ani** - Near Eastern Languages & Civilizations, Yale University.
Added to June 17th, Anthurium Room: 8:15 - 9:45am

Title: Language for the 21st Century: Practical Applications

Synopsis: ACTFL introduced a skill map for teaching world languages; skills that would fit the needs of students of 21st century. Students of the 21st need these skills not only in the field of learning, but also for future professional aspects. This presentation introduces and explores some practical applications of teaching these skills, shedding light on : practical and effective use of technology for teaching (with examples), students' proficiency as well as classroom based assessment.

4. **Dr. Lia Leon Margolin** – Marymount Manhattan College, New York
June 17th. Anthurium Room: 12:45 – 2:15pm

Moved to Day 2 Poster p52

Title: Increasing Student Motivation and Performance through Inquiry Based Learning with STELLA Systems Thinking and Simulation Software

5. **Prof. Yenumula B. Reddy** – Grambling State University
From June 16th, Plumeria Room: 8:15 – 9:45 am
Moved to June 18th, Plumeria Room 8:15 – 9:45 am

Title: Role of Nanotechnology and Graphics Processing Units Cognitive

Since the computing speed is approaching its limitations, a new technology that exceeds the current limitations and provides real-time transactions is required. The new technology to meet such demands is nanocomputing. It is expected that the clustered nanocomputers provide high performance computing to meet these limitations. The contribution provides the current state of nanotechnology, cognitive radio networks, and the role of nanocomputing in cognitive radio networks.

6. **Dr. Trisha Nishimura** informed us that she has taken ill during the conference and apologizes the inconvenience this caused.