Science, Technology, Engineering, Arts, Math, & Education
7th Annual Conference

June 8, 9, 10
2017

HAWAII UNIVERSITY INTERNATIONAL CONFERENCES

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YONSEI UNIVERSITY 1885 연세대학교

CALIFORNIA STATE UNIVERSITY STANISLAUS VOX VERITAS VITA MCMLX

HSGA Hawaiian Steel Guitar Association

Welcome Address

Aloha and welcome to the annual Science, Technology & Engineering, Arts, Mathematics and Education Conference held at the Prince Waikiki 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 experience in their particular disciplines to share with each and every one.

We hope you enjoy your stay with our host, the Prince Waikiki Hotel, 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 Mai!

(All are welcome!)

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Please visit our website for more details on the next conference.
www.huichawaii.org
artshumanities@huichawaii.org; education@huichawaii.org
Contact Number: 1-808-537-6500

CONFERENCE SCHEDULE

Registration Hours

June 07 - Wednesday	Foyer	1:00 pm - 6:00 pm
June 08 - Thursday	3rd Floor	6:30 am - 4:30 pm
June 09 - Friday	3rd Floor	6:30 am - 4:30 pm
June 10 - Saturday	3rd Floor	11:00 am - 1:30 pm

HAWAIIAN STEEL GUITAR OPENING PRESENTATION

June 09, Thursday: 6:30 am - 8:00 am, Naio Room

KEYNOTE SPEAKER ADDRESS by Prof. Jont Allen, University of Illinois

June 09, Friday: 7:30 am - 8:00 am, Naio Room

CONCURRENT SESSION TIMES

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

POSTER EXHIBITS

June 08, Thursday: 11:00 am - 12:30 pm, Naio Room

BREAKFAST/APPRECIATION LUNCH - Naio Room

(Complimentary for registered participants)

June 08 - Thursday	Naio Room	6:30 am - 8:30 am
June 09 - Friday	Naio Room	6:30 am - 8:30 am
June 10 - Saturday (Lunch)	Naio Room	11:30 am - 1:30 pm

TEA BREAK

Thursday and Friday - 10:00am - 12:30pm / 1:00pm - 3:30pm

LUNCH BREAK

11:30am - 12:30pm (**Lunch is not provided on Thursday and Friday**)
11:30am - 1:30pm, Saturday - **Appreciation Lunch**

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.

Hawaiin Steel Guitar Performance

Friday - June 09, 2017
Naio Room
6:30 - 8:00am

HSGA

Hawaiian Steel Guitar Association

Mr. Paul Kim
Hawaii, President

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

DAY 1

Thursday - June 08, 2017

Thursday - June 08, 2017

Room: **Palolo 1**
Time: **8:15 - 9:45am**
Session: **Education; Arts; International Relations & Studies; The Marginalization and Safety of K-12 Students; Uniform Policies**
Session Chair: **Prof. Kwame Badu Antwi-Boasiako**

I. Terrorism: The Definition Conundrum. Understanding Terrorism from a Historical Perspective.

The narratives on terrorism soared after the attack on the United States of America on September 11, 2001 (9/11). These narratives have focused on the definitions of terrorism as a recent occurrence. Arguably, terrorism is not a new phenomenon but the problem of terrorism resides in its definition. Conceptualizing terrorism depends on which framework one utilizes to define it. The use of a different lens to define a crime has contributed to lack of global acceptance of what constitutes terrorism

Q: *Is military force the answer to curbing terrorism?*

A: *Terrorism is undefinable and its a force behind ideological belief.*

Author/Presenter: **Prof. Kwame Badu Antwi-Boasiako**
Department of Government
Stephen F. Austin State University
Texas

II. The Marginalization and Safety of K-12 Students: School Uniforms

On school grounds, more guns are being carried by students, gang activity is increasing, as is the number of students assaulted because of the type of clothing they wear. As part of an over-all safety program, numerous school districts are considering adopting uniform policies. In this presentation, issues explored include a rationale for policy adoption, legal implications; the perceptions of parents, students, and educators; and recommendations for successful policy formation.

Q: *What do you see as pros and cons of policy formation?*

A: *Some pros include cost effectiveness, safety (due to the high visibility of an intruder in contrast to uniformed students), and the protection of the marginalization of poor students. Some cons include students not supporting policies, individual identities are not as easily expressed, and if policies are voluntary, many pupils choose not to wear uniforms.*

Author/Presenter: **Dr. Kim McGarraugh Jones**
Curriculum, Supervision, & Educational Leadership Department
Central Washington University
Washington

Continued on next page

III. Understanding Global Terrorism: Pitfalls of the Double Standard Approach

As a global threat, the fight against terrorism requires a global approach; but does it? In this study, I argue that the approach to global comprehension and effective fight of terrorism suffers from the double standard trap.

Author/Presenter: **Dr. Zacharie Nzepa Petnkeu**
Department of World Languages and Cultures
Concordia College
North Dakota

Thursday - June 08, 2017

Room: **Palolo 2**
Time: **8:15 - 9:45am**
Session: **Chemistry; Students with Disabilities; Adaptive Technology; Equal Access for Students with Disabilities; Science Education; Organic Chemistry, History of Science, Artistic Representation**
Session Chair: **Dr. April A. Hill**

I. Development of Adapted Laboratory Manuals to Promote the Inclusion of Students with Blindness or Low Vision in the Chemistry Laboratory

Students with blindness or low vision (BLV) are often excluded from participation in the chemistry laboratory due to safety concerns. In this presentation, tools and techniques for adapting procedures for BLV students will be presented. Video demonstrations and an example adapted procedure will also be presented. Our goal is to produce BLV-compatible laboratory manuals to ensure that students with an interest in STEM fields are not discouraged by a lack of equal access to the laboratory.

Q: *Can a blind student complete a spectroscopy experiment independently?*

A: *If you provide the student with the proper tools, absolutely!*

Author/Presenters: **Dr. April A. Hill**
Mr. Tom Grushka
Ms. Ebony O. Miller
Ms. Winta Abraham
Department of Chemistry
Metropolitan State University of Denver
Colorado

Continued on next page

II. Opportunities for Collaboration, Education and Research: Combining International Service Learning and Research in the Health Sciences

This paper describes a short term study abroad program that incorporates service-learning, research and collaboration in the health sciences. Students operate a clinic in rural Jamaica and biometric data is collected on each patient. The data is used to better understand the population that is being served and to make improvements on future service-learning programs within this community. Students and faculty leaders use the the data to conduct meaningful research in their area of expertise.

Q: *Can you provide examples of how the data that you have collected has been used to change or improve this service-learning program?*

A: *We have been able to identify with the qualitative data common health concerns and misconceptions within the population. For example, this community is concerned about diabetes, hypertension and asthma and they have requested education about each of these topics. This didn't surprise us because the quantitative data we've collected has indicated that these are major health issues facing this population. Therefore, our educational efforts have focused on these topics. However, we also learned that this community is concerned about pinworms and has been treating their children prophylactically rather than confirming that they actually have pinworms, so a future program will address this through education. The goal is to see changes over time in the health and health literacy of this population. This will not be evidenced for years to come, but provides each researcher the opportunity to analyze the data and look for any appearing trends which we then can use in the planning of our next program in this community.*

Author/Presenters:

Dr. Amy Way
Dr. Jennifer Bell
Health Science Department
Physician Assistant Department
Lock Haven University
Pennsylvania

Dr. Amy Way

Continued on next page

III. Conception and Implantation of an Experiential Approach to Science Teachers' Training in Francophone Minority Communities: A Three Phases Design Research

We describe an "experiential" approach to training for science teaching in minority settings in which future teachers are encouraged to explore their representations about science teaching and learning and to undertake a process of internal transformation of their representations in order to improve their pedagogical skills towards minority communities. In this regard, our research is part of a partnership between a faculty of education and a French high school in a minority setting.

Q: *What is expertiential approach to science teaching?*

A: *a) The commitment of the student teacher (ST) in a concrete experience, which is essentially to get in touch with a situation at school or in the community;*

b) reflective observation, which enables the ST to objectify the situation and study it from different perspectives;

c) abstract conceptualization, where the ST tries to link the properties observed with a framework of interpretation to conceive an action plan;

d) active experimentation, when the ST verifies the plan previously conceived while implementing it in the chosen minority educational setting.

Author/Presenters: **Prof. Louis Trudel**
Faculty of Education
University of Ottawa
Ontario, Canada
Prof. Abdeljalil Métioui
Département de Didactique
Université du Québec à Montréal
Quebec, Canada

Thursday - June 08, 2017

Room: **Palolo 3**
Time: **8:15 - 9:45am**
Session: **Higher Education; Educational Psychology; Inter-disciplinary and other areas of Education**
Session Chair: **Dr. Brent Estes**

I. Predicting Productivity of Higher Education Faculty: An Expectancy Theory Analysis

This study uses expectancy theory to predict sustained productivity of tenured/tenure-track faculty in higher education. It discusses how value perception directly influences motivation and performance.

Q: *What exactly is expectancy theory and how does it predict behavior?*

A: *Expectancy theory is an organizational behavior theory of worker motivation that suggests individuals make decisions to perform based on cognitive concepts of subjective probabilities. It is based on the idea that a worker's perception of the likelihood of accomplishing a task is combined with the degree of value the worker places on the potential outcomes associated with the completion of the task in order to determine that worker's level of motivation or effort.*

Author/Presenters: **Dr. Brent Estes**
Department of Kinesiology
Sam Houston State University
Texas
Dr. Barbara Polnick
Department of Educational Leadership
Sam Houston State University
Texas

Continued on next page

II. How Does Specific Efficacy Rest on an Educator's Role in Relation to Students' Learning Style?

This paper explored how an educator's role affects change of an English efficacy belief of Japanese undergraduates if it is fitted to students' learning style. We used a longitudinal format for approximately three months, applying an undergraduate context in Japan. Results supported a view that a proper fit between educators' roles and students' learning styles is important to develop specific self-efficacy.

Q: *What kind of educator's role should be taken in order to enhance a self-efficacy belief?*

A: *It depends on what kind of learning style a student has.*

Author/Presenters: **Dr. Yoshitaka Yamazaki**
Dr. Michiko Toyama
Faculty of Business Administration
Bunkyo University
Kanagawa, Japan

III. Supercharging Results Through Self-Motiviation

Various techniques for improving students' accomplishments through self-motivation are presented. These techniques are demonstrated in a 3rd year Electrical Engineering Design Studio course. An end-of-course survey and a comparison to a prior iteration of the same course demonstrate the effectiveness of the proposed techniques.

Q: *What motivates students more than anything?*

A: *When they want to be like you.*

Author/Presenter: **Dr. Leo Stocco**
Electrical & Computer Engineering Department
University of British Columbia
Vancouver, Canada

Thursday - June 08, 2017

Room: **Palolo 4**
Time: **8:15- 9:45am**

Session: **WORKSHOP - Art in Education; Mathematics**

I. Art of Stepping Through Mathematics

Art of Stepping promotes artistic expression in conjunction with mathematics to creatively stimulate the minds of our youth. More importantly, AOS is a K-12 curriculum based program that incorporates mathematical formulas and the art form of Stepping. The latter, will ultimately provide program participants that ability to write codes in mathematical connotation that will give them the ability to perform and create their own personalized choreography (stepping or dance).

Author/Presenter: **Mrs. Jessica Saul**
Art of Stepping
National After School Association
New York

Thursday - June 08, 2017

Room: **Palolo 1**
Time: **10:00 - 11:30am**
Session: **Mathematics; Pre-K-6th Grade Mathematics; Special Education; Mathematics Education**
Session Chair: **Dr. Michele Stites**

I. Actions and Beliefs in Pre-K-6 Mathematics Instruction: Exploring Universal Design for Learning to Increase Conceptual Understanding

This presentation presents the findings of a quantitative study examining mathematics teachers' beliefs and actions related to Universal Design for Learning (UDL). UDL is a framework for instruction designed to increase opportunities for conceptual understanding in mathematics. The basic tenets of UDL are reviewed in relation to the study findings.

Q: *How do we increase students' conceptual understanding in mathematics?*

A: *Universal Design for Learning is a framework for instruction designed to make conceptual understanding accessible to all learners.*

Author/Presenter: **Dr. Michele Stites**
Department of Education
University of Maryland Baltimore County
Maryland

Continued on next page

Session: **WORKSHOP**

II. Mathematics Teacher Professional Development: Improving Pre-K through 6 Mathematics Instruction using Universal Design for Learning

This presentation reviews a researched-based, professional development (PD) experience for Pre-K-6th grade mathematics teachers. The PD reviewed in the presentation focuses on using Universal Design for Learning (UDL) in mathematics instruction with the goal of improving students' conceptual understanding.

Q: *How do we improve the students' mathematical conceptual understanding?*

A: *Using the UDL framework allows teachers to design instruction that uses student strengths and interests.*

Author/Presenter: **Dr. Michele Stites**
Department of Education
University of Maryland Baltimore County
Maryland

Thursday - June 08, 2017

Room: **Palolo 2**
Time: **10:00am - 12:00pm**
Session: **Interdisciplinary Education; Health Science; International Relations and Studies; Chemistry Education**
Session Chair: **Prof. Renat Letfullin**

I. Cross-Disciplinary Curriculum in Medical Physics and Nanomedicine for STEM Undergraduate Students

We propose to enrich STEM education of undergraduates by developing a highly innovative interdisciplinary program to train STEM students in a multidisciplinary environment of medical physics and nanomedicine; to teach the latest scientific breakthroughs in nanotechnology and build the bridge between nanoscience, medicine and treatment of disease.

Q: *What is a nanomedicine education?*

A: *Nanomedicine involves many science disciplines including physics, optics, chemistry, biology, computers and nanoscience, providing an excellent avenue for introducing students to the truly interdisciplinary nature of much of what takes place in scientific research.*

Author/Presenter: **Prof. Renat Letfullin**
Physics and Optical Engineering Department
Rose-Hulman Institute of Technology
Indiana

II. Environmental Education in one of the Largest Superfund Sites in America

How do you teach the next generation about Superfund, and its associated environmental damage and repair? How do you talk about the science of toxic waste effects on a local ecology and environment? How do you engage a community and their beliefs to encourage stewardship of the land? As STEAM program providers, we will describe how we do this work, our opportunities for improvement, as well as our pedagogical "minds-on and hands-on" approach to tackle this complex issue.

Author/Presenters: **Ms. Abigail Peltomaa**
Dr. Arlene Alvarado
Ms. Rayelynn Brandl (Connole)
Clark Fork Watershed Education Program
Montana Tech
Montana

Ms. Abigail Peltomaa

Continued on next page

III. "Molecules That Matter": On the Creation and Impact of an Interdisciplinary Museum Exhibit

The 2007-10 Skidmore traveling national exhibit, "Molecules That Matter", showcases ten organic compunds--one per decade--that profoundly shaped life in the 20th century. The central scientific theme of MTM is the notion that the collective scientific understanding of our world at the molecular level has permitted humans the opportunity to alter the natural evolution of the biosphere, as well as society and the economy, on a scale unimagined by previous generations.

Author/Presenter: **Prof. Raymond Giguere**
Department of Chemistry
Skidmore College
New York

IV. Diversity Audit Tool for Chemistry Education

The Diversity Audit Tool consists of critical self-reflective questions and concrete strategies for educators in order to build an equitable and inclusive Chemistry classroom. The tool was created interdisciplinary research and consultation with numerous stakeholders across North America including Chemistry Faculty, students and postdocs from equity seeking groups, disability lawyers, advocacy organizations, scientists, leading researchers developing inclusive Chemistry classrooms.

Author/Presenters: **Dr. Dipesh Prema**
Dr. Ruby Dhand
Department of Chemistry
Science Faculty
Thompson Rivers University
British Columbia, Canada

Thursday - June 08, 2017

Room: **Palolo 3**
Time: **10:00 - 11:30am**
Session: **Distance Education; On-line Learning; Science Education; Inter-disciplinary Areas of Science; Discrete Structures; Information & Computer Sciences; Information Technology**
Session Chair: **Dr. Maureen Andrade**

I. Success for Online Leaners: Applying the Dimensions of Self-Regulated Learning

Online learning is expanding access to diverse learners, some of whom may not be prepared to succeed. Application of the six dimensions of self-regulated learning—motive, methods of learning, time, physical environment, social environment, and performance—provide a framework to inform course design and teacher facilitation of learner success. The presenter will introduce the framework, share applications of self-regulated learning in online English language courses, and invite discussion.

Author/Presenter: **Dr. Maureen Andrade**
Academic Affairs Department
Utah Valley University
Utah

II. "Science with Bobert" a Successful Online Introductory Science Course Created with the Help of My Dog

A highly successful online introductory science course (with lab component) has recently been developed at Our Lady of the Lake University (OLLU) in San Antonio, Texas. The course is designed for undergraduate non science majors. The objective of the course is to introduce today's science in a fun and interactive way through "do-at-home" activities, original video, and animations of scientific concepts.

Q: *Are any of the activities dangerous?*

A: *Science with bobert shows how to tow a car using two interlaced notebooks of tablet paper, but students to date have not tried to repeat that activity.*

Author/Presenters: **Dr. Charles Smith**
Chemistry Department
Our Lady of the Lake University
Texas

Continued on next page

III. Familiarity Breeds Engagement

In the modern world traditional forms of distance education do not hold the attention of the students of the new millennium. To engage a distance education cohort a Mental Health unit within a 3 year bachelor of nursing degree at Central Queensland University is presenting recorded on-line lectures in a familiar and engaging way, that is, using the same format as a talk show. Concepts: talking Mental Health is a recorded talk show that presents all the information of traditional lectures.

Q: *How are the shows broadcast to students?*

A: *All students who enrol in our distance education programs must have access to reliable internet and a computer as our distance education is presented via the Moodle platform. As these make up a component of course work they are presented this way. The shows are recorded prior to term by a professional camera person/producer and these are then edited and uploaded to Moodle via ECHO360.*

Author/Presenters: **Mr. Scott Harris**
Dr. Leone Hinton
School of Nursing, Midwifery and Social Sciences
Central Queensland University
Queensland, Australia

Thursday - June 08, 2017

Room: **Palolo 1**
Time: **12:45 - 2:15pm**
Session: **Childhood Development; Early Childhood Education; Elementary Education; Interdisciplinary Areas of Sciences; Summer Bridge Programs; Student Success Services; Narrative Approach**
Session Chair: **Prof. Cheryl Pawlowski**

I. Teens, Tweens, and Social Media

Utilizing the work of Bandura (1977, 1986, 2004, and 2006) and other scholars on child development and Social Learning Theory as a general framework, the scholars will examine a multitude of literature regarding how social media may accelerate the effects of anti-social and sexual development of children, both genders.

Author/Presenters: **Prof. Cheryl Pawlowski**
Communication Studies Department
University of Northern Colorado
Colorado
Prof. Diane Matuschka
Communication Studies Department
University of North Florida
Florida

II. Neuro-Education: A Possible Model for an Educational Paradigm Shift

A Neuro-Education approach to literacy requires connecting the literature about the brain, mind, and language function. From this literature, the Neuro-Semantic Language Learning Theory (NsLLT) emerges. Language methods based on this theory that have been utilized with individuals, groups, and classrooms. These methods match the way the brain learns (not learning styles) and result in effective literacy with all learners, across ages, and across grades. Examples of application will be provided.

Author/Presenter: **Dr. Ellyn Lucas Arwood**
School of Education
University of Portland
Oregon

Continued on next page

III. Teaching Physics Core Ideas to Content Generalists

We describe the physics content course for future elementary teachers at Iowa State University and our textbook for this course, "Children Doing Physics: How to Foster the Natural Scientific Instincts in Children." The course consists mainly of teachers performing the same experiments their future elementary students will be doing: measuring masses and length, making clocks to measure time, making electroscopes to measure charge, building a solar powered car, etc.

Q: *Will children like this?*

A: *We shall see.*

Author/Presenters: **Prof. John Hauptman**
Department of Physics and Astronomy
Iowa State University
Iowa
Prof. EunJin Bahng
School of Education
Iowa State University
Iowa

Prof. John Hauptman

Thursday - June 08, 2017

Room: **Palolo 2**
Time: **12:45 - 2:15pm**
Session: **Education; Mathematics; Statistics**
Session Chair: **Dr. Richard Ford**

I. Evolving Quantitative Reasoning Expectations in the California State University

We present the efforts of the CA State University to improve college readiness in mathematics and quantitative reasoning while maintaining and improving social equity. A "Quantitative Reasoning Task Force" (QRTF) was commissioned to study the issue. This session will report on the recommendations and endorsements of the final report. Particular attention will be paid to the most controversial recommendation: requiring four full years of quantitative reasoning for admission to the CSU.

Q: *How are "access" and "opportunity" different with respect to equity?*

A: *Access refers to the admissions and curriculum restrictions based on preparation. This can and does cut unevenly across racial and ethnic lines. Opportunity refers to the value of the bachelors degree and can be degraded as a result of lowering of preparation standards. The impact again cuts unevenly across racial and ethnic lines.*

Author/Presenters: **Dr. Richard Ford**
Department of Mathematics
California State University, Chico
California
Dr. Elizabeth A. Boyd
College of Agriculture
California State University, Chico
California

II. On Chebyshev's Inequality in Elementary Statistics - an Original Proof

This paper will present an original proof of Chebyshev's Inequality and attempt to show that the inequality is extremely valuable in statistics, can be understood with minimal effort and can be proved in an understandable way in an elementary statistics course.

Author/Presenter: **Prof. Joseph M Garrison**
Department of Mathematics
Middle Georgia State University
Georgia

Continued on next page

III. Approximation of Some Compound Distributions

This paper examines a simple, but reasonably accurate approximation method for computing tail probabilities and probability (density) functions of some compound distributions. The approximate probabilities are compared numerically with the exact results through simulations.

Author/Presenter: **Dr. K. Ranee Thiagarajah**
Department of Mathematics
Illinois State University
Illinois

Thursday - June 08, 2017

Room: **Palolo 3**
Time: **12:45 - 2:15pm**
Session: **African Studies; Language Education; Linguistics; Indigenous STE(A)M Education**
Session Chair: **Dr. Clemente Abrokwaa**

I. Globalization and The Academy: The African University Within The New World Order – Inclusion or Relegation?

This paper examines the African university within the New World Order, in terms of its relevance, role, status, and ability to contribute toward national and global knowledge and development. It argues that globalization may, eventually, reduce the African university to nothing more than an educational site that offers students international cultural and diversity experience, but incapable of achieving any global recognition as a serious and competitive academic institution within the New World Order – unless it begins to re-orient its focus to developing its local indigenous knowledge and technological resources.

Author/Presenter: **Dr. Clemente Abrokwaa**
African Studies Department
Penn State University
Pennsylvania

II. The Acquisition of a Japanese Practical Formulaic Sequences List from a Closed Caption TV Corpus

We try to acquire a practical formulaic sequences list from the huge raw FSs. We focus to keep a balance between frequency and string-length. We investigate FSs which have more than 5 characters and occur more than ten times in the corpus. From our preliminary investigation using these paramaters, we can expect to acquire a FS which can be considered as a prefabricated component. We describe the details of the method and results. We also show what kind of strings are extracted as practical FSs.

Q: *What kind of formulaic sequences were extracted?*

A: *Because we tried to extract long size FSs, most extracted FSs form meaning units such as sentences, phrases, and long proper nouns.*

Author/Presenters: **Dr. Hajime Mochizuki**
Institute of Global Studies
Tokyo University of Foreign Studies
Japan
Prof. Kohji Shibano
Research Institute for Languages and Cultures of Africa and Asia
Tokyo University of Foreign Studies
Japan

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Thursday - June 08, 2017

Room: **Palolo 3**
Time: **12:45 - 2:15pm**
Session: **African Studies; Language Education; Linguistics; Indigenous STE(A)M Education**
Session Chair: **Dr. Clemente Abrokwaa**

III. Aboriginal Ways of Knowing and Learning, 21st Century Learners, and STE(A)M Success

This paper explores how Aboriginal ways of knowing and learning and those of the 21st Century learners of today very closely parallel each other and illustrates how the creative multidisciplinary approach of a liberal education and the arts might be the way to enable early academic engagement, success and retention of Aboriginal learners in the sciences and mathematics.

Q: *What do Aboriginal learners and 21st Century learners have in common?*

A: *They are hands-on applied learners; they learn by doing first.*

Author/Presenter: **Dr. Michelle Hogue**
First Nations' Transition Program
Faculty of Arts & Sciences
University of Lethbridge
Alberta, Canada

Thursday - June 08, 2017

Room: **Palolo 1**
Time: **2:30 - 4:30pm**
Session: **Secondary Education; Science Education; Educational Measurement and Evaluation; Technology, Engineering, and Mathematics; Education Policy & Leadership**
Session Chair: **Dr. Anant Kukreti**

I. Teachers "Engineer" Contextualized Units to Challenge & Engage Students

An NSF-funded program provides professional development and coaching to help secondary math and science teachers integrate engineering design into their classrooms. This paper examines the process by which participating teachers individually develop five engineering design units, uniquely suited to address their classes' academic standards, and teach those units over two school years, as well as the findings related to the impact of this process on the teachers themselves and their students.

Author/Presenters: **Dr. Anant Kukreti**
Ms. Julie Steimle
Biomedical, Chemical & Environmental Engineering Department
University of Cincinnati
Ohio

II. High School Students' Conceptual Understanding of Parabolic Motion

High school students experience difficulties when they studied parabolic motion since it requires, to understand its properties, that they combine one dimensional kinematics concepts. To understand the nature of their difficulties, we analyzed with qualitative methods the content of students' answers to a questionnaire. Among key results, we found that many students encounter difficulties differentiating between position (time) and speed (time) along X and Y components.

Author/Presenters: **Prof. Louis Trudel**
Faculty of Education
University of Ottawa
Ontario, Canada
Prof. Abdeljalil Métioui
Département de Didactique
Université du Québec à Montréal
Quebec, Canada

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Thursday - June 08, 2017

Room: **Palolo 1**
Time: **2:30 - 4:30pm**
Session: **Secondary Education; Science Education; Educational Measurement and Evaluation; Technology, Engineering, and Mathematics; Education Policy & Leadership**
Session Chair: **Dr. Anant Kukreti**

III. Summer Bridge Programs: Championing Excellence through Diversity Inclusion

This paper explores the ways in which Summer Bridge Programs champion equity and inclusion amongst underrepresented and first-generation college students. Case studies include the VU in Amsterdam, UCLA, and Nevada State College, which use the narrative approach to ask students, peer educators, and teachers to exchange their life stories as a way of raising awareness about identity capital, encouraging identification with others, and inspiring transformation through self actualization.

Q: *Is the Narrative Approach effective in boosting student interest and participation, particularly during Summer Bridge Programs?*

A: *Yes, in our case studies, we determined that the exchange of student narratives allowed students to connect with one another, while also enabling them to build a supportive network that increased their investment and performance in the program.*

Author/Presenter: **Dr. Leila Pazargadi**
Humanities Department
Nevada State College
Nevada

Continued on next page

IV. Remediation Challenges in California

This paper examines remediation in California's public universities, specifically San José State University (SJSU) and the California State University (CSU) system, and suggests possible interventions to help those students in need of remediation progress to a college degree in a timely fashion. The authors include a history of remediation in the United States and California. The effectiveness of strategies currently being employed and recommendations to further explore the issues are presented.

Q: *What is one strategy to reduce remediation in college students?*

A: *Corequisite remediation*

Author/Presenter: **Dr. Patricia Backer**
Department of Aviation and Technology
College of Engineering
San Jose State University
California
Prof. Andrew Hale Feinstein
College of Engineering
San Jose State University
California
Dr. Susan McClory
Emeritus Faculty
San Jose State University
California
Dr. Stacy Gleixner
Student and Faculty Success
San Jose State University
California

Thursday - June 08, 2017

Room: **Palolo 2**
Time: **2:30 - 4:00pm**
Session: **Manufacturing Engineering Education Enhancement; Mathematics and Viral Biology; Interdisciplinary projects in Chemistry, Biology, and Mathematics**
Session Chair: **Dr. Tzu-Liang (Bill) Tseng**

I. LEGO Based Low Cost Teaching For Enhancing Manufacturing Education

The United States to maintain its role in technology and innovation, Manufacturing industries provide an important foundation in ensuring the world leadership. According to a skills gap report conducted by the Manufacturing Institute and Delloitte consulting, critical concerns were addressed on the potential of the manufacturers to fill the positions required for manufacturing settings that require post secondary education with a deficit of Science, Technology, Engineering and Mathematics (STEM).

Q: *Manufacturing Education Enhancement*

A: *LEGO based Low Cost Teaching.*

Author/Presenters: **Dr. Tzu-Liang (Bill) Tseng**
Dr. Aditya Akundi
Department of Industrial, Manufacturing and Systems Engineering (IMSE),
The University of Texas at El Paso
Texas

II. Interdisciplinary Projects for Freshmen College Students

Interdisciplinary projects utilize real world data, classroom demonstrations, and technology to illustrate the concepts of functions, mathematical modeling, rates of change, asymptotic behavior, and viral biology using in-class data collection and real world applications.

Author/Presenter: **Mrs. Sofia Agrest**
Department of Mathematics
College of Charleston
South Carolina

Continued on next page

III. Feedback Linearization and Optimal Control of Electromagnetic Ball Suspension System (EMBSS)

This paper presents the non linear feedback linearization technique and the optimal control of the two models of EMBSS. One of the models has the input as voltage and the other has the input as the current. The two models were analysed on linearized, it was found out that both models are feedback state input-output linearizable. The optimal control was given by the solution of algebraic Riccati equation.

Author/Presenters: **Mrs. Emmanuel Niyigaba**
Prof. Santosh Kumar
Department of Mathematics
University of Dar-es-Salaam
Tanzania, East Africa
Prof. Joyati Debnath
Department of Mathematics and Statistics
Winona State University
Minnesota

Thursday - June 08, 2017

Room: **Palolo 3**
Time: **2:30 - 4:00pm**
Session: **Education/STEM; Women Studies**

Session Chair: **Dr. Cengiz Yakut**

I. Gender, and Practice Factors on Learning of a Visual Aiming, and Target-Acquisition Task

This paper demonstrates that current social, cultural, and task contexts, not the motor control and learning deficiencies affect women's performance in complex visual motor tasks. The results showed that, although males' performance appeared to be better overall (largely due to small differences accumulates) across conditions, women performed as well as men and even better for accuracy when practicing the altered task factors simultaneously in a complex visual motor task.

Q: *What are the practical and theoretical implications of this study?*

A: *The task in this study is related to technology use and operating heavy machinery, drones and airplanes. Thus, women can perform as good as men for these real-life technology related tasks if they are giving opportunities to train and practice. Subsequently it was argued that current social and environmental contexts, including the design of human computer and media interaction, favor males and that technological design should be geared toward a more gender-neutral, user-interface design.*

Author/Presenter: **Dr. Cengiz Yakut**
Health & Physical Education Department
Lock Haven University
Pennsylvania

Continued on next page

II. Women and Computing: Constructing Digital Identities in Computer Science Education in Schools and Universities

For the last two decades, research has been conducted and programmatic measures have been taken to slow the 'leaky pipeline'—that is, increase the numbers of women and minorities who choose science, technology, engineering, and mathematics [STEM] in public schools, universities, and industry This has not happened; structural changes have not occurred.

Author/Presenter: **Dr. Shaunda Wood**
School of Education
St. Thomas University
New Brunswick, Canada

III. Bringing Women into Software Engineering

Women are a minority in Software Engineering careers and studies. This paper serves to discover the reasons for the imbalance of genders in Software Engineering and other STEM related fields.

Q: *How to attract more women into software engineering discipline?*

A: *Start very early (in education).*

Author/Presenters: **Dr. Hassan Pournaghshband**
Dr. Laura Johnson
Department of Software Engineering & Game Development
Kennesaw State University
Georgia

Thursday - June 08, 2017

Room: **Palolo 4**
Time: **2:30 - 4:00pm**
Session: **Computational Mathematics; Mathematics; Calculus; Statistics**
Session Chair: **Prof. Pengtao Sun**

I. Distributed Lagrange Multiplier/Fictitious Domain Finite Element Method for Stokes/ Parabolic Interface Problems with Jump Coefficients

The distributed Lagrange multiplier/fictitious domain (DLM/FD) finite element method for a generic transient Stokes/parabolic interface problem with jump coefficients is studied in this paper, where the mixed finite element approximation is developed and analyzed within the proposed DLM/FD framework on the aspects of well-posedness, stability and optimal convergence. Numerical experiments are carried out to validate theoretical results of the proposed DLM/FD mixed finite element method.

Q: *What is the main application of your research topic?*

A: *It can contribute to the numerical methodology of fluid-structure interaction simulation, a type of quite popular and quite challenging propblems engineers and mathematicians have to face in practice.*

Author/Presenter: **Prof. Pengtao Sun**
Department of Mathematical Sciences
University of Nevada, Las Vegas
Nevada

II. An Analysis of Capital F in the Fundamental Theorem of Calculus

This paper will reflect on the integrating function central to the statement of the theorem which will be called Capital F. Capital F's relationship to all of the other antiderivatives of f(x) and the various structures of capital F producing the same function will be examined.

Author/Presenter: **Prof. Joseph M. Garrison**
Department of Mathematics
Middle Georgia State University
Georgia

III. Bayesian Change Point Detection: A comparison between DWT and Lifting

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. We modify and extend an existing Bayesian change point detection procedure due to Ogden and Lynch(1999) which uses the discrete wavelet transform. Our main objective is to investigate and compare the usefulness of the two procedures: Discrete Wavelet Transform and Lifting.

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

DAY 2

Friday - June 09, 2017

KEYNOTE SPEAKER - PROF. JONT ALLEN

Friday - June 09, 2017
Room: Naio
7:30 - 8:00am

Prof. Jont Allen
Electrical and Computer Engineering Department
University of Illinois
Mahomet, Illinois

Allen graduated from the Univ of IL in 1966, and then did an MS (1968) and PHD (1970) at the University of Pennsylvania, Philadelphia PA. He then went to Bell Labs, where he enjoyed a 32 year AT&T Bell Labs career. At AT&T Allen specialized in nonlinear cochlear modeling, auditory and cochlear speech processing, and speech perception.

In 1982-1987 Allen had primary responsibility with the development of the first commercial multi-band wide-band dynamic range compression (WDRC) hearing aid, later sold as the ReSound hearing aid. During this 5 years he was working closely with clinical audiologists and speech and hearing scientists, and with several hearing aid manufactures (Starkey, Phonak, Etymotic), who subsequently funded Allen's work.

In Aug. 2003 he join the ECE faculty as a Professor, University of IL, Urbana, where he teaches and works with his students on the theory and practice of human speech recognition, for both normal and hearing impaired hearing. From 2005-present Allen has also worked on reading disabilities in young children, in collaboration with Prof. Cynthia Johnson of the UIUC Speech and Hearing Science Department.

He teaches courses in mathematical physics (ECE493), Concepts in Engineering Math (ECE 298JA), Speech processing (ECE537), analog (ECE210) and digital signal processing (ECE310), and Audio Engineering & transducer design (ECE403). The details may be found at http:\\auditorymodels.org.

Since the early 1990's, Allen has been a visiting scientist in the Departments of Otolaryngology of Columbia University, City university of New York, and University of Calgary, and was an Osher Fellow at the Exploratorium Museum, San Francisco. He has been very active in IEEE and the ASA, running both major conferences and small workshops. Allen has more than 20 US patents on hearing aids, signal processing and middle ear measurement diagnostics.

Friday - June 09, 2017

Room: **Palolo 1**
Time: **8:15 - 9:45am**
Session: **African American Studies; Studying Effects of Biology/ Natural Sciences; STEM**
Session Chair: **Dr. Gregory Anthony Tillman**

I. "The Harlem Renaissance of the 1920's", African American Literature and its implications for Equity, Diversity and Multi-Cultural Education

Harlem once glittered as one of the world's most vivid entertainment centers during the 1920s and 1930s. Nightlife revolved around the Cotton Club, Smalls Paradise and the Savoy Ballroom, featuring floor shows headlining glamorous African American women. African American artists during the Harlem Renaissance were social activists, making a significant contribution to black culture and aesthetics. Creating the notions of Black Identity, Black Consciousness and Black Pride sustained these artists as activists in the face of adversity and placed "The New Negro" on the global artistic scene.

Author/Presenters: **Dr. Gregory Anthony Tillman**
English Department
Lane College
Tennessee

II. The Effects of Studying Natural Sciences for African American Students

Studies have shown that African American students struggle in STEM subjects compared to their other counterparts. This lowers the confidence levels when it comes to science. If all teachers found effective teaching styles that produced more critical thinking as opposed to one-sided lectures, then the grades and attitudes towards the natural sciences would increase.

Q: *What is the national average for African American students graduating with STEM degrees?*

A: *African Americans received just 7.6 percent of all STEM bachelor's degrees and 4.5 percent of all doctorates in STEM since 2008.*

Author/Presenters: **Ms. Leticia Patton**
Ms. Ashley Taylor
Department of Biology/Education
Tougaloo College
Mississippi

Friday - June 09, 2017

Room: **Palolo 2**
Time: **8:15 - 9:45am**
Session: **Collaborative Learning Groups for Effective Learning, Interactions in Learning Groups; Computer Science Courses; Security in Computing Systems; Science Education; Other Area Related to Sciences - Aquaculture/ Aquatic Science**
Session Chair: **Dr. Ronald P. Uhlig**

I. Enhancing Student Collaboration for Improved Learning

In a traditional class, students interact primarily with the instructor. Increasing the level of student interaction with one another during the learning experience provides a significant multiplier in the student learning experience. Instead of all learning occurring on the student-instructor axis, learning occurs on multiple axes between students. Getting students to interact meaningfully with each other is an important result of student collaboration. During this academic year, we have conducted research on collaboration with student mentors and in small groups. Results are presented, including analysis of surveys of students along with instructors' experiences.

Q: *How do you know that students' learning experience will improve when collaborative learning and mentoring techniques are combined?*

A: *Make an agile plan with appropriate rubrics for small or medium size groups and adjust the plan dynamically, if necessary, as suggested in the current study.*

Author/Presenters: **Dr. Ronald P. Uhlig**
Prof. Pradip Peter Dey
Dr. Bhaskar Raj Sinha
Prof. Mohammad Amin
Prof. Shatha Jawad
Department of Applied Engineering
School of Engineering and Computing
National University
California

II. Evaluation of Project-Based Learning Programs in Aquaculture: A Qualitative Study of High School Students' Learning

A three month project-based pilot program was evaluated in efforts to assess students' perceptions, attitudes, and behaviors when engaged in hands-on aquaculture activities and located at Kentucky State University's Aquaculture Research Center in Frankfort, Kentucky. Students were engaged in real-world aquaculture environments and learned how to construct, size, and troubleshoot a small-scale backyard aquaponics system. The data-gathering techniques included field observations and interviews.

Author/Presenters: **Mr. Kenneth Thompson**
Dr. Kirk Pomper
Dr. Rebecca Krall
Dr. James Tidwell
Dr. Vikas Kumar
Aquaculture Department
Kentucky State University
Kentucky

III. A Content Analysis in the Discipline System of Selected Diocesan Schools in the Philippines

The study aims to open new perspectives in handling the system of the school in terms of discipline. The study will start by conducting a survey in various schools and exploring the possible effects and impacts of the current system being implemented. The ultimate aim is to redesign a justice system for the school which best fits the students' personalities and maximising the potential of holistic formation of students.

Q: *What is the most used type of justice system in your country?*

A: *Punitive*

Author/Presenters: **Dr. Francine Rose Bofill**
Mr. Ray Anthony Bofill
Ms. Fritz Cristina Diaz
Dr. Pilar Romero
Mr. Elfie Samaniego
Senior High School
University of Santo Tomas
Manila, Philippines

Friday - June 09, 2017

Room: **Palolo 3**
Time: **8:15 - 9:45am**
Session: **Higher Education; Science Education, Higher Education, Curriculum Research and Development; Cell and Molecular Biology, Public Health**
Session Chair: **Dr. Ben Maguad**

I. Managing the System of Higher Education: The Case for Collaboration

The systems view of quality postulates that product or service quality comes as the result of interactions between various components that comprise a production process . Thus, to be effective, any quality improvement initiative should address the needs of the system as a whole. It must balance the needs of the different functional areas in the organization as no single area operates in a vacuum. All areas are interrelated and interdependent.

Author/Presenter: **Dr. Ben Maguad**
Department of Management, Marketing & Information Systems
School of Business Administration
Andrews University
Michigan

II. Citizen Science: Scientific Literacy Education in the College First Year Curriculum

A scientific literacy course, Citizen Science was added to Bard College's first-year core curriculum. During this, students take part in problem-based learning, hands on laboratory and computing activities. Incorporated with exploration of scientific evidence and data interpretation are discussions of ethical and societal influences on scientific inquiry. Students perform science outreach in community schools. Student self reported learning outcomes from years 2-7 will be presented.

Q: *Who are the students, and how does this connect to their academic trajectory?*

A: *Bard emphasizes mandatory curricular components, common to all students during their first year of study. This common educational experience develops campus-wide conversations surrounding large questions, with a goal of preparing students for a lifetime of thoughtful engagement with complex issues. Beyond disciplinary knowledge, students learn how to interrogate issues outside of their area of knowledge in appropriate and meaningful ways. Approximately 80% of Bard College students major in a field outside of the sciences.*

Author/Presenter: **Amy Savage**
Citizen Science Program
Bard College
New York

Continued on next page

III. Design History Leaps Off the Page

How to connect a historical survey course with today's digitally-savvy, textbook-averse, over-entertained undergrads? This paper details the specific changes made to create a "flipped" classroom for teaching design history.

Author/Presenter: **Prof. Ann Lemon**
Communication Design Department
Kutztown University of Pennsylvania
Pennsylvania

Friday - June 09, 2017

Room: **Palolo 4**
Time: **8:15 - 9:45am**
Session: **Interdisciplinary Education - Integrating STEM Classes with the Humanities; Art, Visual Art, Drama Film Television & Other Media, Interdisciplinary Study, Art Education; Studying effects of Biology/ Natural Sciences**
Session Chair: **Prof. Melanie Brandt**

I. Interrogating Integration: Examining the Costs of Interdisciplinary Education

Interdisciplinary classes have become an increasingly popular form of education, especially for classes that integrate STEM and humanities disciplines . This paper employs a pilot course that combines aspects of design engineering with ethics and composition to explore some of the costs and complications that are inherent in this disciplinary integration.

Q: *Are interdisciplinary classes more effective than single discipline classes?*

A: *Maybe. However, it is necessary for educators to recognize the costs that are associated with integrating courses.*

Author/Presenter: **Prof. Melanie Brandt**
Humanities, Arts, and Social Sciences Department
Colorado School of Mines
Denver, Colorado

II. Identifying Qualitative Datatypes and Artist's Literacies to Amplify STEAM-Team Research

Successful evolution of STEM systems to STEAM systems is dependent on artists and the arts community's ability to understand the relation of their work and methods to those of scientists, technologists, and mathematicians, as it relates to research and education. This means reframing the role of the artist as something more than a mere communicator of information; it means recognizing the practice of art as the creation of knowledge itself - the way we recognize this of science, math, and technology.

Q: *How can we more rigorously engage artists in contemporary research systems?*

A: *By reframing the role of the artist beyond that of a mere communicator, and recognizing - from within the artists community and from without it - that art is knowledge creation itself, and we only lack language and tools to recognize the forms of knowledge generated in art-making.*

Author/Presenter: **Mr. Andrew Freiband**
Department of Film, Animation, and Video
Rhode Island School of Design
New York

Friday - June 09, 2017

Room: **Palolo 1**
Time: **10:00 - 11:30am**

WORKSHOP: **Entrepreneurship Development, Inter-disciplinary; STEM/STEAM**

I. Teaching our Students that the Arts and Engineering are Really the Same Thing

A cross-disciplinary faculty group at Lafayette College does not want to infuse the Arts within the STEM fields. Instead, we argue that STEM and the Arts share meaningful and identifiable commonalities of thought and process. Lafayette has developed a Model illuminating what many of us already do when approaching and overcoming challenges. In turn, that clarity amplifies what we do in our own disciplines while offering a common language that connects us with colleagues of differing disciplines.

Q: *How have you created a community of faculty?*

A: *We have brought members of our faculty together by showing them the Model, gaining excitement, and offering opportunity for them to recognize the benefits of connecting with their colleagues.*

Author/Presenters: **Dr. Jennifer Kelly**
Dr. Scott Hummel
Department of Music
Lafayette College
Pennsylvania
Dr. Daniel Sabatino
Department of Mechanical Engineering
Lafayette College
Pennsylvania

Friday - June 09, 2017

Room: **Palolo 2**
Time: **10:00 - 11:30am**
Session: **STEM; Computational Methods; Computer Science; Image Processing and Computer Language**
Session Chair: **Dr. Sophie Xiaofan Liu**

I. Hairstyle and Photograph Augment Based on Face Recognition

This paper presents an interesting project that people may try out different hairstyles and colors on their face pictures before they make a real change on their hairstyle. It will be used in the undergraduate course to motivate the students to learn how to use MATLAB toolboxes and its application on face recognition and segmentation.

Q: *Does your hairstyle fit their face shape?*

A: *Try out this algorithm and you will have an answer.*

Author/Presenters: **Dr. Sophie Xiaofan Liu**
Mr. Michael Mahabali
Mr. Jonathan Cieplechowicz
Engineering Department
Oral Roberts University
Oklahoma

Session: **WORKSHOP - Mathematics Education**

II. The Art of Mathematics: Exploring Tessellations with Technology & Traditional Methods

Tessellations can be used to engage K-16 students in thinking deeply about the art of mathematics, specifically the intersection of beauty & transformations. In this session, participants will create tessellations using paper and pencil, GeoGebra (free software), and online applets. Regular, semi-regular, and Escher-style tessellations will be explored through each of these methods. Participants will leave the session with materials to effectively implement the activities in the K-16 classroom.

Author/Presenter: **Dr. Cheryll Crowe**
Department of Mathematics
Asbury University
Kentucky

Friday - June 09, 2017

Room: **Palolo 3**
Time: **10:00am - 11:30am**
Session: **Visual Culture; Women's Studies; American Studies; Higher Education; Visual Arts; Inter-disciplinary; Art Education; Graphic Design; Inter-disciplinary, Product Design, Interior Architecture, Exhibit Design; Art, Drama; Film; Television & Other Media**
Session Chair: **Dr. Gloria Shin**

I. Studies in Genre: Elizabeth Taylor in Elephant Walk - The Plantation Film's Place in American Empire

Elizabeth Taylor's Hollywood plantation films, including Elephant Walk (1954) allows viewers to access the colonial past as the U.S. rises to become the world's most powerful imperial state in the 1950s, providing the representations that help form the American racial imaginary during this period of initial global postcolonial decolonization, assuaging the fears of viewers fearing the death of official empire while modeling a new white cultural imperative, cosmopolitanism.

Q: *How does the plantation film of the 1930s differ from its 1950s iteration in Hollywood cinema?*

A: *The 1930s version including Gone with the Wind apologizes for the failures of capitalism after its revival post Depression. The 1950s plantation film recuperates a global imperial past as it marks the U.S. ascension as the greatest of global superpowers.*

Author/Presenter: **Dr. Gloria Shin**
Film and Media Studies
School of Film and Television
Loyola Marymount University
California

II. Teaching by Storydoing

The graphic designer of yesterday solved communication problems. The designers of today and tomorrow need to solve business problems.

StoryDOING, rather than storyTELLING, is our method of teaching advertising design. Our students are challenged to come up with a problem and then...solve it. This approach requires deeper creative thinking and research, and results in more meaningful work on behalf of brands and social causes.

Author/Presenters: **Prof. Ann Lemon**
Prof. Summer Doll-Myers
Communication Design Department
Kutztown University of Pennsylvania
Pennsylvania

Continued on next page

Friday - June 09, 2017

Room: **Palolo 3**
Time: **10:00am - 11:30am**
Session: **Visual Culture; Women's Studies; American Studies; Higher Education; Visual Arts; Inter-disciplinary; Art Education; Graphic Design; Inter-disciplinary, Product Design, Interior Architecture, Exhibit Design; Art, Drama; Film; Television & Other Media**
Session Chair: **Dr. Gloria Shin**

III. Celebrating the Girl Child in South India: Fathers and Daughters in Tamil Cinema

This paper focuses on South Indian commercial cinema, selecting three award winning Tamil films that highlight the father–daughter relationship, and celebrate the girl child against the tide of social discrimination in favor of sons, and box office demands for non-serious entertainment

Author/Presenter: **Prof. Evangeline Manickam**
Department of Humanities & Social Sciences
Indian Institute of Technology Madras
India

Friday - June 09, 2017

Room: **Palolo 4**
Time: **10:00am - 11:30am**
Session: **Project Based Learning; Cross-disciplinary Projects; Real World Projects with Other Disciplines**
Session Chair: **Dr. Patrick Gardner**

I. Strengthening Industry/University Partnerships Through Multidisciplinary Capstone Projects

STEAM Capstone projects with industry. The presentation includes (1) How companies are recruited and how cross-disciplinary teams are formed; (2) Process for organizing/executing projects; (3) Processes for tracking progress, reporting results, and applying lessons learned; (4) Methods for ensuring course credit and accreditation requirements are satisfied; (5) Vehicle for compensating faculty (across campus) in team mentor roles; and (6) How intellectual property is managed.

Q: *How do you manage IP ownership?*

A: *Most IP stays with the industry sponsor, provided they are fully engaged in the project*

Author/Presenter: **Dr. Patrick Gardner**
College of Engineering & Technology
Western Carolina University
North Carolina

II. Engage MSU Students in Research of Model-Based Systems Engineering with Application to NASA Sounding Rocket Mission

Large and complex systems or systems-of-systems (SoS) design requires efficient collaboration between interdisciplinary teams of engineers. The engineers must communicate effectively with each other and the finished project or system must be reliable and robust. Model-Based Systems Engineering (MBSE) is a useful approach in achieving this goal

Author/Presenters: **Prof. Guangming Chen**
Mr. Oliver Meli
Department of Industrial and Systems Engineering
School of Engineering
Morgan State University
Maryland

Continued on next page

Friday - June 09, 2017

Room: **Palolo 4**
Time: **10:00am - 11:30am**
Session: **Project Based Learning; Cross-disciplinary Projects; Real World Projects with Other Disciplines**
Session Chair: **Dr. Patrick Gardner**

III. Concepts, Cranes, and Crayons: Inclusivity through Design

The design process is one of inclusivity. It is a tool used to synthesize and translate information to create universal understanding. In the Fall of 2016, design students worked with the Boston Children's Museum's to re-envision one of their exhibits. Developing S.T.E.A.M. based concepts the students created educational and engaging experiences for guests of all ages, genders, or physical abilities. This talk will showcase the challenges, methods and results of the 15 week course.

Q: *How did your institution support such an ambitious project?*

A: *Wentworth Institute of Technology has a history of supporting multidisciplinary projects. In fact, the institution is focused on building an Externally Collaborative Project-Based Interdisciplinary Culture (EPIC). Because of this we are encouraged to create courses across disciplines and with outside organizations that not only challenge the students but also the professors. The real world experience that comes from programs like this is invaluable to the students professional development which is also another pillar of the college.*

Author/Presenters: **Prof. Derek Cascio**
Ms. Lynette Panarelli
Department of Industrial Design
Wentworth Institute of Technology
Massachusetts
Ms. Nancy Harrod
Department of Interior Design
Wentworth Institute of Technology
Massachusetts

POSTER SESSION

Friday - June 09, 2017
11:00 am - 12:30 pm
Naio Room

Friday - June 09, 2017

Room: **Naio Room**
Time: **11:00am - 12:30pm**
Session: **Posters**

1. Service Learning: Student Meets Real-World Culture

The presenters share reflections and benefits found in integration of Service Learning with online and face to face courses to enhance student application of course concepts in a real-world environment with cultural diversity as they also make a difference in that world.

Author/Presenters: **Dr. Mary Ann Hollingsworth**
Dr. Pamela R. Rochester
College of Education
The University of West Alabama
Mississippi

2. 3-D Printing for Explosive Ordnance Disposal in the US Air Force

In 2015, the U.S. Air Force Academy established a Cooperative Research and Development Agreement with Autodesk, Inc., a leading global software and innovation corporation from northern California. The Primary investigator, Dr. Dan Jensen, led a senior capstone course in the Mechanical Engineering Department to accomplish several strings of effort for the Air Force Explosive Ordnance Disposal (EOD) community that minimize costs of disposal, yet required for inventory, shape charges.

Author/Presenter: **Dr. Patrick Suermann**
College of Architecture
School of Construction
Texas A&M University
Texas

3. The Impact of Costs Associated with Information Systems at the Lean Production Practices in Saudi Industrial Companies

This study aimed at identifying the impact of costs associated with information systems at the Lean production practices, namely: Saudi industrial companies. The study was implemented during the academic year 2016/2017.

Q: *Are there significant statistical differences for the application of costs associated with information systems by the Saudi industrial companies due to gender (male, female)?*

A: *There are no significant statistical differences at the level ($a \leq 0.05$) for the application of costs associated with information systems by the Saudi industrial companies from the perspectives of employees due to gender.*

Author/Presenter: **Dr. Waleed Afandi**
Management Information Systems
King Abdulaziz University
Saudi Arabia

Continued on next page

4. Active Learning Strategies to Improve Mastery of Anatomy and Physiology of the Human Endocrine, Neural and Excretory Systems in Freshman and Sophomore Foundational Biology Courses

Mastery of anatomy and physiology is essential for successful training of health care professionals. Active learning methods such as case studies, model labelling, group discussions and simulations incorporated into the lecture period increases learning gains and engages students.

Q: *What are three active learning pedagogies you could use in your course for students to master material?*

A: *Hands-on labelling of models, group discussions, case studies, peer mentors and physiological simulations*

Author/Presenters: **Dr. Anne Bower**
School of Science and Health
Philadelphia University
Pennsylvania
Dr. Kathryn Mickle
College of Science
Philadelphia University
Pennsylvania

5. The Impact of Learner Characteristics on the Multi-dimensional Construct Social Presence

This study explored the impact of learner characteristics on social presence as measured by the computer-mediated communication questionnaire. Using MANOVA findings reveal that the number of online courses taken and computer-mediated communication experience significantly affect the dimensions of social presence. Recommendations for online learning recognize that interaction patterns and pre-course instructional activities be structured so learners are prepared for online learning environments.

Q: *Why is the construct social presence important to online learning?*

A: *Evidence suggests that when learners experience a high degree of social presence in their online courses they are more likely to engage their cognitive presence in higher order thinking; actively participate in online communications; are less likely to drop out of their classes; and are more satisfied with their learning experience. As a result, social presence has come to be considered the critical affective component and is one of the more important constructs in determining the level of interaction and effectiveness of learning in an online environment.*

Author/Presenter: **Prof. David Mykota**
Educational Psychology and Special Education Department
University of Saskatchewan
Saskatchewan, Canada

Continued on next page

6. A Psychometric Analysis of the use of Instructional Videos for an Undergraduate Chemistry Lab

Eight instructional videos were made for an undergraduate organic chemistry I lab for students to view. Psychometric instruments were used to assess learning outcomes and help demonstrate that there is a relationship between the use of instructional laboratory videos and laboratory performance, understanding, and technique. Understanding how students learn by way of instructional videos informed changes in lab pedagogy that helped student learning and retention.

Author/Presenters: **Dr. Teresita Munguia**
Ms. Melissa Montaya
Ms. Sandra Jasso
Department of Mathematics and Natural Sciences
Our Lady of the Lake University
Texas

7. Pre-service Elementary Teachers and Emerging Technology

The purpose of this study is to understand the phenomenon of the "professional journey" of pre-service elementary teachers, by developing a conceptual model that provides information on the learning experiences and practices of that journey as it regards emerging technology, a virtual world called Second Life (SL).

Q: *What is the nature of learning experiences when pre-service elementary teachers are engaged in an emerging technology activity?*

A: *As a virtual reality (VR) platform, Second Life provided unique learning experiences that encouraged inquiring, discovering and problem solving. Also found were aspects of playing and social interacting.*

Author/Presenter: **Dr. Eunjin Bahng**
Department of Education
Iowa State University
Iowa

Continued on next page

8. Engineering Students' Stereotypic Images of Scientists in Japan

This study is a work-in-progress exploring stereotypical images of scientists held by Japanese undergraduate students. The participants enrolled in a small university located in the northern island of Honshu and majored in the fields of computer science and engineering. A total of 79 students participated in a Draw-A-Scientist-Test (DAST) developed by Chambers (1983). Also conducted were two focus group interviews, which were audio recorded and later translated in Japanese to English.

Q: *Do stereotypic images of scientists exist in Japan?*

A: *Yes. Initial results indicated that the stereotypic images found in the Mead and Metraus's (1957) study were still evident (e.g., a man who wears a white coat and works in a lab).*

Author/Presenters: **Dr. Eunjin Bahng**
Department of Education
Iowa State University
Iowa
Dr. Takako Yasuta
Center for Language & Research
University of Aizu
Japan
Dr. Jungpil Shin
School of Computer Science and Engineering
University of Aizu
Japan
Dr. Sissy S. Wong
Department of Curriculum and Instruction
College of Education
University of Houston
Texas

9. The Computational Thinking Curriculum for the Cross-Disciplinary Students

Yonsei University decided to provide computing thinking education to all students. We have developed and applied the curriculum for the past two years. From the first semester of 2017, we will create a new field of common curriculum and conduct computational thinking education. Computational thinking is taught to first year students regardless of major. After developing the curriculum, we are now extending the class that has been in prototype form into computational thinking and SW programming.

Author/Presenter: **Prof. Jeong Eun Nah**
Yonsei University
South Korea

Continued on next page

10. Social Cognitive Theory and Physical Activity Among Korean Male High School Students

The most critical step in developing and implementing effective physical activity interventions for adolescents is to understand the determinants and correlates of physical activity and it is strongly suggested that such effort should be based on theories. The purpose of this study is to use structural equation modeling to test the direct, indirect, and total effect of social cognitive theory constructs on physical activity among Korean male high school students.

Q: *Does social cognitive theory predict physical activity among Korean male high school students?*

A: *The social cognitive theory explained 42% of variance in physical activity among Korean male high school students.*

Author/Presenters: **Prof. Chung Gun Lee**
Mr. Seiyeong Park
Mr. Hyunwoo Kim
Department of Physical Education
College of Education
Seoul National University
South Korea
Ms. Seung Hwan Lee
Daesung High School
South Korea
Prof. Ji-Won Park
College of Sports Science
Woosuk University
South Korea

Continued on next page

11. Student Use of Online Mathematics Support (Maths Skills) in First Year Biochemistry

Many STEM students lack the necessary mathematical skills required for successful study in biochemistry. We introduced an online support site (Maths Skills) linked to the learning management system to provide clear explanations of important topics (e.g. algebra, graphing, logarithms) in the context of chemistry and biochemistry. It includes worked examples, and questions and answers for practice. In this study we investigated the utilisation of Maths Skills support by first year students.

Q: *Do online support systems offer an effective way to address mathematical deficiencies of students?*

A: *They are cost effective and can provide mathematics relevant to the discipline. There is also the option in the LMS to build in the discussion forum to increase student engagement.*

Author/Presenters: **Prof. Dianne Watters**
Ms. Wendy Loughlin
Mr. Christopher Brown
Prof. Peter Johnston
School of Natural Sciences
Griffith University, Nathan Campus
Queensland, Australia

12. MathBench Australia: Incorporating Online Biology Modules into the Biosciences to Promote Students' Engagement, Confidence and Competence in Quantitative Skills

The MathBench online biology modules are educational resources that have been designed in response to an increased need for supporting good quantitative skills and mathematical reasoning amongst our STEM students. Incorporation of some of these modules at Griffith University suggests that the MathBench modules are a valuable resource for students to practice and improve their quantitative skills and for consolidating their understanding of course content.

Q: *What are the limitations on the effectiveness of online self-paced resources?*

A: *Students' motivation and engagement; non-assessed online resources; students' mathematical background,*

Author/Presenters: **Dr. Giovanna Di Trapani**
Prof. Dianne Watters
School of Natural Sciences
Griffith University, Nathan Campus
Queensland, Australia

Continued on next page

13. Case Study on Local Area Revitalization in Japan Using Food

The purpose of this study is to investigate local area revitalization projects based on food. In Japan, there have been increasing numbers of proactive, food-based local area revitalization projects in recent years. Some examples of successful food-based local area revitalization projects include efforts using local farm products for revitalization, as well as cases where familiar products and ingredients that have a connection to the area were used as tools for revitalization, among others.

Author/Presenters: **Ms. Yuuki Tsunoi**
Dr. Masao Toyama
Faculty of Social Systems Science
Chiba Institute of Technology
Japan

14. Case Study on Failed Local Area Revitalization Projects in Japan

The purpose of this study is to investigate failed local area revitalization projects in Japan. Local area revitalization projects are various actions that are taken with the goal of strengthening the local economy or increasing the population. In terms of policies for local area revitalization, achieving short-term revitalization of an area is comparatively simple, but maintaining it in the long term is difficult. In this study, we focus especially on the aspects of local area revitalization plans that have failed.

Author/Presenters: **Mr. Ryoya Tabata**
Dr. Masao Toyama
Faculty of Social Systems Science
Chiba Institute of Technology
Japan

15. Case Study on Applying Unused Resources in Local Areas

The purpose of this study is to investigate the application of unused resources in local areas. Declining town shopping areas are sometimes called shutter towns. In shutter towns, the shops and offices are closed-up, and the presence of many shuttered businesses stands out. In Japan, this development has become more striking since the late 1980s, and it is now attracting attention as an urban problem. In this study, we investigate applications for unused resources such as shutter towns.

Author/Presenters: **Mr. Shunsuke Noro**
Dr. Masao Toyama
Faculty of Social Systems Science
Chiba Institute of Technology
Japan

Continued on next page

16. Case Study on Promoting Attendance for Japanese Professional Baseball Teams

The purpose of this study is to investigate promoting attendance at professional baseball games in Japan. For professional baseball teams, attendance at the stadium is one of the major factors that affects revenue. Revenue from attendance includes not only ticket sales, but also concession and product sales. In this study, we focus on attendance as a factor that facilitates the stable management of professional baseball teams.

Author/Presenters: **Mr. Yuta Shibahashi**
Dr. Masao Toyama
Faculty of Social Systems Science
Chiba Institute of Technology
Japan

17. Case Study on the Development of Practical Methods for Easing Tension that Require as Little Speaking as Possible

The purpose of this study is to investigate the development of practical methods for easing tension ("ice-breakers") that require as little speaking as possible. Ice-breakers are methods for easing the tension when people meet for the first time. This study discusses the development of ice-breakers that can be used with as little speaking as possible, enabling them to be used when the two parties speak different languages.

Author/Presenters: **Mr. Michiya Hihara**
Dr. Masao Toyama
Faculty of Social Systems Science
Chiba Institute of Technology
Japan

18. Case Study on Mitigating the Asymmetry of Information in the Medical Field

The purpose of this study is to investigate mitigating the asymmetry of information in the medical field. Medical practice represents an example of the principal agent relationship. Principal agent theory deals with the asymmetry of information that occurs between two parties. A principal agent relationship exists in medical practice, in which the patient is the principal and the doctor is the agent.

Author/Presenters: **Mr. Keitaro Demachi**
Dr. Masao Toyama
Faculty of Social Systems Science
Chiba Institute of Technology
Japan

Continued on next page

19. The Fifth Generation of Evaluation: Evaluating for Quality

This paper is the summary of more than twenty years of work, search, inquiry, and passion for all aspects of evaluation in academic settings. The authors have always understood the "Fifth Generation of Evaluation" as "Evaluating for Quality." When the authors think of the daring cognitive notion of advancing a "Fifth Generation of Evaluation", it is not with the intention of disavowing or disqualify the prior four generations, on the contrary, the intention is to contribute, based upon our experiences, with useful elements of analysis that will allow us to find common venues to solidify future evaluation processes [Muñoz, 2010].

Author/Presenters: **Prof. Gustavo A. Muñoz-Cuenca**
Centro de Investigación en Educación de Calidad
Universidad Pedagógica Experimental Libertador
Venezuela
Prof. Ramon A. Mata-Toledo
Computer Science Department
James Madison University
Virginia

20. The Impact of Learner Characteristics on the Multi-dimensional Construct Social Presence

This study explored the impact of learner characteristics on social presence as measured by the computer-mediated communication questionnaire. Using MANOVA findings reveal that the number of online courses taken and computer-mediated communication experience significantly affect the dimensions of social presence. Recommendations for online learning recognize that interaction patterns and pre-course instructional activities be structured so learners are prepared for online learning environments.

Q: *Why is the construct social presence important to online learning?*

A: *Evidence suggests that when learners experience a high degree of social presence in their online courses they are more likely to engage their cognitive presence in higher order thinking; actively participate in online communications; are less likely to drop out of their classes; and are more satisfied with their learning experience. As a result, social presence has come to be considered the critical affective component and is one of the more important constructs in determining the level of interaction and effectiveness of learning in an online environment.*

Author/Presenter: **Prof. David Mykota**
Educational Psychology and Special Education Department
University of Saskatchewan
Saskatchewan, Canada

Continued on next page

21. Seagrass and Aluminium are Strange Bedfellows: A Science-art Collaboration Via the Power of STEAM

This paper describes the collaboration of a project team consisting of two educators, an artist and a scientist who are producing a community event in the form of an art-science installation. The public event has not yet happened, but the journey to arrive at an unveiling of public art is well documented. The reasoning for undertaking the journey is a belief in the arts being a conduit to communicate science knowledge, thus shaping the way a community views their environment.

Author/Presenters: **Ms. Helen Holden**
School of Access Education
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Dr. Linda Pfeiffer
School of Education and the Arts
Central Queensland University
Queensland, Australia
Dr. Emma Jackson
School of Health, Medical and Applied Science
Central Queensland University
Queensland, Australia

22. Information Literacy Instruction in the STEM Classroom

Information Literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning.

Q: *Why is Information Literacy important?*

A: *An information literate student with strong analytical reasoning, critical thinking and problem-solving skills will be highly effective in the STEM classroom.*

Author/Presenter: **Dr. Pamela Russ**
Division of Education
Tougaloo College
Mississippi

Continued on next page

23. Differentiated Learning in Science Classrooms

Our research is on differentiated instruction in science classrooms. This research was done to educate and assist teachers with differentiating instruction in a science classroom. Differentiated instruction involves the teacher tailoring instruction to fit the needs of the students in the class. This research gives insight on how to properly integrate differentiation in the classroom and heighten student success outcomes.

Q: *How can this strategy assist students in the classroom?*

A: *Differentiated learning involves the students in the learning which makes them engaged in learning and eager to learn.*

Author/Presenters: **Mrs. Kristy Banyard**
Ms. Brandi Winters
Natural Science Department
Tougaloo College
Mississippi

Friday - June 09, 2017

Room: Palolo 1
Time: 12:45 - 2:15pm
Session: Project Based Learning; Cross-disciplinary Projects; Real World Projects with Other Disciplines; Speech/Communications
Session Chair: Dr. David Hedgecoth

I. Crossroads: Charter Schools and Music Education

The purpose of this session is to present current research on the topic of charter schools and arts education. Recommendations will be offered regarding ways music education can be implemented into charter curriculum. Philosophical and practical questions presented will include: How does current charter school policy align with the ESSA? How is choice in charter schooling paramount to other curricular issues? What effects have charters schools had on preexisting TPS music programs?

Q: *Do charter schools live up to expectations set forth by parents and school districts?*

A: *Like all relationships, it's complicated.*

Author/Presenter: **Dr. David Hedgecoth**
School of Music
Ohio State University
Ohio

II. The Tale of Two Creatives: The Maturing of Integrated Visual Communication

The maturing of visual technologies into visual culture has provided a glimpse into the future life of creative mediated communication. As mass communication and visual art become more intimately intertwined they bear offspring. The study investigates contemporary research and practice leading to IVC (Integrated Visual Communication) through professional experience, academic articles, discipline-based trade magazines and professionally based textbooks—1979 through 2013.

Q: *Who are the 21st century creatives and what do they do?*

A: *They are the new amateurs/produsers predicted by Alvin Toffler and many futurists.*

Author/Presenter: **Prof. Terre Layng Rosner**
Communication & Media Arts Department
The University of St. Francis
Illinois

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Friday - June 09, 2017

Room: **Palolo 1**
Time: **12:45 - 2:15pm**
Session: **Project Based Learning; Cross-disciplinary Projects; Real World Projects with Other Disciplines; Speech/Communications**
Session Chair: **Dr. David Hedgecoth**

III. Culturally Responsive Teaching Practices for General Education Communication Courses

This paper focuses on incorporating culturally responsive teaching practices into a general education communication course at a large state university in the western United States. Using a case study of a large public speaking course consisting of 70 class sections (N=1800 students), this paper discusses how a public speaking course was redesigned through innovative curricula, a customized textbook, reflexive learning exercises and assignments focused on increasing student academic success.

Q: *What are some ways for faculty members to incoporate these ideas into an already existing course?*

A: *Culturally responsive teaching requires instructors to learn more about their students and their experiences. From here, instructors must find innovative ways to connect course material to student experiences through relevant narratives, incorporation of local discourse and by creating material customized for the specific student population and aligned with student needs.*

Author/Presenter: **Dr. Kristina Ruiz-Mesa**
Communication Studies Department
California State University, Los Angeles
California

Friday - June 09, 2017

Room: **Palolo 2**
Time: **12:45 - 2:15pm**
Session: **Interdisciplinary Project-Based Learning; Vector and Circuit Analysis; Physics Education; Engineering Education; Industrial Design; Network Security; Computer Science; Computer Graphics/Animation Simulation Modeling**
Session Chair: **Dr. Franz Rueckert**

I. It's All Fun and Games Until Somebody Learns

At Wentworth Institute of Technology the authors led students of both Industrial Design and Physics in the creation of gamified lab kits that deliver a more complete learning experience for all participants. In this paper, we review the process and creation of the lab-kits from both scientific and design perspectives. We then show how the design and implementation of these lab-kits led to appreciable gains in both physics and design learning environments.

Q: *How did your institution handle Intellectual Property issues regarding the products you created?*

A: *WIT focuses on a model which stresses external collaborations and project-based learning. To foster such collaborations and further creative approaches, WIT has agreed that the authors retain sole ownership of our product.*

Author/Presenters: **Dr. Franz Rueckert**
Dr. James O'Brien
Dr. Gergely Sirokman
Prof. Derek Cascio
Sciences and Industrial Design
Wentworth Institute of Technology
Massachusetts

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Friday - June 09, 2017

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Session Chair: **Dr. Franz Rueckert**

II. Kerberos Simulator for Teaching Cyber Security

Education in cyber warfare is one of the most important factors in this on-going attack on information secure. Educating students and professionals on how cyber applications be posed to cyber-attack are created and implemented to keep information secure is vital. This paper presents the cooperation work between Charleston Southern University and the University of Florida on a Kerberos V4 Simulator that explains and demonstrates how the Kerberos V4 protocol is carried out.

Q: *Is this set of tools available for free distribution?*

A: *It will be free for non-commerical use.*

Author/Presenters: **Dr. Yu-Ju Lin**
Mr. Jordan Manier
Department of Computer Science
Charleston Southern University
North Carolina

III. Generating Procedural City using Three.js

The following paper describes simple steps involved to create a procedural city using the THREE.js library. This idea is explored through the implementation of a computer-generated city, containing multiple features such as dynamic draw distances and texture limiting. The overall focus of this project was to learn more about implementing 3D procedural city using the THREE.js is a cross-browser JavaScript library for creating animated 3D computer graphics in a web-browser.

Q: *What is your favourite color?*

A: *Green.*

Author/Presenters: **Mr. William Grove**
Mr. Jeyaprakash Chelladurai
Department of Business and Computer Science
School of Engineering
Lock Haven University of Pennsylvania
Pennsylvania

Friday - June 09, 2017

Room: **Palolo 3**
Time: **12:45 - 2:15pm**
Session: **Teacher Preparation STEM; Elementary Grades Engineering**
Session Chair: **Dr. Ron Browne**

I. Development of STEM Certificate Program for K-6 Preservice Teachers

Minnesota is facing a shortage of teachers trained in STEM philosophy and possessing the knowledge and strategies needed to support a STEM curriculum. There is currently no licensure for STEM teachers in Minnesota, so Minnesota State University, Mankato developed a certificate program to add on to the k-6 elementary initial licensure program. This paper will describe the contents and development of this certificate program. It will also highlight successful program graduates.

Q: *Can your students graduate with both elementary licensure and STEM certificate in four years?*

A: *Yes, and ten credits of STEM program can be applied to a graduate program in STEM education.*

Author/Presenters: **Dr. Ron Browne**
Dr. Karen Colum
Elementary and Early Childhood Education Department
Minnesota State University, Mankato
Minnesota

II. Teacher Cognition and Practices in a Low-SES School: A Case Study of Four Teachers

This study examined the cognition and practices of four teachers in low–SES schools. The study explored how the teachers' schooling, professional coursework, classroom practices, and contextual factors affected their teaching. The conceptual framework for the study came from Borg's (2003) representation of cognition for language teachers. The findings showed the teachers' cognition was influenced by schooling, classroom practices, and contextual factors, but not professional coursework.

Q: *How does this research impact how pre-service teachers are trained?*

A: *It calls for more respect and acknowledgement of teachers' implicit belief structures. It causes teacher education professionals to consider integrating those beliefs and understandings into the existing curriculum.*

Author/Presenter: **Dr. Stacy Hill**
School of Education
Whitworth University
Washington

Friday - June 09, 2017

Room: **Palolo 4**
Time: **12:45 - 2:15pm**
Session: **The Influences of Horticulture Activities on students Pre K through Higher Education**
Session Chair: **Dr. Teri Wiedman-Rouse**

I. Horticultural Activities Presented to Preschool-Aged Children in an Inclusive Setting and the Influences of the Activities on Peer Interaction and Task Engagement

This study will investigate the possible influences of horticultural activities with two classes of preschool children in a theoretically inclusive setting. As well as considering the influences of using Horticulture activities in a science methods course on students in Higher Education as part of a Teacher Preparation program and their perceptions of teaching science in PreK-4.

Q: *Do these activities influence behavior in the classroom and the perceptions of Science Education?*

A: *These activities influence both behavior and perceptions.*

Author/Presenter: **Dr. Teri Wiedeman-Rouse**
School of Education, Hospitality & Continuing Studies (SEHCS)
Widener University
Pennsylvania

II. How Nature Engages Young Minds to Build STEM/STEAM Skills

Let us take a look at how Nature engages young children in STEM /STEAM learning in early years of development. Using rocks, leaves, flowers, plants, acorns, pine cones and other materials of nature children develop interest to build STEM/STEAM skills. They learn to explore and investigate their surroundings and build a strong foundation for future learning.

In this hands-on interactive workshop participants will learn how to design curriculum in STEM/STEAM and get take away lesson plans.

Q: *What is the importance of STEM/STEAM in early childhood?*

A: *To explore, experiment and find in early years of development.*

Author/Presenter: **Mrs. Dipanwita Ray**
College of Education
University of South Carolina, Columbia
South Carolina

Friday - June 09, 2017

Room: **Palolo 1**
Time: **2:30- 4:00pm**
Session: **Making Science Education Accessible; Natural Science, Physics and Astronomy; Science Education; Psychology of Teaching and Learning Mathematics; Mathematics**
Session Chair: **Prof. John Hauptman**

I. Newspaper Physics: Instruction, Assessment, Content, and Community

I will describe and illustrate a physics course for students whose only knowledge of physics is that they do not like it! The physics content is driven entirely by what appears in the daily newspapers and generally covers most physics topics in a semester. This course was structured as a "Learning Community" at Iowa State University combining English and Physics into a single course. Most of the writing assignments were about physics.

Q: *Does this work?*

A: *Yes.*

Author/Presenters: **Prof. John Hauptman**
Department of Physics and Astronomy
Iowa State University
Iowa
Prof. EunJin Bahng
School of Education
Iowa State University
Iowa

II. Nature Explained Naturally (Pre-Socratic Philosophy vs. Cutting-Edge Physics)

The scientific theories of the pre-Socratics, natural philosophers from the sixth and fifth centuries BCE, were extraordinary! What were they and how do they measure up with our sophisticated mind-bending modern science after two and a half millennia of scientific progress? The answer will be surprising—scientists today are still pondering the fundamental problems raised twenty-five hundred years ago.

Q: *In brief, what's your research all about?*

A: *The scientific theories of the pre-Socratics, natural philosophers from the sixth and fifth centuries BCE, were extraordinary! What were they and how do they measure up with our sophisticated mind-bending modern science after two and a half millennia of scientific progress? The answer will be surprising.*

Author/Presenter: **Dr. Demetris Nicolaides**
Department of Natural Science and Mathematics
Bloomfield College
New Jersey

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Friday - June 09, 2017

Room: **Palolo 1**
Time: **2:30- 4:00pm**
Session: **Making Science Education Accessible; Natural Science, Physics and Astronomy; Science Education; Psychology of Teaching and Learning Mathematics; Mathematics**
Session Chair: **Prof. John Hauptman**

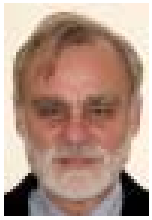
III. Math for First Year College Students: Concepts in Engineering Mathematics, Via its History

A new math course for first year engineering students, organized along historical lines, has been been developed to present six semesters of engineering mathematics, in one semester. This includes Calc I, Calc II, Calc III, linear algebra, complex variables, ordinary (scalar) and partial (vector) differential equations, and elementary Greek number theory. It has been successfully taught for two semester. A text book has been written for the class.

Q: *How can you teach 6 semesters of heavy duty math in one semester?*

A: *The key to this is to use the history to tell a story. Typically math is taught in a sterile way, with little or no physics, no system of units, and little to no history context.*

Author/Presenter: **Prof. Jont Allen**
Electrical and Computer Engineering Department
University of Illinois
Illinois



Friday - June 09, 2017

Room: **Palolo 2**
Time: **2:30- 4:00pm**
Session: **Media Literacies Intercultural Competence; Introduction to Science and Technology Studies; Cultural Anthropology; Media Studies; Discourse Analysis; Conflict Managment; 21st Century Creatives Embrace Multiple Personality Disorder**
Session Chair: **Dr. Deberati Sen**

I. Seen and Unseen: Cultivating Intercultural Competence through Visual Methods in Social Science Classrooms

We live in a media saturated world where still images mediate our imaginations about different cultures and cultural conflict. It is imperative that we focus on how students across the humanities and social science majors are self-learning about cultural difference through consuming media images. The focus of our paper is on what we call "Self Learning of Differences" (SODs): i.e., how students become aware about their own "meaning-making" around media images from leading news outlets.

Author/Presenters: **Dr. Debarati Sen**
Dr. Dan Paracka
Dr. Autumn Cockrel-Abdullah
Department of Geography and Anthropology
Kennesaw State University
Georgia

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Session Chair: **Dr. Deberati Sen**

II. "An erosion of confidence": Obstacles to Religious Philanthropic Giving in the US

This presentation highlights findings from a qualitative study on religious philanthropic giving in the US and Canada. We conducted nine focus groups with 53 participants to understand the trends of lessened giving to mission offerings. The results reveal the challenges to giving included: (1) a growing distrust of how funds are managed, (2) a preference for local giving, (3) a perceived shortage of communication regarding missions, and (4) insufficient personal funds.

Q: *What are the barriers to religious philanthropic giving in North America?*

A: *Distrust about how funds are used and preferences for local giving.*

Author/Presenters:

Dr. Rene Drumm
College of Health - Social Work
University of Southern Mississippi
Mississippi
Dr. Duane McBride
Institute for Prevention of Addictions
Andrews University
Michigan

III. Fonts of My Family: The Fleeting Craft of Cursive Writing

Cursive writing as a means to communicate is a fleeting practice. Students in grade schools are now being taught words per minute on a keyboard versus the craft of cursive writing, making this art form close to extinction. This research project centers on resurrecting the past through typographic design. Technology can encapsulate, document and archive one's handwriting from the past, thus creating digital typefaces for today from the handwritings of the deceased.

Q: *How can design and technology fuse together in order to recreate the handwritten traces of the past for digital use today?*

A: *By understanding, collecting and transposing the past (physical) to be used in the conceptual and applicational (digital) means of today.*

Author/Presenter:

Prof. Shawn Meek
Department of Art, Communication Design
Metropolitan State University of Denver
Colorado

Friday - June 09, 2017

Room: **Palolo 3**
Time: **2:30- 4:30pm**
Session: **Inter-disciplinary and other areas of Education; Educational Measurement and Evaluation**
Session Chair: **Dr. Arlene Alvarado**

I. Environmental Education and Stewardship: Vital Ingredients for Successful Environmental Restoration

Solastalgia is the pain or sickness caused by witnessing and experiencing harm to one's home environment. The risk for solastalgia is great in the U.S., where 53 million people live within 3 miles of a Superfund site. Suggested cures include involvement in the restoration of damages, and control in the solutions proposed to reverse damages. Environmental education and stewardship are vital components to the success of environmental restoration efforts, and for the alleviation of solastalgia.

Q: *How do you guarantee environmental restoration success?*

A: *Environmental education.*

Author/Presenters: **Dr. Arlene Alvarado**
Ms. Rayelynn Brandl (Connole)
Ms. Abigail Peltomaa
Clark Fork Watershed Education Program
Montana Tech
Montana

II. Evaluating Efficacy of Environmental Education Programming

Researchers will share the evaluation methods and outcomes of the Clark Fork Watershed Education Program (Cfwep.Org). Cfwep.Org students demonstrate strong understanding of the nature of the ecological impacts within their watershed and increased positive attitude toward stewardship. The need for robust evaluation methods within the environmental education realm is well-documented. Presenters will share outcomes, lessons learned, and insights regarding the program evaluation.

Q: *How does one develop a robust evaluation protocol for an environmental education program?*

A: *Cfwep.Org has developed reliable and valid tools that are targeted toward measuring both knowledge outcomes and dispositions.*

Author/Presenters: **Ms. Rayelynn Brandl (Connole)**
Dr. Arlene Alvarado
Ms. Abigail Peltomaa
Clark Fork Watershed Education Program
Montana Tech
Montana

Continued on next page

III. Essentials of Energy Storage

Hawaii is the most fossil fuel dependent state in the United States. But HI has set a 2045 deadline for 100% renewable electricity sourcing. Unfortunately, two of the principal renewable energy sources, wind and solar are intermittent, producing energy only when the wind blows or the sun shines. Even with substantial increases in renewable electricity production, there will be periods without enough available power. Some sort of bulk energy storage will be required. For various reasons, only the Sisyphus system of energy storage will be suitable for Hawaii's use. Fortunately, the cost of the Sisyphus system in terms of levelized cost of energy is lower than all other renewable options.

Author/Presenters: **Dr. John Rather**
RCIG, Inc.
Tennessee
Dr. Dean Hartley III
Sisyphus Energy, Inc.
Tennessee

IV. On Upper Bounds for the Ratios of Teichmuller to Stable Translation Lengths of Some Pseudo-Anosov Maps

In this presentation we provide a better upper bounds for the ratios of Teichmuller to stable translation lengths of point pushing pseudo-Anosov maps on punctured Riemann surfaces.

Q: *What is a point-pushing map on a punctured Riemann sueface?*

A: *A point-pushing map is a map that is isotopic to the identity when the puncture is filled in.*

Author/Presenter: **Dr. Chaohui Zhang**
Mathematics Department
Morehouse College
Georgia

Friday - June 09, 2017

Room: **Palolo 4**
Time: **2:30 - 4:00pm**
Session Chair: **Dr. Ellen Spitler**

WORKSHOP: Entrepreneurship Development, Inter-disciplinary

I. Visual Art and Digital Storytelling as Mediating Tools for Literacy Identity Transformation: Pedagogy for Literacy Rich and Equitable Access Classrooms

The topics of visual art and digital storytelling as mediating tools for literacy identity transformation will be explored and described in this workshop session. The authors assert that multimodal instructional engagements (the creation of visually artistic and digital re-presentation of self) that open space for an autobiographical exploration of literacy [reading, writing, speaking, visualizing, representing] practices, paired with a multimodal [artistic and symbolic] representation of those practices, when utilized pedagogically, become mediating tools that influence and transform literacy identity development, as well as support equitable access to disciplinary learning.

Q: *What 21st century transformative pedagogical practices incorporating multiple modalities of composition influence literacy identity development?*

A: *The topics of visual art and digital storytelling as mediating tools for literacy identity transformation will be explored and described in this workshop session. The authors assert that multimodal instructional engagements (the creation of visually artistic and digital re-presentation of self) that open space for an autobiographical exploration of literacy [reading, writing, speaking, visualizing, representing] practices, paired with a multimodal [artistic and symbolic] representation of those practices, when utilized pedagogically, become mediating tools that influence and transform literacy identity development, as well as support equitable access to disciplinary learning.*

Author/Presenters: **Dr. Ellen Spitler**
School of Education
Metropolitan State University of Denver
Colorado
Mrs. Carly Ibara
English Department
Mid-Pacific Institute
Honolulu, Hawaii
Mrs. Marisa Maurer
Holy Nativity School
Moanalua, Hawaii

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Friday - June 09, 2017

Room: **Palolo 4**
Time: **2:30 - 4:00pm**
Session Chair: **Dr. Ellen Spitler**

WORKSHOP: Art Education/Early Childhood Education

II. Why Art and Creativity are at the Center of Curriculum in Early Childhood?

How do children learn and express themselves? How do children think? What role does imagination, thinking and cognitive development play in Art and Creativity?

Art is all about process and not product in children. Creativity enhances Art building on children's imagination. Art starts with scribbling and scratching among toddlers and transforms into drawing, painting and coloring in early childhood period. Creativity continues throughout one's life.

Q: *What is Art and Creativity in early childhood years?*

A: *It is process and not product when we consider children's Art.*

Author/Presenter: **Mrs. Dipanwita Ray**
College of Education
University of South Carolina, Columbia
South Carolina

DAY 3

Saturday - June 10, 2017

Saturday - June 10, 2017

Room: **Naio**
Time: **11:30 am - 1:30 pm**

Appreciation Lunch

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Acknowledgement

Hawaii University International Conferences would like to thank the following people and organizations who have made our 2017 STEAM/STEM and Education Conference a success!

Maps: Courtesy of Hawaii Visitors & Convention Center

Sponsors

We would like to extend our heartfelt appreciation to our sponsors. With their support we are able to improve the 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. Jont Allen,** Electrical and Computer Engineering Department, University of Illinois, Illinois 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 presenters to be included in our programs, for the conference proceedings. Your work is of utmost importance to make sure those accepted meet the highest academic standards of presentation.

Dr. Abdelkrim, Brania
Dr. Aggarwal, Rachna
Dr. Allen, Donald
Dr. Alvaro, Joe
Dr. Baliram, Nalline
Dr. Bender, Diane
Dr. Crowe, Cheryll E.
Dr. Ford, Richard
Dr. Hamling, Anna
Dr. Lawson, Albertha
Prof. Lemma, Mulatu
Dr. Lowe, Mitzi
Dr. Nite, Sandra
Dr. Parker, Mary Jo
Dr. Rago, David
Dr. Rauchwerk, Susan
Dr. Richards, Danielle
Dr. Richards, Karin
Dr. Simmons, Denise
Dr. Tameze, Claude
Dr. Wang, Jenny

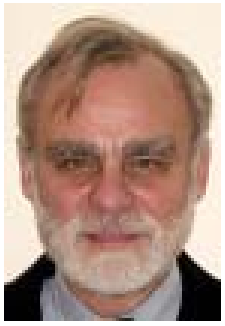
The HUIC staff would like to cordially invite you to participate in the growth and development of the conference by becoming a peer reviewer of our future conferences. If you are interested in becoming a peer reviewer, please complete the form available at the registration desk indicating your topic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

The Sessions 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.

Dr. Abrokwaa, Clemente
Dr. Alvarado, Arlene
Dr. Andrade, Maureen
Dr. Antwi-Boasiako, Kwame Badu
Dr. Brandt, Melanie
Dr. Browne, Ron
Dr. Estes, Brent
Dr. Ford, Richard
Dr. Gardner, Patrick
Prof. Hauptman, John
Dr. Hedgecoth, David
Dr. Hill, April A,
Dr. Kukreti, Anant
Prof. Letfullin, Renat
Dr. Liu, Sophie Xiaofan
Dr. Maguad, Ben
Prof. Pawlowski, Cheryl
Dr. Rueckert, Franz
Dr. Sen, Debarati
Dr. Shin, Gloria
Dr. Spitler, Ellen
Dr. Stites, Michele
Dr. Sun, Pengtao
Dr. Tillman, Gregory Anthony
Dr. Tseng, Tzu-Liang (Bill)
Dr. Uhlig, Ronald P.
Dr. Yakut, Cengiz

Some of Our Participants



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Philadelphia University
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Dr. Ben Maguad
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Dr. Leo Stocco
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Mr. Jeyaprakash Chelladurai
Lock Haven University
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Continued on next page

Some of Our Participants

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Ms. Rayelynn Brandl (Connole)
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Iowa State University
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Continued on next page

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Dr. Kristina Ruiz-Mesa
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Pennsylvania

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!

Mahalo!

Prince Waikiki (Hawaiian Prince Hotel Waikiki)

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