

**2017 Connecticut State Colleges &
Universities
Faculty Research Conference**



**Saturday, March 25th
Social Sciences Hall
Central Connecticut State University**

**Funding for this conference was provided by:
CSCU Board of Regents
CCSU Grants & Funded Research Office
CSU-AAUP Faculty Development Grant**

ABOUT THE CONFERENCE:

The Connecticut State University Faculty Research Conference dates back to the 1990s. It began as a faculty-led initiative typically held every other year, under the direction of Harvey Feinberg (now Professor Emeritus of History at Southern Connecticut State University). As of 2005, the CSU System Office officially began co-sponsoring the conference. German Bermudez, Associate Executive Officer, facilitated the planning of the conference as an annual showcase of faculty research in the CSU System and it rotated among the 4 CSUs until 2011.

This year's conference is an attempt to bring back this annual tradition, with the support of what is now the CSCU Board of Regents. We expect the conference to once again be an annual event and rotate among the 17 colleges and universities that now constitute the Connecticut State Colleges & Universities (CSCU) system.

CSCU FACULTY RESEARCH CONFERENCE SCHEDULE

7:30-12:00 REGISTRATION & BOOK EXHIBIT (Social Sciences Hall 123)

OPENING REMARKS (8:15) (Social Sciences Hall, First Floor Foyer)

Jane McBride Gates, Provost & Senior VP for Academic & Student Affairs, CCSU

FIRST PANEL SESSIONS (8:25-9:40) (*denotes session chair)

Connecticut Culture (Social Sciences Hall 111)

- 1.11 Renata C. Vickrey* (CCSU)
The Local Polish Community in Action: Polish Studies Program at CCSU
- 1.12 Katherine Hermes and Alexandra Maravel (CCSU)
'Finding the Onepennies among the Wongunk'
- 1.13 Sheldon Watson and Teresita Galarza (CCSU)
The Puerto Rican diaspora and American pluralism: A case study of Borinquea mothers in Hartford, CT
- 1.14 Edward Z Moore (CCSU) and Dowin Boatright, David Ross, Patrick O'Connor, Marcella Nunez-Smith (All Yale School of Medicine)
Racial Disparities in Alpha Omega Alpha Membership

Political Institutions (Social Sciences Hall 109)

- 1.21 Ghassan E. El-Eid (CCSU)
The Rise of ISIS: Options and Challenges
- 1.22 Paul Petterson (CCSU)
The Trump Administration: At War With Politics?
- 1.23 Robbin Smith (CCSU)
Revisiting the 2016 Election
- 1.24 Diana Cohen* (CCSU)
Inside Sport Politics: The Case of Women's Professional Cycling.

Geological Sciences (Social Sciences Hall 105)

- 1.31 James Tait, Mathew Connors, Shannon Bronson, Lara Bracci & Ryan Becker (SCSU)
Wave Energy Asymmetry, Seawalls and Beach Erosion on a Fetch-Limited Shoreline
- 1.32 Dickson Cunningham (ECSU)
Mountain Building Processes in Continental Interiors: Lessons from Central Asia
- 1.33 Michael Wizevich*, Melissa Luna & Jacqueline Giblin (CCSU)
Sediment Source Areas of the Mesozoic Hartford and Pomperaug Rift Basins of Connecticut

Business I (Social Sciences Hall 211)

- 1.41 Niti Pandey (ECSU)
Stakeholder identification versus stakeholder identity: An employee-centric model
- 1.42 Olga Petkova, Hannah Hurwitz & Aileen Yeager (CCSU)

- Implementation of a Service-Learning Framework in Management Information Systems Course
- 1.43 K. Niki Kunene, Kamila Zysk, and Mame-Fatou Diop (ECSU)
The volitional adoption and non-adoption of electronic Personal Health Records (PHRs) by consumers
- 1.44 Joo Eng Lee-Partridge*, Kimberly Maron, Steven Treschitta & Sandra Walker (CCSU)
Using Data Analytics to Find Opportunities to Improve a Museum's Attendance

Improving Student Success (Social Sciences Hall 209)

- 1.51 Lee Einhorn (CCSU)
DWF Rates: What they can--and cannot--tell us
- 1.52 Keith Michael Hughes* (CCSU)
The Effect of Academic Coaching on Student Retention at one New England Community College
- 1.53 Hak Joon Kim, Carol Geary & Arlene Bielefield (SCSU)
Bullying in the Library Workplace
- 1.54 Melvin Joseph Gerald Lesley, David Nelson, Mark Pineau, Michael Taylor, Alia Green, Colleen Welsh, Ericka Barnes, James Kearns, Albin Salazar & Cara Savino (SCSU)
An Undergraduate Laboratory Experience In Inorganic, Computational and Instrumental Chemistry

Nursing (Social Sciences Hall 205)

- 1.61 Kimberly Petrovic (SCSU)
Benefits of Taekwondo Training for Undergraduate Students at SCSU: A Phenomenological Study
- 1.62 Jennifer Ann Ort (WCSU)
Accountability among Baccalaureate Nursing Students: Definitions, Perceptions, and Engagement Practices
- 1.63 Leona Konieczny and Catherine S. Thomas (CCSU)
A Program Innovation: Connecting Service Learning to University and Department Mission and Outcomes
- 1.64 Kimberly Petrovic* (SCSU)
A Case Study on Nursing Student Involvement in Social Justice Week: Reported Findings

Engineering I (Social Sciences Hall 206)

- 1.71 Khaled J. Hammad (CCSU)
Suddenly Expanding Non-Isothermal Viscoplastic Flows
- 1.72 Reza Ghodsi (CCSU)
Invasive Weed Optimization Algorithm for minimizing total weighted earliness and tardiness penalties
- 1.73 Luz Amaya-Bower (CCSU)
Numerical Simulation of Bubble Formation in a Microchannel Using a Micro-Pillar
- 1.74 Zbigniew Prusak* (CCSU)
Introduction to Global Engineering Through Use of Standards and Cultural Differences

Computer Science I (Social Sciences Hall 202)

- 1.81 Lazar Pevac (Tunxis CC)
On raster image rotation algorithms
- 1.82 Krishna K Saha (CCSU) and Suojin Wang (Texas A&M)
Comparing Success Rates of the Chemotherapy Treatments for the Patients with Multiple Myeloma
- 1.83 Garrett Dancik(ECSU)
Cancer bioinformatics at Eastern: building computational tools for genomic analysis and education
- 1.84 Kehan Gao* (ECSU) and Taghi M. Khoshgoftaar (Florida Atlantic U)
Exploring Sampling-Based Feature Ranker Ensembles for Software Quality Classification

POSTER SESSIONS/COFFEE BREAK (9:45-10:15)

Social Sciences Hall 106 (performances at 9:45 and at 10:00)

- 2.00 Charles Menoche & The CCSU iPad Ensemble
Meet the CCSU iPad Ensemble: Performances of New Music for a New Sort of Chamber Group

Social Sciences Hall 125

- 2.011 Allison Conley (ECSU) Wasting 30 Days
- 2.012 Vicente Garcia and Scott Bartley (CCSU) From the Computer to the Pedestal

Social Sciences Hall, First Floor Foyer

- 2.02 Michael Knell and Jonathan Weinbaum (SCSU)
A new highly productive bonebed of the aetosaur Typothorax
- 2.03 Vincent Breslin (SCSU)
Plastic Microbead Contamination in Long Island Sound Coastal Embayments
- 2.04 Jennifer L. Piatek (CCSU), Ian Murphy (CCSU), Livio L. Tornabene (U of Western Ontario) & Nadine G. Barlow (Northern Arizona U)
Thermophysical Characterization of Well-Preserved Impact Craters on Mars
- 2.05 Michael Wizevich (CCSU), Christian Meyer (Naturhistorisches Museum Basel, Switzerland) & Andreas Wetzel (Basel U)
Geology of Triassic Dinosaur Trackway Localities of the Eastern Alps, Switzerland
- 2.06 Sarah E Maurer (CCSU)
Role of lipids in the origins of life
- 2.07 Thomas R. Rein (CCSU)
Exploring the influence of locomotion and evolutionary history on the shape of fragmentary fossils
- 2.08 JiongDong Pang and Abigail Wiegand (SCSU)
Testing Fresh Produce and Processed Plant Foods in Connecticut for Genetic Modification
- 2.09 Binlin Wu, Xin Gao, Jason Smith and Jacob Bailin (SCSU)
Rapid measurement of meat spoilage using fluorescence spectroscopy

- 2.1 Binlin Wu, Kevin Dahlberg, Xin Gao, Jason Smith & Jacob Bailin (SCSU)
Optical biopsy using fluorescence spectroscopy for prostate cancer diagnosis
- 2.11 Binlin Wu, Jason Smith and Jacob Bailin (SCSU)
Discrimination of basal cell carcinoma and normal human skin tissues using Resonance Raman Spectroscopy
- 2.12 Rahul Singhal (CCSU), Sam Chiovoloni (CCSU), Cristaly Moran (NVCC) & Peter K. LeMaire (CCSU)
Process optimization of LiMn_{2-x}Fe_xO₄ (0 ≤ x ≤ 0.5) cathode materials for chargeable batteries
- 2.13 Dennis W. Dawson (WCSU)
A Tale of Two (Close Binary) Systems
- 2.14 Steven Kirstukas and Luz Amaya-Bower (CCSU)
Comparison of a Computer-Based Grading Scheme to a Manual Rubric for Assessing Solid Models
- 2.15 Pankaj Nagpal (CCSU)
Use of Case study assignments in Undergraduate and Graduate Accounting Courses
- 2.16 Catherine S. Thomas and Nancy E. Peer (CCSU)
Use of Technology in a Pilot Peer Tutoring Program
- 2.17 Karen J. Riem, Carol Ciotto & Claude Abbott (CCSU)
Welcome to the Virtual Social-Emotional Academy: Integrating Information Technology in Teacher Education
- 2.18 Doncho Petkov (ECSU)
On Combining Work System Method and Soft Systems Methodology in IS Development
- 2.185 Roland DePratti, Garrett M. Dancik, Fred Lucci & Russell D. Sampson (ECSU)
Development of an Introductory Big Data Programming and Concepts Course
- 2.19 Sukeshini A. Garndhi and Nicole Lupien (ECSU)
No! That's Not How I Use Social Media: Understanding Non-Use Of Social Media Among Young Adults.
- 2.2 Divya Sharma and Kim Marino (WCSU)
Youth Development Unit at Garner Correctional Institution: Methodology, Findings and Conclusions
- 2.21 Tatiana Melendez-Rhodes (CCSU)
Breast cancer: Clinical implications for marriage and family therapists
- 2.22 Stacy Christensen (CCSU), Linda Wagner (U of Bridgeport) & Melissa Coleman (CREC)
The Lived Experience of Having a Rare Medical Disorder: Hermansky-Pudlak Syndrome
- 2.23 Matthew Orange and Cassandra Forsythe (CCSU)
Normative Data for Push-ups in the Standard Position in Females
- 2.24 Mary Patricia Lamberti and Victoria Zigmont (SCSU)
Sleep Quality in Full time Employed College Students
- 2.25 Victoria A. Zigmont, Peggy Gallup & Stephen Tomczak (SCSU)
Food Insecurity among Undergraduates at (SCSU) & Opportunities for Future Programming on Campus
- 2.26 Chee Hoi Leong, A. Russ, A.G. Schifino, Z. McCulloch, J. Melnyk & K. Kostelis (CCSU)
Effect of Calcium and Magnesium Lactate Supplementation on VO₂peak and OBLA

- 2.27 Chee Hoi Leong, A.G. Schifino, A.I. Weiler & F. L. Diaz (CCSU)
Effect of 6 Weeks of Eccentric Cycling Training on Walking Economy in Healthy Individuals
- 2.28 Cheryl Green (Yale-New Haven Hospital/SCSU)
Applying the Nursing Process to Enhance Accuracy and Timeliness of Documentation Entry into the Electronic Medical Record

SECOND PANEL SESSIONS (10:20-11:35) (*denotes session chair)

Gender, Ethnicity & Sexuality (Social Sciences Hall 111)

- 3.11 Christina Barmon (CCSU)
Successful Sexual Aging: Privilege and Disadvantage in Current Definitions and Measurements
- 3.12 Steve Muchiri (ECSU)
Social Cash Transfers and Measures of Well-being: Does Gender Matter?
- 3.13 Laura Bower-Phipps (SCSU)
Responding to Heteronormativity: Lesbian, Gay, Bisexual and Asexual Preservice Teachers' Aspirations
- 3.14 Mary Collins* (CCSU)
At the Broken Places: A Mother and Trans Son Pick Up the Pieces

Challenges in New Media, Marketing, and Sports (Social Sciences Hall 109)

- 3.21 Ari C. de Wilde (ECSU) and Chad Seifried (Louisiana State University)
Sport History and Sport Management in the United States: Opportunities and Challenges
- 3.215 Rotua Lumbantobing (WCSU)
Postseason Outcomes in the NBA: Does a Longer Opening Round Mean Fewer Upsets
- 3.22 Yeojin Kim (CCSU), William J. Gonzenbach (U. Alabama), Chris J. Vargo (U. Colorado Boulder) & Youngju Kim (U. Alabama)
First and Second Levels of Intermedia Agenda Setting: Political Advertising, Newspapers, and Twitter
- 3.23 Jodie Mozdzer Gil (SCSU)
Restricted Access: A review of Freedom of Information exemptions in an era of privacy concerns
- 3.24 Mark Cistulli* and Jason Snyder* (CCSU)
Parent Compassion and Military Advertising

Cultural Intersections in Drama, Music & Thought (Social Sciences Hall 205)

- 3.31 Mathew Foust (CCSU)
Emerson and Chinese Thought
- 3.32 Shouhua Qi (WCSU)
Adapting Western Classics for the Chinese Stage
- 3.33 Galina Bakhtiarova (WCSU)
Ritmo Latino: Xavier Cugat and Popular Music in the USA

- 3.34 Timothy Cochran* (ECSU)
'Crying Out With Life and Truth': Simulating Immersion in Messiaen's Des Canyons aux Etoiles

Environmental Sciences (Social Sciences Hall 105)

- 3.41 Sourav Chakraborty (CCSU)
Understanding Induced Resistance in Trees: Chemical Ecology of Ash (*Fraxinus* spp.) and Invasive Insects
- 3.42 Nimmi Sharma (CCSU) and John E. Barnes (NOAA/ESRL/Global Monitoring Division)
Laser Radar Detection of Long-Range Atmospheric Dust Transport
- 3.43 Jennifer Brown (ECSU)
The Effect of Air Quality on Infant Morbidity: Evidence from Temperature Inversions in the Rocky Mountains
- 3.44 Oluyinka Oyewumi*, Maxwell Meadow & Alison Weinstein (CCSU)
Geochemical Assessment of Trace Elements Concentration in and Rock Units Across Lebanon, CT

Business II (Social Sciences Hall 211)

- 3.51 Niti Pandey and Julia Underhill (ECSU)
Women, Strikes, and the Early Labor Movement
- 3.52 Heidi Hughes (CCSU)
Looking Inside Social Capital
- 3.53 Yan Quan Liu and Arlene Bielefield (SCSU)
Current Market Demand for Core Competencies of Librarianship
- 3.54 Matthew C. McGrath* (CCSU)
The Benefits of Benefit LLCs

Flipped Classrooms (Social Sciences Hall 209)

- 3.71 Barry Sponder (CCSU)
Training Indian University Professors to Use Flipped Learning Instruction
- 3.72 Barry Sponder and Lisa Pergolizzi (CCSU)
Action Research on the Flipped Classroom: From (CCSU) To Cromwell Middle school
- 3.73 Luz Amaya-Bower and Steven J. Kirstukas (CCSU)
Effect of Video-Guided Tutorials in a Standard Curriculum and in a Flipped Classroom for a CAD Class
- 3.74 Rae C. Schipke* (CCSU)
Toward an Understanding of How Social Media Can Improve the Flipped Classroom

Engineering II (Social Sciences Hall 206)

- 3.81 Reza Ghodsi and Luz Amaya-Bower (CCSU)
A Novel Design For Vertical Axis Wind Turbine
- 3.82 Khaled J. Hammad (CCSU)
Particle Image Velocimetry Study of Turbulent Flows Over an Open Cavity
- 3.83 Fu-Shang (John) Wei (CCSU)

- Servo-Flap Rotor Design for High Density Altitude Operation
3.84 Thomas J. Vasko* (CCSU)
A Comparison of Monolithic and Layered Plate Configurations for Containment

Computer Science II (Social Sciences Hall 202)

- 3.91 Irena Pevac (CCSU)
Illustrating Polymorphism via Inheritance and Polymorphism via Interfaces
3.92 Robert Workman and Winnie Yu (SCSU)
Introducing Coding Using the Python Programming Language
3.93 Sixia Chen (CCSU), Alexander Russell (UConn), Abhishek Samanta (Northeastern U) &
Ravi Sundaram (Northeastern U)
Deterministic Blind Rendezvous in Cognitive Radio Networks
3.94 Neli Zlatareva* (CCSU)
Building Applications for the Semantic Web

THIRD PANEL SESSIONS (11:45-1:00) (*denotes session chair)

New Dimensions in the Arts: Design, Technology, and Music (Social Sciences Hall 106)

- 4.11 Wujun Wang* and Eleanor Thornton (CCSU)
How Much Can You See? Students Improving Their Observational Skills In Design Foundations
4.12 Charles Menoche (CCSU)
New Music Notations: 3D Printing Solutions to Get 'In Touch' With The (Musical) Tablet
4.13 Wujun Wang (CCSU)
From Craftsmanship To 3D Render: A Hybrid Package Design Experiment.
4.14 Tina Rice and Eleanor Thornton (CCSU)
The Skinny Grid: Contemporary web development for graphic information design

Social Problems in the 21st Century (Social Sciences Hall 111)

- 4.21 Amy B. Smoyer (SCSU)
The Prison Nourish Project: Food in the lives of HIV-positive prisoners
4.22 Katherine Hermes (CCSU), Cheryl Meyer (Wright State U), Tarnish Irani (Buffalo State U)
Explaining Suicidal Motivation, 1617 to 2017 and Beyond
4.23 Yonty Friesem and Damiola Opayemi (CCSU)
Media Production as Social Interventions
4.24 Christopher Pudlinski* (CCSU)
Moments of silence on a peer support warmline

Health & Chemistry (Social Sciences Hall 105)

- 4.31 Erica E Watson (U. of St. Joseph)
Utilizing Social Settings to Detect and Prevent Cardiovascular Disease in African-American Patients
4.32 Pat Boily & Abreu J., Boudreau T., Cochrane A., Fiorito V., Genao, Y., Kalonda, J. Kerpen L., Mills J., Najeeb Y., Slade E., Thach R. (WCSU)

Factors affecting individual variation in the predisposition to develop diet-induced obesity in mice

- 4.33 Melvin Joseph Gerald Lesley, Justin Lipe, Archibald Agyekum-Yamoah, Sean McDarby, Samantha Rubio & Matthew van der Wielen (SCSU)
Investigations of Catalyzed Diboration and Tetraboration of Alkynes and Diynes
- 4.34 Peter K. LeMaire* (CCSU) and Peter C. K. LeMaire III (U of Pittsburgh)
Thermal Studies of Sweeteners

Business III (Social Sciences Hall 211)

- 4.41 Monique Durant and Kesi Brathwaite (CCSU)
The Qualified Residence Interest Deduction: Much Ado about Unmarried Co-Owners
- 4.42 Jim Campasano (CCSU) and Matthew Linn (UMass Amherst)
Understanding and Trading the Term Structure of Volatility
- 4.43 Elisabeta Pana (CCSU) and Tarun Mukherjee (U. of New Orleans)
Earnings Management Within Bank Holding Companies
- 4.44 Joseph Farhat* (CCSU) and Carmen Cotei (U. of Hartford)
The Dynamics of Capital Structure in Newly Formed Business

Assessing Student Outcomes (Social Sciences Hall 209)

- 4.51 Jess L Gregory* (SCSU)
Viewing Connecticut's SEED teacher evaluation model through the lens of self-determination
- 4.52 Julia Kara-Soteriou and Linda Clark (CCSU)
Intervention and Remediation Before Taking the Connecticut Foundations of Reading Test
- 4.53 Pamela Malaspina McKeever and Linda Clark (CCSU)
Delayed high school start times later than 8:30 AM and impact on graduation rates and attendance rates
- 4.54 Anurag Rimzhim, Marianne Fallon, Caleb Bragg, Matthew Heinly, Rebecca Boncoddio & Carolyn Fallahi (CCSU)
One Psychology Department's Curricular Assessment Initiative

Engineering III (Social Sciences Hall 206)

- 4.61 Young Moo Sohn (CCSU), Amit H. Varma (Purdue U) & Robert J. Connor (Purdue U)
Effects of Realistic Heat Straightening Repair On Damaged Steel Beam Bridges
- 4.62 Cairn Ely (CCSU)
Investigating Mechanisms that Stimulate Soil Remediation by Bacteria in the Plant Root Zone
- 4.63 Bin (Brenda) Zhou & Jacob Kovel (CCSU)
Transportation Project Delivery
- 4.64 Khaled J. Hammad* (CCSU)
Submerged Viscoplastic Non-Newtonian Jets

Mathematical Sciences (Social Sciences Hall 205)

- 4.71 Patrick Starvaggi (SCSU)
On the Distribution of Exit Times Similar to Wald's SPRT for the Negative Exponential Model
- 4.72 Mizan R. Khan (ECSU) and Karen Rogers (Emory U)
On White's characterization of empty lattice tetrahedra
- 4.73 Ivan S Gotchev (CCSU)
Cardinal Inequalities for Topological Spaces
- 4.74 Christian Yankov* (ECSU) and Oleg Mushkarov (Bulgarian Academy of Sciences)
Existence of Holomorphic Functions on Nilpotent Lie Groups

FEATURED SESSION: A Discussion on Research at the Connecticut State Colleges & Universities (Social Sciences Hall 109)

- 4.80 Rod Waterman*, Director, Grants & Funded Research, CCSU
Stan Kurkovsky, Professor and Chair, Computer Science, CCSU
Amy Taylor, Director, Sponsored Programs & Research, SCSU
Winnie Yu, Professor, Computer Science, SCSU

LUNCH/CLOSING REMARKS (1:00-2:15, Constitution Room, 2nd floor of Memorial Hall)

Zulma Toro, CCSU President

ABSTRACTS

(listed in alphabetical order, by first author)

1.73 Luz Amaya-Bower (CCSU, Engineering)

Numerical Simulation of Bubble Formation in a Microchannel Using a Micro-Pillar

A three dimensional numerical simulation of bubble formation in a microchannel with a micro-pillar is investigated. Simulation results are validated against experimental data, where the working fluids are water and nitrogen. The gas enters the microchannel through a single slit located at 0° , along the pillar's depth. The bubble formation process has two main regimes, namely discrete bubble and attached ligament. The transformation from one regime to another is dictated by the capillary number Ca and the volumetric flow ratio Q . An analysis is performed to evaluate the critical values at which the transformation takes place. In addition, for the discrete bubble regime, the simulation results provide a proportional correlation between Q and the size of bubbles, and an inversely proportional relationship between Q and formation time, for each Ca . The computations are performed in the range of $10^{-4} < Ca < 10^{-2}$ and $0.5 < Q < 10^{-2}$.

3.73 Luz Amaya-Bower & Steven J. Kirstukas (CCSU, Engineering)

Effect of Video-Guided Tutorials in a Standard Curriculum and in a Flipped Classroom for a CAD Class

Computer Aided Design is a 200 level engineering class tailored to introduce students to the fundamental techniques of a CAD software. The original structure of this class included a standard lecture format and assignments. The assignments for this class consists of tutorials and exercises. Tutorials are step-by-step instructions in how to construct a model. In contrast, exercises are similar in presentation but leave it to the student to design the modeling approach for a particular model. The authors have recognized two main drawbacks of the current structure: Firstly, class time is insufficient to cover all the material and for the students to complete assignments with the assistance of the instructor. Secondly, the tutorials are written in a format which may be confusing and difficult to follow. In addition, these tutorials provide an emphasis on the tools to construct the CAD models, while dismissing the model planning stage, which is critical for an engineering design. The authors have developed two alternatives to apply in the class to address both of the drawbacks. The first change was to convert the class to a 'flipped' or inverted format. The second change is that tutorial videos were created to show the construction process of the model from start to finish. The alternatives have been integrated in two different sections of the class: In one section, both changes have been implemented, while in the other section, only the tutorials were introduced. In general, the integration of these two alternatives has improved significantly the experience and the performance of the students in the class. Implementation and assessment data for both sections is presented. The results show a positive improvement in the overall student performance compared to previous offerings of this course. In addition, a series of surveys were distributed to obtain feedback and observations from students. In general, the findings show that the current methodology can be expanded to other sections of the class.

3.33 Galina Bakhtiarova (WCSU, World Languages and Literature)

Ritmo Latino: Xavier Cugat and Popular Music in the USA

My project explores the contribution of an almost forgotten now American band leader Xavier Cugat to the development of North American taste for Latino music. I argue that a versatile and innovative

entertainer Xavier Cugat (1901-1990) played a pivotal role in the adaptation of Latin American music to North American tastes and laid a foundation for many show business standards, such as contemporary Las Vegas-style shows and exuberant Latino ballroom dancing that is seen even today on shows such as Dancing with the Stars. (According to my research, Cugat was born in 1901, even though for most of his life he had posted his date of birth as 1900). For decades from the late 1930s to the 1960s, Cugat, affectionately called Cugie, was a household name in the United States. The self-proclaimed King of Rumba, Cugat was born in Spain and trained as a musician in Cuba. His weekly radio show from the Waldorf Astoria Hotel started in 1933 and ran for almost sixteen years. It was a major hit at a time when radio provided entertainment for most of the nation. The success of his unique adaptation of Latin American melodies to North American tastes paved his way to Hollywood where Xavier Cugat and his orchestra were featured in numerous motion pictures. Many popular entertainers such as Frank Sinatra, Desi Arnaz, Carmen Miranda, Lina Romay, Miguelito Valdez, Abbe Lane and Charo Baeza started their careers or performed at some point under his baton. It was Cugat who introduced Cuban entertainer Desi Arnaz to American audiences. Arnaz later became famous as TV character Ricki Ricardo, an exotic husband to the American sweetheart Lucy. This paper will explore Cugat's peculiar style, the roots of his popularity and the consequences of his tireless self-promotion that even today are echoed in American popular culture.

**3.11 Christina Barmon (CCSU, Sociology)
Successful Sexual Aging: Privilege and Disadvantage in Current Definitions and Measurements**

As gerontology has shifted from emphasizing the problems of aging to exploring how older adults can thrive, researchers have increased their attention on issues regarding sexuality and aging. A sometimes explicit, but often implicit assumption in the justification of this research is that sex is good for you, and that it is an integral part of successful aging or an engagement in a full and healthy life. Much of this research measures sex as frequency of vaginal penetration. This has the potential to promote aging and sexuality in narrow ways that privilege certain groups over others. In this research, I reframe the relationship between sexual activity and health from a feminist gerontological perspective by asking who is privileged by the current successful aging framework. Using a nationally representative sample of community dwelling older adults (3005) in the first wave of the National Social Life, Health, and Aging Project, I find that there is a wide variety of sexual and intimate behavior in which older adults engage which differs by social location. Furthermore, much of these differences are due to satisfaction with sex and relationships. Implications for gerontological practice will be discussed.

**4.32 Pat Boily, J. Abreu, T. Boudreau, A. Cochrane, V. Fiorito, Y. Genao, J. Kalonda, L. Kerpen, J. Mills, Y. Najeeb, E. Slade & R. Thach (WCSU, Biological & Environmental Sciences)
Factors affecting individual variation in the predisposition to develop diet-induced obesity in mice**

In humans and lab animals, there is substantial individual variation in the response to a change in diet. Even when kept under standard environmental conditions, and fed a controlled diet, the change in mass that results from switching from a 'standard' diet to a 'high-fat' diet can vary considerably among individuals, even among genetically uniform inbred mice, and even among homozygous twins in humans. As part of a group senior research course, 11 students investigated how energetic factors may be related to individual variation in the predisposition to develop diet-induced obesity. Ten inbred (C57BL/6) adult male mice were implanted with telemetry transponders that allowed the computerized recording of their body temperature and voluntary activity. The mice were held in cages with running wheels that were also monitored by a computer. This allowed recording body temperature, voluntary activity and wheel-running activity for 24hrs, once per week, for each mouse. Food intake and body

mass were measured weekly, All variables were measured while the mice were fed a standard rodent diet for 4 weeks (LabDiet 5001; 13% calories from fat; 2.91kcal/g), and then for an additional 4 weeks while they were fed a high-fat diet (Research Diet D12492; 60% of calories from fat; 5.24kcal/g). While fed a standard diet, the mice growth rate was slow and uniform (range 0.35 to 0.78g/week, mean=0.55g/week), but the switch to a high-fat diet resulted in substantial increase in growth rate and, more importantly, in the individual variation in growth rate (range 0.13 to 3.45g/week, mean=1.52g/week). Individual variation in growth rate was significantly and positively related ($R^2=0.84$, $P<0.01$) to the individuals' change in energy intake that resulted from the switch in diet: i.e. individuals that increased their energy intake exhibited a large increase in growth rate. This implies that the predisposition to develop diet-induced obesity may be driven by individual variation in the change in appetite that results from switching to a high-fat diet. Individual variation in growth rate was not significantly related to energy intake measured before or after the change in diet, or in any of the other measured variables. There were, however, trends toward significance for some of the variables (wheel running activity, body temperature) and the small sample size (10 mice) may have prevented the detection of other risk factors.

3.13 Laura Bower-Phipps (SCSU, Curriculum & Learning) **Responding to Heteronormativity: Lesbian, Gay, Bisexual and Asexual Preservice Teachers' Aspirations**

Heteronormativity, the 'privileging of heterosexuality through its normalization' (Jackson, 2006, p. 109), causes a great deal of confusion and anxiety for sexual minority preservice teachers as they consider how they will talk about their lives with students. Using queer theory, this paper explores how preservice teachers have experienced the normalization of certain sexual identities and how this may shape professional practices. Data sources included focus group and follow up interviews with sexual minority preservice teachers. Findings suggest that heteronormativity shaped participants' professional vision: to be out, be role models, and create safe spaces. Yet they did not know how to achieve this vision. Findings point to the importance of equipping all preservice teachers to identify and disrupt heteronormativity in schools.

2.03 Vincent Breslin (SCSU, Environment Geography and Marine Science) **Plastic Microbead Contamination in Long Island Sound Coastal Embayments**

Microbeads are spherical plastics (polyethylene or polypropylene) < 5 mm commonly found in many exfoliating cosmetics such as face and body washes. Plastic microbeads are capable of bypassing wastewater treatment systems and directly enter marine environments. Microplastics are capable of adsorbing persistent organic pollutants and pose a threat to marine wildlife through ingestion. Although banned in consumer cosmetics as of 2018, plastic microbeads will likely persist in coastal waters for many years as they do not readily degrade and are buoyant in the water column. Five surface water plankton tows (64 and 80 micron mesh nets) were conducted along predetermined transects in New Haven harbor in June 2016 proximate to two municipal wastewater discharges to quantify plastic microbead concentrations in the harbor. Using a dissecting microscope (45x magnification) microbeads were imaged using a Ken-A-Vision PupilCAM camera and measured using Toupview digital imaging software. A total of 185 plastic microbeads were found in the harbor plankton tows. The microbead morphologies and size distributions found in the New Haven harbor plankton tows were compared to plastic microbeads isolated from three common consumer skin care products.

3.43 Jennifer Brown (ECSU, Economics)

The Effect of Air Quality on Infant Morbidity: Evidence from Temperature Inversions in the Rocky Mountains

This paper contributes to the literature on the valuation of environmental quality by considering the impact that short term exposure to high concentration levels of total suspended particulates (TSP) can have on infant morbidity. Utilizing the existence of temperature inversions that are formed randomly by county throughout the Rocky Mountain Region and that vary widely based on weather patterns, this study is able to take advantage of what amounts to extreme shocks to air quality at the county level in order to observe changes in monthly infant inpatient hospitalization throughout Utah and Colorado over a ten year period. Specifically, for this project, two models using a panel of monthly hospital discharge and temperature inversion data at the county level from January 2004 - April 2014 are employed. The initial model uses county and state-by-year fixed effects to show that increases in PM 2.5 concentrations statistically significantly increase average monthly infant inpatient care with respect to respiratory infection and asthma. The second model corrects for any potential endogeneity with respect to the temperature inversion variable (related to economic and social conditions in the area) through the use of the monthly minimum height of the planetary boundary layer (PBL) by county as an instrumental variable. Planetary boundary layer data captures the height of each temperature inversion and is strongly correlated with total suspended particulate (TSP) concentration levels while being unrelated to local economic or social conditions. As with the initial model, results demonstrate that increases in PM 2.5 concentrations statistically significantly increase average monthly infant inpatient care with respect to respiratory infection and asthma.

4.42 Jim Campasano (CCSU, Finance) & Matthew Linn (University of Massachusetts Amherst)

Understanding and Trading the Term Structure of Volatility

We study the dynamics of equity implied volatility. We show that the dynamics depend both upon the option's time to maturity (horizon) and slope of the term structure of implied volatility for the underlying asset (term structure). Furthermore, the interaction between horizon and term structure plays a crucial role in explaining the dynamics of volatility. For assets with similar term structure, dynamics are strongly dependent upon horizon. Similarly, for assets with a given horizon, the dynamics of volatility depend upon term structure. We propose a simple, illustrative framework which intuitively captures these dynamics. Guided by our framework, we examine a number of volatility trading strategies across horizon, and the extent to which profitability of trading strategies is due to an interaction between term structure and realized volatility. While profitable trading strategies based upon term structure exist for both long and short horizon assets, this interaction requires that positions in long horizon assets be very different than the position required for short horizon options.

3.41 Sourav Chakraborty (CCSU, Chemistry and Biochemistry)

Understanding Induced Resistance in Trees: Chemical Ecology of Ash (*Fraxinus* spp.) and Invasive Insects

Invasive insect pest emerald ash borer (EAB) has killed tens of millions of North American ash trees (*Fraxinus* spp.) since its discovery in 2002. The specialist EAB larvae feed on the phloem tissue, cut the nutrient translocation and girdle the trees to death. It is currently distributed in twenty six states in the United States (including CT and MA) and two provinces in Canada. Trees manifest two different types of defense responses (1) constitutive (pre-attack) and (2) induced (post-attack). The responses are highly complex and often integrated resulting in synthesis of defensive proteins and/or specialized

metabolites. These proteins and metabolites play critical role in the survival of the trees. In order to understand the ash-EAB interactions we studied comparative phloem chemistry of North American and Asian Ash trees. It was apparent that the Asian trees are resistant to EAB perhaps due to their co-evolutionary history. Analytical methodologies to address such subtle differences are often complicated. A simplified work-flow was developed using data reduction approach. Also, a few putative proteomic and metabolomic biomarkers of resistance was discovered. Scientific progress, detailed analytical methodologies and the knowledge gaps related to ash-EAB model will be discussed during the talk. We hope this information will be pivotal in developing new management and breeding strategies.

3.93 Sixia Chen (CCSU, Computer Science), Alexander Russell (UConn), Abhishek Samanta (Northeastern U) & Ravi Sundaram (Northeastern U)
Deterministic Blind Rendezvous in Cognitive Radio Networks

Blind rendezvous is a fundamental problem in cognitive radio networks. The problem involves a collection of agents (radios) that wish to discover each other (i.e., *rendezvous*) in the *blind* setting where there is no shared infrastructure and they initially have no knowledge of each other. Time is divided into discrete slots and spectrum is divided into discrete channels, $[n] = 1, 2, \dots, n$. Each agent may access (or *hop on*) a single channel in a single time slot and two agents *rendezvous* when they hop on the same channel in the same time slot. The goal is to design deterministic channel hopping schedules for each agent so as to guarantee rendezvous between any pair of agents with access to overlapping sets of channels.

The problem has three complicating considerations: first, the agents are *asymmetric*, i.e., each agent A_i only has access to a particular subset $S_i \subset [n]$ of the channels and different agents may have access to different subsets of channels (clearly, two agents can rendezvous only if their channel subsets overlap); second, the agents are *asynchronous*, i.e., they do not possess a common sense of absolute time, so different agents may commence their channel schedules at different times (they do have a common sense of slot duration); lastly, agents are *anonymous* i.e., they do not possess an identity, and hence the schedule for A_i must depend only on S_i .

Whether guaranteed blind rendezvous in the asynchronous model was even achievable was an open problem. In a recent breakthrough, two independent sets of authors, Shin et al. (Communications Letters, 2010) and Lin et al. (INFOCOM, 2011), gave the first constructions guaranteeing asynchronous blind rendezvous in $O(n^2)$ and $O(n^3)$ time, respectively. We present a substantially improved and conceptually simpler construction guaranteeing that any two agents, A_i, A_j , will rendezvous in $O(|S_i| |S_j| \log \log n)$ time. Our results are the first that achieve nontrivial dependence on $|S_i|$, the sizes of the sets of available channels. This allows us, for example, to save roughly a quadratic factor over the best previous results in the important case when channel subsets have constant size. We also achieve the best possible bound of $O(1)$ rendezvous time for the symmetric situation; previous works could do no better than $O(n)$. Using techniques from the probabilistic method and Ramsey theory we establish that our construction is nearly optimal: we show both an $\Omega(|S_i| |S_j|)$ lower bound and an $\Omega(\log \log n)$ lower bound when $|S_i|, |S_j| \leq n/2$.

2.22 Stacy Christensen (CCSU, Nursing), Linda Wagner (U of Bridgeport) & Melissa Coleman (CREC)
The Lived Experience of Having a Rare Medical Disorder: Hermansky-Pudlak Syndrome

Objective: Hermansky-Pudlak Syndrome (HPS) is a rare form of albinism, affecting approximately 1 in 500,000 to 1 in 1,000,000 non-Hispanic individuals. The syndrome is more commonly found in Hispanics, where 1 in 1,800 individuals in Northwestern Puerto Rico are impacted. Because of the rarity of this chronic condition, patients may face challenges in their ability to cope with the diagnosis. The objective

of this qualitative study was to begin to understand the lived experience of adults with a rare and chronic genetic disorder, Hermansky-Pudlak Syndrome.

Methods: This qualitative phenomenological study was conducted using semi-structured face-to-face interviews to explore the experience of individuals with this rare genetic disease. Interviews were tape-recorded, transcribed, and Colaizzi's (1978) method of data analysis was used to extract themes. Member checking with two study participants provided validation of results.

Results: A purposive sample of adults between the ages of 20 and 49 diagnosed with HPS were interviewed (N= 23). The majority (83%) were female. Data analysis resulted in the emergence of comprehensive categories related to long road to diagnosis; giving, in order to move forward; burden of being the expert; and survival is to belong to community.

Discussion: The data analysis begins to shed light on the complex challenges that individuals who have a rare and chronic illness face, along with the ways that they have found to remain positive and resilient in their quest to improve their care and quality of life. Through an understanding of these unique challenges, healthcare professionals can enhance the wellbeing of these patients by the provision of more holistic care.

3.24 Mark Cistulli and Jason Snyder (CCSU, Management Information Systems) Parent Compassion and Military Advertising

Given what we know about Millennials and their parents, it is no surprise that the military has directed much of its recent promotions at parents. Making the decision about joining the military can be stressful for young adults. In the present study, we ask if military marketing communications can elicit comforting behaviors from parents by triggering their sense of compassion. In other words, can these messages increase a parent's likelihood to offer his or her child comfort during this stressful decision-making process? Compassion is a social emotion which has been discussed in organizational communication, psychology and social marketing literature (Kanov, Maitlis, Worline, Dutton, & Frost, 2004; Forbus & Snyder, 2013; Snyder & Cistulli, 2009; Solomon 1998). Compassion often results in comforting: "a group of communicative behaviors intended to reduce the emotional stress of others (Burleson & Goldsmith, 1988). A survey was developed from previous research asking parents about both military advertising, previous service in the military and compassion. Preliminary results using ANOVAs and regressions indicate that previous service and age impact attitudes toward the military and use of compassion.

3.34 Timothy Cochran (ECSU, Performing Arts – Music) 'Crying Out With Life and Truth': Simulating Immersion in Messiaen's Des Canyons aux Etoiles

In *Des Canyons aux Etoiles* . . . , a musical work commissioned to celebrate the American bicentennial, composer Olivier Messiaen defines the United States through representations of Utah's birds and canyons. Focusing on the experiential power rather than the pictorial intentions of Messiaen's music, this paper examines ways that Messiaen uses overwhelming dissonance and textural saturation to immerse the listener in a musical version of Bryce Canyon. The music challenges a stable subject/object relationship for the listener by promoting humility and awe within the landscape over more visually-oriented touristic encounters. Simulations of immersion serve implicit political and theological goals for the French Catholic composer as city-dwelling listeners are invited to embrace dwelling in the natural environment as a means of revaluing faith and breaking free from what Messiaen perceived as the twin hindrances of mechanized civilization and secularism.

1.24 Diana Cohen (CCSU, Political Science) Inside Sport Politics: The Case of Women's Professional Cycling

This paper explores the gendered politics that engulf the world of female cycling. Based on in-depth interviews with 40 elite male and female racers, as well as textual analysis of social media posts made by athletes, my project exposes the barriers that female athletes face in achieving recognition in the athletic world. I deconstruct the nuanced and often hidden dimensions of the glass ceiling that stifles the popularity and success of elite female racing. This includes offering an engaging critique of how resources are distributed within the cycling industry. Finally, this paper investigates how both cycling governing bodies—as well as the athletes themselves—serve as powerful political actors. I conclude by illuminating how professional female cyclists are challenging traditional gender hierarchies.

3.14 Mary Collins (CCSU, English)

At the Broken Places: A Mother and Trans Son Pick Up the Pieces

My latest nonfiction book, which is coming out with Beacon Press in May 2017, is a collection of essays that I exchanged with my trans son about key issues that sprang up during our debates as he sought to make medical changes during his teens and college years. I'm especially interested in showcasing the unique format--the essay exchange--as a way to handle complex differences with dignity and respect. It's especially relevant after this latest election.

2.011 Allison Conley (ECSU, Art and Art History)

Wasting 30 Days

This project was originally a collaboration with the Yale School of Forestry and Environmental Sciences. From December 12th through January 10th (30 days), I sketched every piece of trash that I produced. Compostable items and food were omitted, but all recyclables and general trash goods were recorded. The act of sketching my waste forced me to consider each piece that would otherwise be forgotten after being thrown out. I became publicly accountable for every item, both artistically and ethically. The sketches stand as an objective record of my waste production void of any circumstance or explanation to defend the wastefulness. This project consists of 30 drawings, 18 x24" each, mounted on same sized foam core.

1.32 Dickson Cunningham (ECSU, Environmental Earth Science)

Mountain Building Processes in Continental Interiors: Lessons from Central Asia

Classical plate tectonic theory fails to explain the active development of intracontinental, intraplate mountain ranges that are distant from continental margins undergoing plate convergence (subduction or collision). However, Central Asia provides numerous examples of actively forming intraplate mountain ranges in various stages of evolutionary and topographic development such as the Altai, Gobi Altai, Tien Shan and Beishan. Thus, most geologists regard Central Asia to be the world's best natural laboratory for investigating how continental interiors reactivate and generate significant mountain belts. This is a topic of global interest to earth scientists, because all continents have experienced intraplate reactivation at some time in their tectonic history. Since 1994, I have conducted summer field research during 20 summers in Mongolia and western China investigating processes of continental reactivation and mountain building in the huge Gobi Corridor region between Tibet and Siberia: an area the size of Alaska. Through collaboration with European, American, Chinese and Mongolian scientists, we have made major advances in understanding the geological preconditions and tectonic processes that drive crustal deformation in the heart of Asia. In this presentation, I will present key research results

concerning tectonic processes, active fault systems, earthquake hazards and landscape evolution in one of the most remote, but geologically interesting regions on Earth.

1.83 Garrett Dancik (ECSU, Computer Science)

Cancer bioinformatics at Eastern: building computational tools for genomic analysis and education

Genomic analyses are routine in many areas of biomedical research. For example, the genomic analysis of a patient's tumor can provide insight into the most effective way to treat the patient. With a genomic understanding of disease, the hope is that personalized medicine will provide the right treatment to the right patient at the right time. In this work, we discuss several ongoing bioinformatics projects at Eastern, with the objective of facilitating the identification of biomarkers in bladder cancer and other diseases, and in educating students in how to carry out these analyses. Two bioinformatics projects and one educational tool will be discussed. The Bladder Cancer Biomarker Evaluation Tool (BC-BET) is an online database of genomic profiles from >1500 patients, and allows for the rapid evaluation of whether a gene of interest is associated with clinical features such as stage, grade, and survival. The web-based tool shinyGEO allows users to easily download and analyze data from the Gene Expression Omnibus (GEO), a public repository of gene expression data that includes >1 million samples. Importantly, shinyGEO supports features not provided by other tools, such as survival analysis and the generation of publication-ready graphics. Both BC-BET and shinyGEO help make genomic data accessible to non-programmers and non-bioinformaticians, promising to lead to an increased understanding of biological processes and genomic diseases. Finally, we describe swirl-tbp, an R package for helping students learn R programming, data science, and bioinformatics. With swirl-tbp, instructors create lessons with template-based problems, which are problems that include numbers, variable names, or other features that are randomly generated at run-time. As a result, a student completing a swirl-tbp lesson can be provided with an endless supply of related practice problems that differ, e.g., with respect to the numbers used. Students can therefore practice as much as needed to reinforce concepts and improve their problem-solving skills. The tools mentioned above are available from the following link: <https://gdancik.github.io/bioinformatics/>

2.13 Dennis W. Dawson (WCSU, Physics, Astronomy and Meteorology)

A Tale of Two (Close Binary) Systems

Ursae Majoris stars are eclipsing binary systems where the member stars are close enough to have a common atmosphere and sporadically exchange gases across a connecting throat. Their short (6-8 hr) orbital periods and large amplitudes (~ 0.7 mag) make them ideal for observations from a university observatory, or during an observing run at a facility with allocated time. Additionally, observing strings separated by months or years can reveal subtle systemic variations, such as changes in period or the presence of star spots. I present findings from extended multi-wavelength observations of two W Uma systems with the 20-inch WCSU Observatory telescope and the 31-inch telescope of the Lowell Observatory near Flagstaff, Arizona. Physical parameters were derived from Binary Maker models. The astrophysical significance of these results is also discussed.

3.21 Ari C. de Wilde (ECSU, Kinesiology and Physical Education) & Chad Seifried (LSU)

Sport History and Sport Management in the United States: Opportunities and Challenges

This article examines the faculty job market in the humanities broadly, and sport history specifically, to assess the past, current, and future of sport history as an academic field. We suggest one way to expand the sport history job market and popular appeal of academic sport history is for scholars to embrace

research questions and topics related to sport management and business history and the activities of sport entrepreneurs and commercial organizations. The authors explore the multi-disciplinary field of business history as a comparison to the field of sport history and highlight evidence of job opportunities in sport management, emphasize previous calls by sport management scholars for more context or history within the field's research, and position sport historians as possible boundary spanners for prospective industry partners and collaborative or interdisciplinary work as promoted by universities.

2.185 Roland DePratti (ECSU, Computer Science), Garrett M. Dancik (ECSU, Computer Science), Fred Lucci (ECSU, Computer Science) & Russell D. Sampson (ECSU, Physical Sciences)
Development of an Introductory Big Data Programming and Concepts Course

Computer scientists have been developing techniques to glean useful information from datasets for decades. The nascent disciplines of Big Data and Data Science have evolved over the last 10 years due to the rapid explosion in the amount of data collected by scientists, businesses, and other organizations. It is imperative that the next generation of workers is educated with the necessary knowledge to confront Big Data problems. It is the role of higher education institutions to train future data scientists and Big Data practitioners to fill those positions that the marketplace needs. This paper describes the choices and decisions made by one higher education institution to develop a course in Big Data Programming and Concepts that will be part of a future concentration in Data Science.

4.41 Monique Durant (CCSU, Accounting) & Kesi Brathwaite
The Qualified Residence Interest Deduction: Much Ado about Unmarried Co-Owners

Interpretation of the limitation on the qualified residence interest deduction received a good deal of attention in 2016 as the Tax Court and the Ninth Circuit Court of Appeals examined a seemingly straightforward Code Section 163(h)(3). Since the Revenue Act of 1987, the deduction of qualified residence interest has been limited to \$1 million (\$500,000 in the case of married persons filing separate returns) and the maximum amount of home equity indebtedness has been limited to \$100,000 (\$50,000 in the case of married persons filing separate returns). Interest on such indebtedness in excess of these monetary limitations is nondeductible personal interest. At issue in the cases of *Voss v. Commissioner* and *Sophy v. Commissioner* is the application of Code Section 163(h)(3) to unmarried co-owners of a residence. In their determination of whether the indebtedness limitations would apply on a per-residence or per-taxpayer basis, the Internal Revenue Service, Tax Court, and Ninth Circuit conducted thorough analysis of the language of the statute, including the statute's legislative history, implications of related tax provisions, and social and policy concerns, in addition to the foreseeable financial consequences to taxpayers. Here we examine the legislative history and development of the qualified residence interest deduction and examine the divergent interpretations of the indebtedness limitations and the corresponding impact of the interpretations on unmarried taxpayers. We also consider the surprising announcement that the Internal Revenue Service will follow the Ninth Circuit's holding in *Voss v. Commissioner*; in other words, that the indebtedness limitations will apply separately to each unmarried co-owner of a residence. We conclude with a discussion of pending legislation in the House of Representatives and any possible future legislation regarding to the qualified residence (home mortgage) interest deduction.

1.51 Lee Einhorn (CCSU, English)
DWF Rates: What they can--and cannot--tell us

In his opening address to the faculty in August 2015, CCSU Provost Carl Lovitt shared a chart listing the classes with the ten highest DWF rates in the university (i.e. the number of students who receive a D or F grade or who withdraw from the class after the add/drop deadline). The goal was to use data to determine which classes might be serving as barriers to student progress; consequently, this would help the university intervene specifically and effectively to improve retention and graduation rates. However, the DWF rate itself is a problematic figure for several reasons. First, there isn't a lot of research on this statistic as a meaningful data point; moreover, we don't know what normal or baseline is, nor can we say that such a figure exists for all classes and all students. Additionally, it treats all cases of student 'failure' identically; thus, it ignores differences between Ds, Fs, and Ws, class structure and size, purpose, fit into program requirements, the myriad assessment measures (and idiosyncrasies involved) and, most meaningfully, the many and varied reasons why students fail to successfully complete a class. As the relatively new Developmental Writing Specialist at CCSU (I arrived in Fall 2013), I oversee the English 099 program, one of the classes 'called out' as an obstacle to graduation because of its high DWF rate. In his presentation, Dr. Lovitt argued that faculty resistance to change and self-reflection were the primary cause of these high rates, along with inaccessibility (mostly due to the fact that most of these classes are taught by adjunct/PT faculty who are not required or paid to hold office hours or to be on campus beyond their teaching obligation). I wanted to take up the Provost's call and to see for ourselves if his statistic was valid and could be used to self-assess and intervene, so I began recording data on every student who 'DFW'd' in ENG 099 to see if there were particular reasons. My research has shown that, in fact, students in ENG 099 do not fail for the reasons he proffered, but rather, for reasons that, overwhelmingly, aren't instructor or course-generated: financial desperation (which drives students to drop or take these classes at nearby CCs which are far cheaper), medical conditions (including unofficial/undiagnosed disabilities), lack of proper advising (leading to disorientation about priorities and needs towards goals), and most commonly, a lack of time to commit fully to their work due to work/family/commute. In my presentation, I will offer practical and research-backed approaches to improving our DWF rate and student/instructor success in 099 and other CSCU classes.

1.21 Ghassan El-Eid (CCSU, Political Science) The Rise of ISIS: Options and Challenges

In recent years, much has been said and written about the so-called Islamic State, otherwise known as ISIS (Islamic State in Iraq and Syria) or ISIL (Islamic State in the Levant.) However, most of the literature has been rather descriptive. In this paper, I propose to conduct an in-depth analysis of salient factors that led to the rise of ISIS, and more generally, the resurgence of the Islamic fundamentalist movement in the Middle East. The movement itself is deep-rooted in the region. It dates back to the days of the Arab Renaissance and the decline of the Ottoman Empire in the late 19th century. Many Muslims saw the return to Islam as the answer to political, social, and economic problems plaguing the Muslim world at that time. Of particular interest is the Wahhabi movement that originated in the Arabian Peninsula and began to attract followers even earlier. It is our contention that although the Islamic movement has played a vital role in the region's politics in recent history (particularly in Egypt, Syria, and Iraq), intervention by colonial powers in the inter-war era and American policies in both core (Levant, Egypt, and Saudi Arabia), and periphery (Iran and Afghanistan), states in the region exacerbated the problem and widened the divide between the West and radical Islam. To that end, a detailed analysis of salient historical events will be conducted. Special emphasis will be placed on the United States' intervention in Afghanistan during the 1980s and its invasion of Iraq in 2003. Furthermore, the Obama administration's strategy during the Syrian civil war will be examined. After analyzing the underlying causes of the rise of Jihadism, we will endeavor to provide an analytical framework detailing an effective strategy to confront Islamic jihadist groups and to undermine their ideology.

4.62 Cairn Ely (CCSU, Engineering)

Investigating Mechanisms that Stimulate Soil Remediation by Bacteria in the Plant Root Zone

The purpose of this research is to examine signaling mechanisms which stimulate bacterial degradation of persistent organic pollutants (POPs) in soil. This type of soil treatment is generally called bioremediation. However, research has shown that the interaction between bacteria and plants can increase the extent of pollutant removal. Studies have provided convincing evidence that plants use certain phytochemicals in the presence of toxic soil contaminants to encourage nearby bacteria to degrade these compounds into metabolic substrates and harmless smaller molecules. Elucidating the mechanisms that plants employ to stimulate bacterial degradation will allow for more effective treatment methods. Selection protocols used in this study led to the isolation of bacteria which can metabolize polycyclic aromatic hydrocarbons (PAHs) from the plant root zone (rhizosphere). Biomolecular techniques indicate that groups of bacteria ('guilds') in the root zone change with increased PAH contamination. In addition, biochemical assays show that these bacteria also readily metabolize aromatic root exudates. These findings, in total, suggest that aromatic exudates from plant roots induce the catabolic pathway for bacterial degradation of PAHs. Accentuating this mechanism of pollutant treatment through engineered methods may provide for greater soil remediation and could be additionally applied to removal of hazardous organic chemicals in waste water streams.

4.44 Joseph Farhat (CCSU, Finance) & Carmen Cotei (U of Hartford)

The Dynamics of Capital Structure in Newly Formed Business

In this article, we examine how startup businesses finance their operations over time. We empirically test the financial growth cycle theory developed by Berger and Udell (1998) using the Kauffman Firm Survey data, the largest longitudinal data set comprised of a random sample of U.S. startups launched in 2004. Simultaneously, we examine whether the pecking-order and trade-off theories explain the changes in capital structure of startups from inception to the later stages of their development. Consistent with the predictions of financial growth cycle theory, at the startup stage, entrepreneurs rely on initial insider capital sources, such as personal savings, financing offered by friends and family, quasi-equity, and personal debt. Over time, as firms become less opaque, the proportion of business debt and trade credit financing in the total capital injection volume increases significantly. Owner's education and race have a significant impact on the capital injections over the business life cycle. Highly educated owners choose to inject lower proportions of personal debt and trade financing, whereas white owners inject lower proportions of personal equity and rely more on trade financing.

3.31 Mathew Foust (CCSU, Philosophy)

Emerson and Chinese Thought

There has been much debate concerning the scope and extent of Asian influences upon Ralph Waldo Emerson's thought. In *Zen and American Thought* (1962) Van Meter Ames dubbed Ralph Waldo Emerson "An American Bodhisattva." Decades later, Richard Grossman presented parallels between Emerson and Laozi in *The Tao of Emerson* (2009). Soon after, Philip Goldberg highlighted the Hindu imprint upon Emerson's thought in *American Veda* (2010). The notion that Confucianism played a role in the shaping of Emerson's thought, however, has received comparatively little attention. Drawing on Emerson's published writings, addresses, correspondence, and reading journals, the case for a Confucian influence upon Emerson's thought—especially his ethical writings—is developed.

A second part of this project involves the matter of Daoist parallels in Emerson's thought, as proposed by Grossman (2009), and more recently refuted by Neal Dolan and Laura Jane Wey. In "Emerson and China" (2016), Dolan and Wey claim that this conceptual overlap is *necessarily* coincidental, for no translations of Daoist texts existed in Emerson's lifetime. At the same time, they hold that Daoism is the Chinese philosophy that best matches Emerson's philosophy, denying any significant compatibility with Confucianism. I hold that their analysis is flawed in at least two ways: translations of Daoist texts *did* exist in Emerson's lifetime, and the difference between Confucianism and Daoism is less stark than what they suppose. Disentangling these issues will help to achieve more clarity on the relationship between Emerson and Chinese thought.

4.23 Yonty Friesem (CCSU, Communication) Media Production as Social Interventions

The purpose of the proposed research is to evaluate efficacy of media production as a social intervention tool for bullying prevention while enhancing teenagers' ability to self-reflect, empathize with others, and critically analyze media messages and social systems. To describe these interconnected goals, Daniel Goleman and Peter Senge (2014) coined the term The Triple Focus, as they referred to helping teenagers to focus on the inner, the other and the outer. Goleman and Senge responded to the rising concern of scholars about the teenagers' growing deficit in cognitive, social and emotional skills as their use of digital media increases (Gardner, and Davis, 2013; Rushkoff, 2013; Turkle, 2015). At the same time, other scholars noted the connection of the expanding digital engagement to the increase in reports on bullying (Malecki, Demaray, Coyle, Geosling, Rueger, and Becker, 2015). Instead of increasing detachment, digital media can increase self-reflection, empathy and systems thinking. Applying The Triple Focus can offer an effective way to engage youth and help them deal with these challenges. Today, when many normal interpersonal conflicts transform into bullying (Malecki, et. al., 2015), we need to find an accessible tool to promote self-reflection, empathy and system thinking. Media production has been found to be an effective tool for social interventions (Blum-Ross, 2016; Campbell, and Robards, 2013; Charmaraman, 2011; DeGennaro, 2011). In addition, media production has been a powerful tool for peacebuilding between teenagers from conflict areas (Wright, 2011). And yet, the effects of these interventions have not yet been measured in terms of self-reflection, empathy, and systematic thinking, nor in a longitudinal study. For the purpose of longitudinally examining participants' self-reflection, empathy, and systematic thinking via media production, this research study compared two distinctive cases of teenagers creating their own media. The research study evaluated how each of the workshops affected the participants by using the self-reflection checklist (Desautels, 2014), empathy scale (Jolliffe and Farrington, 2006), and systems thinking evaluation (Hopper and Stave, 2007). Analysis of each case study showed a similar process of group dynamics that lead to social and emotional learning. Though participants found it challenging to produce in groups they value the collaboration. The differences between the groups showed a distinctive strategy to work on the group dynamics using nonverbal communication. The research highlights the benefits of media production and call for exploring the social and emotional learning using quantitative instruments.

1.84 Kehan Gao (ECSU, Computer Science) & Taghi M. Khoshgoftaar (Florida Atlantic U) Exploring Sampling-Based Feature Ranker Ensembles for Software Quality Classification

This paper presents the repetitive feature selection (FS) method to address the high dimensionality and class imbalance problems that often appear in software measurement data. The repetitive method is an iterative process of data sampling followed by feature ranking which finally aggregates the results generated during the iterative process. In this work, we are interested in studying the effect of two

components (the ranking technique and the sampling method) in the repetitive FS process on classification performance. We investigate six independent filters (ranking techniques) and an ensemble filter based on these six filters, along with three data sampling methods, each combined with two different post-sampling class ratios between the two classes. The empirical study results demonstrate that the ensemble filter presents more stable and better classification performance than the individual filters with respect to various sampling approaches. Among the three sampling techniques, random undersampling and synthetic minority oversampling display better classification behavior than random oversampling. In addition, the repetitive FS process with data sampling more significantly improves the performance of classification models than filters used only by themselves.

**2.012 Vicente Garcia (CCSU, Art) & Scott Bartley (CCSU, Theatre)
From the Computer to the Pedestal.**

As a practicing artist, I am actively involved in continuously producing and refining a creative body of work. This creative project of sculptural vessels is based on the use of the extrusion process and die making using software and the CNC machine as traditional fabrication techniques.

**2.19 Sukeshini A. Garndhi & Nicole Lupien (ECSU, Business Administration)
No! That's Not How I Use Social Media: Understanding Non-Use Of Social Media Among Young Adults**

"With an unprecedented number of social media options available today people often switch between them suggesting that they make active decisions on how to use and not use them. In this research we investigate the flip side of use, namely non-use which has implications for how we design technologies that can better match people's needs and preferences" (Baumer et al., 2015). Specifically we explore how and why non-use of social media is exercised among college students, as they tend to be not only early adopters and heavy users of technology but also expected to set the pace for future technology use. Preliminary analysis of qualitative data from an interview study of twelve undergraduate students suggests the prevalence of two specific forms of non-use: restraining and erasing. Restrain was exhibited in not wanting to create and share self-generated content on social media. By self-generated content we mean text or pictures created by the user and not others. Reasons cited for this behavior include fear of being uninteresting to others, fear of being inaccurately perceived by social contacts, and fear of being inappropriately perceived by potential employers. The act of erasing included deliberate deleting of content from others as well as blocking/deleting user contacts including one's own account. Reasons cited for this behavior include fear of being judged by the company they keep, and fear of addiction. Even though participants feared negative effects of social media use, they did not consider non-use in the form of complete abandon or rejection. Instead they only adopted temporary or selective non-use measures while voluntarily continuing to be on social media. Participants acknowledged that while they mostly likely won't miss much if they got off social media completely, they did not do so for the fear of missing out (Przybylski et al., 2013). Together the above findings have design implications for how social media content is made available to users. Designers should consider features that will allow users to actively control content they see instead of algorithms that decide the content user can see based on pre-determined criteria.

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**3.81 Reza Ghodsi and Luz Amaya-Bower (CCSU)
A Novel Design For Vertical Axis Wind Turbine**

In this study a new design for a Vertical Axis Wind Turbine is presented. First, four different blade designs were developed and compared initially using Computational Fluid Dynamics (CFD). A two-dimensional transient model was created in Fluent using dynamic mesh in order to evaluate the performance of the turbine at different wind speeds. The performance criterion is based on higher blade speed and lower drag coefficient. Accordingly, a blade design was chosen and a prototype was built. This prototype was tested in a wind tunnel to evaluate the power generated by the turbine at different wind speeds. The turbine was connected to a generator in order to obtain a relationship between wind speed and power. The turbine produces high torque and runs very quiet. There is no flickering effect and is safe for birds. The outcomes of this study prove that the new blade design is an effective alternative for the Vertical Axis Wind Turbine.

**1.72 Reza Ghodsi (CCSU, Engineering)
Invasive Weed Optimization Algorithm for minimizing total weighted earliness and tardiness penalties**

In this paper, minimizing total weighted tardiness and earliness criteria on a single machine is considered. Job processing time is a linear function of its starting time and each job has a distinct due date. In this study an Invasive Weed Optimization (IWO) algorithm is proposed for machine scheduling problem. Because the local search operator in IWO algorithm is designed for continuous problem only, a simple and efficient coding and decoding technique is applied to map the discrete feasible space of the permutation to a number. Then, this number is used to produce the solution. The computational results show that the performance of the proposed algorithm is much better than the GA algorithm for this problem in finding the best solutions.

**3.23 Jodie Mozdzer Gil (SCSU, Journalism)
Restricted Access: A review of Freedom of Information exemptions in an era of privacy concerns**

This exploratory study looks at Freedom of Information laws in 50 states to quantify exemptions that restrict access to records. The review seeks to determine how often privacy is used to exempt records from release, in an age when the public has unrestricted access to publish information on the Internet. This study is a follow-up to a previous paper on legislative proposals to add new restrictions in 10 states. In that review, privacy was cited in 69 of 138 proposals, and a majority of those proposals sought to protect 'personal information.' The data in the sample points to clear concerns about personal information being shared in an age of big data collection and easy publishing.

**4.73 Ivan S Gotchev (CCSU, Mathematical Sciences)
Cardinal Inequalities for Topological Spaces**

In this talk new cardinal inequalities for topological spaces will be presented which extend or improve some classical cardinal inequalities of Arhangel'skii; Hajnal and Juhasz; and others.

**2.28 Cheryl Green (Yale-New Haven Hospital & SCSU, Nursing)
Applying the Nursing Process to Enhance Accuracy and Timeliness of Documentation Entry Into the Electronic Medical Record**

The accuracy and comprehensiveness of nurses' patient progress notes are imperative in ensuring that patients receive timely care in emergent situations, particularly during transfers to higher levels of care (i.e. intensive care units). Teaching nurses to apply the nursing process when documenting changes in patients' conditions, can enhance accuracy and timeliness of documentation entry into the electronic medical record.

4.51 Jess L Gregory (SCSU, Educational Leadership & Policy Studies)

Viewing Connecticut's SEED teacher evaluation model through the lens of self-determination

With shifts in teacher evaluation models and high stakes testing at the crux of educational reform, teachers are struggling to fulfill their classroom responsibilities, and rate at top levels. The goal of teacher evaluation reform is to provide both a vehicle for professional development and a means to remove underperforming educators. The level of quality of the teacher is the single most important, school-based factor that impacts student academic achievement (Hanushek & Rivkin, 2010; Hazi & Rucinski, 2009; Lacireno-Paquet, Morgan, & Mello, 2014). Teacher evaluation has been targeted as a way to ensure that every student has high quality teachers (Donaldson, 2009; Louis, 2007; Owings & Kaplan, 2003). McKay suggests that the reform in teacher evaluation is merely the removing of the rose colored glasses that have described teacher evaluation for so long. Teachers have received bland, positive feedback for years that does little, if anything, to improve student outcomes (Gates Foundation, 2010, 2013; Hattie, 2012; McKay, 2012). Connecticut's System for Educator Evaluation and Development (SEED) is a model evaluation and support system (Piloted in 2012-13 school year) designed to consider multiple forms of evidence and promote dialogue about both student and educator learning. This research sought to explore how educators speak about the SEED model, through the lens of self-determination theory. The model focuses on aligned professional development to support teacher growth, but all of this depends on how well positioned educators are to receive feedback, and use it to motivate themselves to effect change. This study focuses on the human side of change, something that has not been well explored in the myriad of studies about value-added teacher evaluation measures (Chetty, Friedman, & Rockoff, 2014; Donaldson, 2009; Hanushek & Rivkin, 2010; Harris, Ingle, & Rutledge, 2014). The findings of this study suggest that the views of how much influence educators feel that they have in determining student outcomes not only impacts student learning, but also the ability of SEED to improve educators and thereby education in Connecticut.

3.82 Khaled J. Hammad (CCSU, Engineering)

Particle Image Velocimetry Study of Turbulent Flows Over an Open Cavity

Flow over an open cavity is important from fundamental and practical points of view. It is frequently encountered in practice, e.g., many aerospace applications including subsonic, supersonic and hypersonic propulsion systems, weapon bays of combat aircraft, landing gear of airplanes, structural discontinuities, adjacent tall buildings, high-speed trains, and sunroofs and opened windows in automobiles. Its geometrical simplicity and flow complexity made it a long-standing numerical benchmark for the computation of compressible and incompressible flows. Cavity flows have been used to shed light on the physics of numerous aerodynamic and aeroacoustic features, e.g., unsteady boundary layer separation, the periodic formation of vortices at the leading edge and shedding to the trailing edge, flame stabilization in propulsion systems, vortex-structure interaction, flow-induced acoustic oscillations and structural vibrations, and noise generation. Flow over an open cavity was the subject of numerous studies in an attempt to understand the complex flow physics, improve our understanding of momentum, heat, and mass transport as well as development and implementation of effective flow control mechanisms that minimizes their adverse effects. Most previous experimental

work used point measurements techniques like Laser Doppler Velocimetry Anemometry (LDA) and Hot Wire Anemometry (HWA). Point measurement techniques are inherently incapable of instantaneously resolving the formation or the evolution of vortical structures. Particle Image Velocimetry (PIV) is a whole-flow-field optical measurement technique, providing instantaneous velocity measurements in a cross-section of a flow field. It is a high spatial-resolution and non-intrusive diagnostic system that can be adapted to a large variety of macro-to-micro-scale flows. Global measurement techniques like PIV became the tool of choice in more recent investigations. PIV was used to study the flow structure and turbulence upstream, over, and downstream a shallow open cavity. Sequences of high-resolution images over time were captured and processed, using adaptive correlation techniques, to obtain highly-resolved velocity fields. Three sets of measurements, corresponding to turbulent incoming boundary layer flows and a cavity length-to-depth ratio of four, were acquired, analyzed, and reported. The cavity depth based Reynolds numbers were 21,000; 42,000; and 54,000. The selected flow configuration, highly-resolved flow field measurements, and well characterized inflow conditions allow for straightforward assessment of turbulence models and numerical schemes.

4.64 Khaled J. Hammad (CCSU, Engineering) Submerged Viscoplastic Non-Newtonian Jets

The flow behavior of submerged jets can be influenced by many factors such as inlet conditions, swirl, co-flow, confinement, composition and rheology. Understanding the flow phenomenon of confined Newtonian and non-Newtonian jets is important to the design of chemical reactors, jet mixers, polymer mixing and injection molding devices. Most of the performed work so far is related to Newtonian jets. However, there are numerous materials that behave in a viscoplastic non-Newtonian manner such as slurries, pastes, plastics, electro-rheological fluids, suspensions of solids in liquids, and emulsions. A viscoplastic material behaves like a solid under the application of small stresses and flows like liquids once the applied stress exceeds a critical value called the yield stress. Examples of yield stress materials encountered daily include mayonnaise, ketchup, toothpaste, gelled products, paint, and concrete. Submerged jet flows of viscoplastic fluids can be found in important industries such as food processing, biotechnology, plastics and polymers, pulp and paper, and petrochemicals. Environmental applications of submerged jet flows of viscoplastic fluids include the mobilization of the settled sludge and mixing of the radioactive nuclear waste stored in numerous underground tanks at various U.S. Department of Energy, DOE, sites. The waste, in the form of slurry/sludge, was generated during processing of nuclear materials. Removal of the waste from underground storage tanks is part of the ongoing cleanup effort at DOE storage sites such as Hanford, WA. Submerged jets have been identified as the most feasible approach to sludge mobilization and the formation of uniform slurry. A detailed parametric study is performed to investigate the impact of inflow inertia and viscoplastic non-Newtonian rheology on the flow structure and penetration characteristics of submerged jets. The results demonstrate the dramatic impact of yield stress on the flow behavior of submerged viscoplastic jets. A large outer recirculation region characterizes the flow of a Newtonian jet. However, in the case of viscoplastic non-Newtonian jets, the extent and strength of the outer recirculation region are found to significantly diminish with the yield number, a non-dimensional yield stress. Once a critical yield number is exceeded, the outer flow recirculation is eliminated and a stagnant region is formed. The presence of yield stress was found to reduce the penetration depth of a submerged jets by more than an order of magnitude in comparison with the Newtonian one. The penetration ability of viscoplastic jets substantially diminished with the yield number.

1.71 Khaled J. Hammad (CCSU, Engineering) Suddenly Expanding Non-Isothermal Viscoplastic Flows

Suddenly expanding internal flows are of significant importance from practical and fundamental points of view. They are frequently encountered in practice, by design to promote mixing and enhance heat/mass transfer, or by default, in piping systems that are part of the fluid processing and transport. The geometrical simplicity and hydrodynamic complexity of the axisymmetric sudden expansion flow made it a long-standing numerical benchmark for computation of Newtonian and non-Newtonian fluids and the associated heat/mass transfer phenomenon. Most previous work, whether theoretical and/or experimental, is related to Newtonian fluids. However, there are numerous materials that behave in a viscoplastic non-Newtonian manner such as slurries, pastes, plastics, electro-rheological fluids, suspensions of solids in liquids, emulsions, and radioactive nuclear waste. The current study improves our understanding of the impact of rheology and geometrical changes encountered in practice on non-isothermal internal flows. Heat transfer from viscoplastic non-Newtonian flows through axisymmetric sudden expansions is investigated by numerically solving the fully-elliptic partial differential equations of motion and energy along with the Bingham constitutive equations to provide accurate predictions of the velocity and temperature fields. A parametric study is implemented to reveal the impact of geometry, inflow conditions, rheology, and thermo-physical properties on the flow and heat transfer behavior of suddenly expanding viscoplastic non-Newtonian flows. A corner recirculation region is always present in the case of Newtonian fluids. However, for viscoplastic fluids, flow recirculation may or may not exist. The yield number, a no-dimensional yield stress, is found to have a significant impact on the flow and heat transfer behavior. Substantial heat transfer enhancement exists downstream the expansion plane in the form of a peak heat transfer rate that is up to twice the downstream, fully developed value. For a given Reynolds number, increasing the yield number results in transitioning from a recirculating to a non-recirculating viscoplastic flow regime. Transitioning from a non-recirculating to a recirculating viscoplastic flow regime is found to have a strong influence on the resulting heat transfer characteristics. A single peak is observed for non-separating viscoplastic flows as opposed to two peaks in the case of separating viscoplastic flows. For viscoplastic flows, the peak heat transfer rates increase with the yield number.

1.12 Katherine Hermes & Alexandra Maravel (CCSU, History) 'Finding the Onepennies among the Wongunk'

Sarah Onepenny (d. 1713) and her daughter (d. 1727) were among only three Native women to leave wills in the Hartford County Probate Court archives before 1750. She and her sister Hannah were descended from a sachem, Onepenny, all of whom signed the 'Glastonbury deed' of 1673. Yet most histories of the period omit them and even recent attempts to reconstruct Wongunk genealogies are silent about the Onepennies. Our paper uncovers who they were and offers some theories about why their name became obliterated from the Wongunk story. The Onepenny women were attached to a prominent English colonial family, the Whitings, but they were also well rooted in their Native community. In the late seventeenth century, one of the granddaughters of sachem Onepenny gave birth to a boy, Scipio Twoshoes. His father was African. While he was loved by his grandmother, who left him land in the South Meadow of Hartford, and his aunt, who left him all her possessions and land in Wongunk, Scipio never took his place among the Wongunk people living in what is now Middletown. The Onepenny story is ultimately about creating an identity that adapted to change and preserved status in an increasingly complex and colonized world.

4.22 Katherine Hermes (CCSU, History), Cheryl Meyer (School of Professional Psychology, Wright State U) & Tarnish Irani (Buffalo State U) Explaining Suicidal Motivation, 1617 to 2017 and Beyond

Based on findings in our new book, *Explaining Suicide: Patterns, Motivations and What Notes Reveal* (pub. Elsevier, Jan. 2017), this presentation will examine what has been said about suicidal motivation in North America from the colonial era to the present, and what our research revealed about why people in the present decide to take their own lives. We will present our model for understanding motivation so that, going forward, professionals who work toward intervention and prevention can do so with more information about those who complete a suicidal act.

3.52 Heidi Hughes (CCSU, Management & Organizations) Looking Inside Social Capital

In career studies, social capital is viewed as a network to material and symbolic goods that can help us achieve career success, or, can in itself be considered a symbol of success, such as wealth, power, reputation, and status (Bourdieu in Richardson, 1986; Coleman, 1988; Lin, Cook, & Burt, 2001). Research on social capital is typically viewed through one of two lens: social network analysis (SNA) and rational action theory (RAT). Though we understand the importance of social capital, to date, there is a paucity in understanding the subjective nature of social capital, such as how individuals accumulate it in the first place. The purpose of this paper is to use empirical evidence to look inside the 'box' of social capital. Data used to construct meaning came from field notes on an eight-month ethnographic study following observations and informal conversations, research memos, semi-structured interviews, and secondary data from the gyms website and fitness industry publications (Hammersley & Atkinson, 2007; Holliday, 2007). This paper outlines three key findings that help us look inside the subjective nature of social capital. One - the ability to accrue and use social capital relies on symbolic interaction between members of shared group understanding. This also helps demonstrate the importance of looking at social capital through meso-level groups (Fine, 2010) rather than macro-level groups as is common in SNA (Salvini, 2010). Two - capital accrual (or denying the access to accrual) is moderated through implicit personality. Three - though some individuals may purposefully set out to create or use social capital, the unconscious (Read, Fordham, & Adler, 1966) has a role in the accumulation and use of social capital.

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1.52 Keith Michael Hughes (CCSU, Communication) The Effect of Academic Coaching on Student Retention at one New England Community College

The retention of community college students is a national issue in the United States. Fowler and Luna (2009) define retention as a student's 'continued study until successful completion'. The National

Center for Educational Statistics (NCES) reported in 2014 that 80 percent of community college students seeking degrees and certificates did not successfully complete their programs within the normal time (3 year) expectancy. This study focused on the effectiveness of the academic coaching program at a New England Community College. The academic coaching program was developed to increase student retention. Between 1,200 and 1,500 students at the college are notified of low academic performance by letter and email each semester. The academically low-performing students need to follow-up with student retention services. Each semester up to 60 of these low performing students have the opportunity to build a relationship with an academic coach. Quantitative analysis, using chi-square was used to study 524 unique student records who had been assigned an academic coach. The records were taken from the college's student records database which is maintained by the college. The study concluded that students who met at least one time with their academic coach were more likely to stay enrolled in college. Variables that were studied included: number of meetings a student had with a coach, the amount of time in minutes that a student spent with a coach, the student's age and the student's gender. This study helps confirm part of Vincent Tinto's (1993) theory 'A Theory of Individual Departure from Institutions of Higher Learning' that 'institutional commitment' is important to student retention. The long-term goal of student success and commitment from members of the college teaching and support staff leads to a feeling of 'institutional commitment'.

4.52 Julia Kara-Soteriou (CCSU, Literacy, Elementary & Early Childhood Education) & Linda Clark Intervention and Remediation before Taking the Connecticut Foundations of Reading Test

This presentation will focus the introduction of the Foundations of Reading Test (FRT) as a certification assessment in Elementary Education. During the presentation we will share results from a study in which we (1) developed a statistical model to predict the performance of undergraduate students on the FRT; (2) identified students at-risk of failing the FRT; and (3) offered interventions before students took the test. We developed the model using existing institutional data related to academic performance, such as SAT scores and Praxis I scores, final grades on literacy courses, and Grade Point Average (GPA). We also used data associated with demographic characteristics. Through logistic regression we developed a model which identified the students' GPA and final grade on a specific literacy course as predictors to passing or failing the FRT. For two years we used the model to identify those at risk of failing the FRT and we invited them to attend voluntary, free intervention sessions. The first year, the intervention was offered hourly once a week for 7 weeks during the regular semesters. The second year, the intervention was offered for 3 consecutive days (two hours daily) at the end of each semester. The statistical model applications and the intervention results from year 1 will be discussed in relation to the effectiveness of higher education institutions to help students get certified in their fields of study.

4.72 Mizan R. Khan (ECSU, Mathematical Sciences) & Karen Rogers (Emory U) On White's characterization of empty lattice tetrahedra

An empty lattice tetrahedron is a tetrahedron whose vertices are lattice points, but does not contain any other lattice points. Unlike the case in two dimensions, there is no upper bound on the volume of empty lattice tetrahedra. In the early 60's White gave an elegant characterization of such tetrahedra. We will describe a proof of his result.

1.53 Hak Joon Kim, Carol Geary & Arlene Bielefield (SCSU, Information and Library Science) Bullying in the Library Workplace

The primary purposes of the study were to investigate how often bullying occurs in libraries and whether bullying policies exist in libraries. The first survey questionnaire was sent to library personnel in the six New England states through statewide email distribution lists. Altogether 571 library staff members completed the survey. The second survey questionnaire was sent to large public and academic libraries in New England to see if they have anti-bullying policies in the workplace. The results of the study clearly showed there were significant reports of workplace bullying in all kinds of libraries. Nonetheless, not many libraries have policies that deal with this workplace challenge.

3.22 Yeojin Kim (CCSU, Communication), William J. Gonzenbach (U of Alabama), Chris J. Vargo (U of Colorado--Boulder) & Youngju Kim (U of Alabama)

First and Second Levels of Intermedia Agenda Setting: Political Advertising, Newspapers, and Twitter

In a world of big data, with more information at the audience's fingertips than ever, gatekeepers such as media and political parties still play a huge role in mediating issues to the general public. Recognizing this issue, this study investigated the first and second levels of intermedia agenda setting between political advertisements, newspapers, and Twitter postings (tweets) about Barrack Obama and Mitt Romney during the 2012 U.S. presidential election. A series of computerized content analyses with ARIMA time-series modeling were employed. Our findings will extend agenda-setting theory to the social media environment.

2.14 Steven Kirstukas & Luz Amaya-Bower (CCSU, Engineering)

Comparison of a Computer-Based Grading Scheme to a Manual Rubric for Assessing Solid Models

The same set of 3D solid models created by students were graded manually by an instructor with a rubric and then by a computer program. The rubric was created and used by an instructor not familiar with the computer program. The different philosophies of the people behind the two grading schemes produced some different assessments. As compared to the instructor with the rubric, the computer algorithm greatly reduces grading time, eliminates variability in scoring, and does not miss anything. However, the current subtractive score system used by the computer algorithm may be too severe. Also, if the model shape has significant issues, then model orientation detection by the computer may yield a false negative. The study initiated discussion between instructors as to what makes a good model. Best practices were shared and ideas for improvement of the computer program were generated.

2.02 Michael Knell (SCSU, Earth Sciences) & Jonathan Weinbaum (SCSU, Biology)

A new highly productive bonebed of the aetosaur *Typhothorax*

Typhothorax Cope 1875, is a genus of typhothoracine aetosaur that is currently known from hundreds of osteoderms, but only a handful of relatively complete skeletons, several of which are currently undescribed. Here we describe a new bonebed from a clamglomerate layer / channel sandstone within the Martha's Butte Beds of the upper Sonsela Member of the Chinle Formation in northeastern Arizona. The bonebed is filled with osteoderms and skeletal elements of *Typhothorax*, including a relatively complete, articulated subadult skeleton with skull collected during the Summer 2015 field season. Present in this specimen are two of the currently most complete and best preserved pedes of any aetosaur thus far described. The block removed also contains a part of the skeleton of a second individual with complete, articulated hindlimb and tail. Preliminary analysis of the bonebed indicates the presence of multiple individuals varying in age. Although the bonebed appears monospecific, teeth of multiple taxa are present including; rauisuchids, crocodylomorphs, phytosaurs, theropods and fish, as well as those of unknown affinity. Several theropod dorsal centra were also collected from the locality.

This site presents an unprecedented opportunity to further describe the osteology of *Typhothorax* and potentially understand ontogenetic change in the animal.

1.63 Leona Konieczny & Catherine S. Thomas (CCSU, Nursing)

A Program Innovation: Connecting Service Learning to University and Department Mission and Outcomes

The program innovation was a pilot to actualize components of the university and department of nursing missions that emphasize the value of service to others. The mission of the university reads 'prepares students to be thoughtful, responsible and successful citizens' (CCSU, 2016). The vision of the university is to graduate globally aware students who will contribute meaningfully to their communities as engaged professionals and citizens (CCSU, 2016). The department mission includes the development of social awareness and for students to make 'socially significant and personally satisfying contributions to society' (CCSU, 2016). The experience was consistent with three nursing department program outcomes which are: 'Incorporate inter- and intra-professional communication and collaborative skills into the delivery of evidence-based, culturally sensitive patient-centered care. Provide innovative interventions to promote health and prevent illness in vulnerable populations. Practice from a caring, professional nursing perspective by incorporating the values of social justice, diversity, and global awareness' (CCSU, 2016). Service learning demonstrates benefits for students in terms of personal and social outcomes as well as career development (Bandy, J., 2016). The service learning focused on meeting the public health needs of persons without access to health care in Appalachia. It was exclusive from a specific nursing course, or as replacement for or as a designated clinical requirement. Operationalizing the service learning required the review and approvals from various stakeholders at the nursing department, academic dean, and university levels. A non-profit service organization that offers mobile medical clinics nationally and internationally to under-served populations was identified by the faculty as having congruent mission, and accepted nursing students as direct care participants. It was completed over a four day period in late spring of 2016. Traveling to Appalachia exposed the students to profound regional differences, as the county that the clinic was located in has a poverty level of 20.6%, with 17.6% of the population under the age of 65 who do not have health insurance (U.S. Census Bureau website, n.d.). Appalachia demonstrates cultural differences due to geographic and socioeconomic factors. The outcomes of this pilot include three areas of intercultural sensitivity measured by the Intercultural Sensitivity Scale, student feedback verifying this as a positive and valuable learning experience, and faculty observation of the students' internalization of service into professional nursing identity.

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1.43 K. Niki Kunene, Kamila Zysk & Mame-Fatou Diop (ECSU, Business)

The volitional adoption and non-adoption of electronic Personal Health Records (PHRs) by consumers

The use of electronic health records is believed to have the potential to improve health outcomes for individual healthcare consumers, providers and the healthcare system as a whole. Unlike electronic health records (EHRs) that are created and managed by healthcare providers, personal health records (PHRs) are controlled by the individual consumer and the persons or entities to which they choose to grant access. Studies show, while more healthcare consumers now have access to PHRs, their voluntary adoption is lagging. Yet, our understanding of adoption lag is also lacking. In this qualitative study, we

investigate: (1) how individual healthcare users in Connecticut currently manage their personal health information, (2) whether they have adopted an electronic PHR and the considerations that influenced their volitional adoption or non-adoption of a personal health record. Our findings confirm some what is already understood, e.g. the lack of consumer knowledge about personal health records, and the influence of primary care physician in adoption decisions. Our findings also shed more nuanced understandings, for instance healthcare consumers are only influenced by physicians only when the (explicated) underlying reasons for adoption are perceived to be 'real' or important. We also found new and unexpected understandings regarding how healthcare consumers would like to use PHRs, and the features they desire from PHRs that would impact adoption behavior that, heretofore, do not exist. This is a qualitative study using semi-structured interviews as a data collection technique.

2.24 Mary Patricia Lamberti & Victoria Zigmont (SCSU, Nursing) Sleep Quality in Full time Employed College Students

A cross-sectional survey was collected among undergraduates (n= 598) using stratified sampling. We tested the effect of employment on sleep quality, using chi square analysis and t- tests. Most students (73%) were employed part time. Good quality, sufficient sleep provides the basis for optimal academic and physical performance and is critically and intricately linked with health. Increased financial burden in college creates competing demands. Few studies have investigated the link between employment and sleep in college. Data about college student sleep were examined to identify its relationship to employment. Sleep quality and sleep duration were not significantly different across employment status as estimated with the Pittsburgh Sleep Quality Index (PSQI) (p= 0.855). Poorer sleep quality was associated with missed class due to illness (p<0.013) and fewer months of physical activity (p<0.028). In this study, those reporting substance in order to fall asleep all had poorer sleep quality. Findings in this study differ from others, employment status didn't correlate to sleep quality (p=0.855). Most college students are employed and have poor sleep quality; employment may not be a risk factor linking to poor sleep. Although the students in this study report sufficient sleep quantity, something about their rest is not sufficiently rejuvenating. Further studies examining why students rate their sleep quality poorly would be of interest. Although work status wasn't associated with a difference in PSQI scores, poor sleep quality's link to health is a problem deserving further research.

1.44 Joo Eng Lee-Partridge, Kimberly Maron, Steven Treschitta & Sandra Walker (CCSU, Management Information Systems) Using Data Analytics to Find Opportunities to Improve a Museum's Attendance

This project investigated profiles of members and visitors of the New Britain Museum of American Art (NBMAA). In order to attain information to create patron profiles, a survey was created and disbursed to museum members, visitors, and other individuals. Prior to the creation and distribution of the survey, literature review was conducted to aid in the process of creating and selecting appropriate questions to include in the survey to ensure that useful and actionable information could be gathered. The literature review covered the following areas: understanding the museum audience, experience and expectation management, marketing, and the effect of education and ethnicity on museum attendance. The survey was distributed through the museum's website, an email blast that was sent out by the museum, and various other methods. It was open for six weeks and resulted in 766 valid responses. Responses were analyzed by k-means clustering analysis using RapidMiner. Tableau and Excel were used to visualize the results and perform additional analysis. Areas that were analyzed using the data collected in the survey primarily included demographics, socialization, membership values, and respondents' geographic locations. Data from the museum's POS and CRM systems were also analyzed

to supplement the results from the survey. Results from the survey were used to create a member and visitor persona. Through analysis of the survey it was determined that members of the NBMAA were mostly ages 55 and up, had a household income of at least \$80,000, held at least a master's degree, and lived in West Hartford, CT and the surrounding area. Visitors were commonly ages 45 and up, had a household income of at least \$40,000, held at least a Bachelor's degree, and lived in New Britain and the surrounding area. The greatest barriers to visitation were lack of time and travel distance and the greatest barrier to membership is that the respondent does not visit enough to utilize the benefit of being a member.

4.34 Peter K. LeMaire (CCSU, Physics & Engineering Physics) & Peter C. K. LeMaire III (Chemical Engineering, U of Pittsburgh)
Thermal Studies of Sweeteners

Non-sugar sweeteners have been touted as low calorie, low glycemic index substitutes for sugar. The safety of these sweeteners used in desserts and in baking foods have been touted and also questioned. This paper presents the thermal analysis of common sweeteners under brand names such as Splenda, Equal, Nutrasweet, Sweet 'N Low, Truvia, Stevia in the Raw, Monkfruit Lankato, ZSweet and Agave nectar, to shed some light on the topic. Thermal analysis was done using a simultaneous Differential Scanning Calorimeter and Thermogravimetric Analyzer (DSC/TGA). Heat flow and mass vs. temperature graphs, transition, and decomposition temperatures were obtained. The thermal transitions of various sweeteners and possible implications regarding their use in cooking and baking will be discussed.

2.26 Chee Hoi Leong, A. Russ, A.G. Schifino, Z. McCulloch, J. Melnyk & K. Kostelis (CCSU, Physical Education and Human Performance)
Effect of Calcium and Magnesium Lactate Supplementation on VO₂peak and OBLA

Purpose: Professional and recreational athletes use nutritional ergogenic aids to enhance aerobic performance, facilitate training adaptations, and reduce exercise recovery time. While the use of sodium bicarbonate and beta-alanine as ergogenic aids have been investigated extensively, the effectiveness of calcium and magnesium lactate supplementation on aerobic performance markers (i.e., VO₂peak and the onset blood lactate accumulation) has not been thoroughly investigated. The purpose of this study was to examine the effect of calcium and magnesium lactate supplementation on VO₂peak and the onset blood lactate accumulation (OBLA). Method: Eighteen healthy individuals (24±5 yrs) participated in a double-blind, placebo controlled study and randomly assigned to one of 2 groups: placebo (PLA, n=8), or supplement (SUP, n=10). Prior to and following supplementation, participants performed a graded exercise test on a cycle ergometer to determine, time to exhaustion (TTE), power output, VO₂ and VO₂peak associated with OBLA. Results: There were no significant differences between PLA and SUP in direct markers of aerobic performance (all p>.05). Heart rate at OBLA was reduced by 6±6% in the PLA group post-supplementation compared to pre-supplementation (p<.05). Conclusions: Calcium and lactate supplementation did not present an advantage over a placebo in improving aerobic performance in healthy individuals. The results from this study support those by previous investigators suggesting that there is no physiological rationale for using lactate supplementation to improve performance. Consequently, athletes should explore the use of alternative and/or well-established forms of ergogenic aids to extend the limits of sports performance.

2.27 Chee Hoi Leong, A.G. Schifino, A.I. Weiler & F. L. Diaz (CCSU, Physical Education and Human Performance)
Effect of 6 Weeks of Eccentric Cycling Training on Walking Economy in Healthy Individuals

Low muscular strength is associated with physical decline. Progressive strength training has been demonstrated to improve physical functional outcomes. Because eccentric exercise is a potent stimulus for increasing muscle size, strength and power, it has the potential to serve as a time-effective intervention to improve ambulatory function at lower metabolic cost compared to traditional strength training. **PURPOSE:** The purpose of this study was to examine if a 6-week eccentric cycling training intervention could improve walking economy in healthy individuals. **METHODS:** Seven healthy individuals (six males and one female; age=27 \pm 6 yrs; mass=73.4 \pm 9.7 kg; height=1.7 \pm 0.9m) trained on an eccentric ergometer for 6 weeks (3x/week; 10 \times 30 min; 54 \pm 6% of HRmax). The metabolic cost of walking (Cw) was determined as the net energy cost (J/kg/s), divided by walking speed (m/s) during steady-state walking at 5 walking speeds (0.7, 1.11, 1.39, 1.67, and 1.9 m/s). Cw was assessed one week prior to, and one week following 6 weeks of eccentric cycling training. Cohen's d effect sizes (ES) were calculated for all analyses and ES magnitudes of 0.10, 0.30, and 0.50, were interpreted as small, medium, and large effects, respectively. **RESULTS:** During eccentric cycling training, participants increased work rates from 92.7 \pm 29.7 W to 222.6 \pm 64.6 W, while exercising at 'easy to moderate' exertion levels (11 \pm 2 to 13 \pm 1 Borg-scale units). Following eccentric cycling training, post-training Cw was significantly lower while walking at 0.7 m/s (P=0.03). Although there were no statistical significance detected at the walking speeds of 1.11, 1.39, 1.67, and 1.9 m/s (all P>0.05), the lower post-training Cw observed provide strong evidence for a trend of decreased Cw following eccentric cycling training. **CONCLUSIONS:** These results demonstrate that 6 weeks of chronic eccentric cycling training was effective in improving walking economy, and can be safely administered and tolerated by healthy individuals. To the best of our knowledge, this is the first report of a significant improvement in ambulatory function following 6 weeks of eccentric cycling training in a young healthy population. Improvement in ambulatory function would be beneficial for both aging and athletic populations.

4.33 Melvin Joseph Gerald Lesley, Justin Lipe, Archibald Agyekum-Yamoah, Sean McDarby, Samantha Rubio & Matthew van der Wielen (SCSU, Chemistry)
Investigations of Catalyzed Diboration and Tetraboration of Alkynes and Diynes

The catalyzed diboration of alkynes and tetraboration of diynes have been studied as a means to prepare organic precursors suitable for metal organic framework formation as well as for the formation novel derivatives toward the synthesis of the anti-estrogen drug Tamoxifen via Suzuki coupling. Suzuki coupling competes with protodeboronation in the presence of trace amounts of water however rigorously anhydrous conditions lead to the successful formation products derived from the double Suzuki coupling reaction involving the boryl groups.

1.54 Melvin Joseph Gerald Lesley, David Nelson, Mark Pineau, Michael Taylor, Alia Green, Colleen Welsh, Ericka Barnes, James Kearns, Albin Salazar, Cara Savino (SCSU, Chemistry)
An Undergraduate Laboratory Experience In Inorganic, Computational and Instrumental Chemistry

The hydroboration reaction between thexylborane and p-R-C₆H₆-CN (R = CH₃ or OCH₃) results in the formation of tetrasubstituted aldiminoborane dimers with a rare preference for the air stable trans, syn stereoisomer at the cyclodiborazane core. This reaction has been developed as an upper level undergraduate laboratory experience in inorganic chemistry involving air sensitive synthesis. The products are characterized by FTIR and multinuclear NMR spectroscopy providing hands-on experience in the operation of both instruments. Thermodynamic calculations have been determine for all isomers using Ab initio methods. The complete assignment of ¹H and ¹³C spectra has been accomplished using NOESY and HSQC NMR techniques.

3.53 Yan Quan Liu & Arlene Bielefield (SCSU, ILS) **Current Market Demand for Core Competencies of Librarianship**

As librarianship evolves, it is important to examine the changes that have taken place in professional requirements. To provide an understanding of the current market demand for core competencies of librarianship, this article conducts a semi-automatic methodology to analyze job advertisements (ads) posted on the American Library Association (ALA) Joblist from 2009 through 2014. There is evidence that the ability to solve unexpected complex problems and to provide superior customer service gained increasing importance for librarians during those years. The authors contend that the findings in this report question the status quo of core competencies of librarianship in the US job market.

3.215 Rotua Lumbantobing (WCSU, Social Sciences) **Postseason Outcomes in the NBA: Does a Longer Opening Round Mean Fewer Upsets**

In 2003, the National Basketball Association expanded the opening round of its postseason from a best-of-five format to a best-of-seven format. This paper presents the first quantitative analysis of the two formats and their comparative outcomes. Using a balanced dataset from 1990-2015, I show that the change to a best-of-seven series did not, as was commonly assumed, result in fewer upsets (i.e., the longer series did not 'reward' higher seeds). The paper concludes by assessing the costs and benefits of the longer postseason for the NBA's various stakeholders.

2.06 Sarah E Maurer (CCSU, Chemistry and Biochemistry) **Role of lipids in the origins of life**

The emergence of biological systems from a chemical 'soup' is an event that is only known to have happened once, yet repeating this event would inform the nature of biology, the ability of life to form on other planets, and the prospect of generating truly artificial life. Scientists agree that the interconnectedness of metabolism, information, and containment are essential parts of life represented by proteins, nucleic acids, and cell membranes respectively in extant life. Membranes play a variety of roles, currently being explored by the Maurer Lab. We endeavor to answer the questions: Can membranes protect biopolymers from harmful environments, such as UV light? Using membrane bound UV-absorbers we examined the UV-damage to DNA and proteins with and without membrane protection. UV-absorbers significantly reduces damage to biopolymers, and membranes alone seem to be effective, but less so. Is the composition of membranes dependent on environmental forces? We examined the interaction between membranes, their contents, and the environment. As the environment slowly changes, the membrane composition can adapt by removing or adding membrane-forming material. The biomolecules contained inside of the membrane can also play a role, for example, the encapsulation of the amino acid arginine can prevent the dissolution of membranes when the environment pH is increased. This interaction between biopolymers, membranes and the environment demonstrates the complexity of the chemistry leading to life. Can membranes serve to catalyze biopolymers, such as proteins? Amino acids spontaneously polymerize through cycles of hydration and dehydration, however the dehydration surface is known to impact the rate of the reaction and the polymers formed. The addition of membranes to this process serves as an organizing matrix for polymerization. The type of membrane, as well as the temperature, cycle time, pH, and amino acid are all important variables in this process, with long polymers (>20-mers) produced from non-biological processes. Here we report the latest results demonstrating the various roles membranes would have played in generating biology from chemical systems.

**3.54 Matthew C. McGrath (CCSU, Finance and Law)
The Benefits of Benefit LLCs**

There is a growing interest in social enterprise and corporate social responsibility. Consumers are in favor of it and businesses use it as a marketing tool. Many U.S. states have modified their laws on business entities to permit formation of Benefit Corporations. For these businesses, social enterprise is an integral part of the company's legal structure, not just a policy. They have formally committed themselves to providing benefits to society in addition to pursuing profits for their owners. Twenty-nine states permit Benefit Corporations but only two permit Benefit Limited Liability Companies, although the LLC is the most common form for new businesses. This paper examines available data to show that there is a strong statistical argument to be made that states should permit Benefit LLCs.

**4.53 Pamela Malaspina McKeever and Linda Clark (CCSU, Educational Leadership, Policy & Instructional Technology)
Delayed high school start times later than 8:30 AM and impact on graduation rates and attendance rates**

Objectives: The first purpose of this study was to investigate changes in high school graduation rates with a delayed school start time of later than 8:30 AM. The second aim of the study was to analyze the association between a delayed high school start time later than 8:30 AM and attendance rates.

Design: In the current study, a pre-post design using a repeated-measures analysis of variance was used to examine changes in attendance and graduation rates 2 years after a delayed start was implemented.

Setting: Public high schools from 8 school districts (n = 29 high schools) located throughout 7 different states. Schools were identified using previous research from the Children's National Medical Center's Division of Sleep Medicine Research Team.

Participants and measurements: A total membership of more than 30,000 high school students enrolled in the 29 schools identified by the Children's National Medical Center's Research Team. A pre-post design was used for a within-subject design, controlling for any school-to-school difference in the calculation of the response variable. This is the recommended technique for a study that may include data with potential measurement error.

Results: Findings from this study linked a start time of later than 8:30 AM to improved attendance rates and graduation rates.

Conclusions: Attendance rates and graduation rates significantly improved in schools with delayed start times of 8:30 AM or later. School officials need to take special notice that this investigation also raises questions about whether later start times are a mechanism for closing the achievement gap due to improved graduation rates.

**2.21 Tatiana Melendez-Rhodes (CCSU, Counselor Education and Family Therapy)
Breast cancer: Clinical implications for marriage and family therapists**

Breast cancer is the second leading cause of cancer death in women. Nearly one in eight women will develop invasive breast cancer during their lifetime in the United States. Women diagnosed with breast cancer experience significant stress, and symptoms of depression, anxiety and trauma. Breast cancer is a life threatening illness that can have a negative impact not only for the individual's physical and emotional well-being but also for their families. This study will explore women survivors' experience of breast cancer and the impact and implications of their diagnosis in different aspects and stages of their lives. A qualitative method was used to gain a deeper understanding of the participants' experiences during the course of their illness. The researcher interviewed 20 women who have been diagnosed with

different types of breast cancer. Five themes emerged from the interviews: 1) Impact of diagnosis and self-reflection, 2) Family relationships (woman-parents, woman-siblings, woman-spouse and woman-children), 3) strengths and constraints of social support, 4) navigating the medical and mental health care system and access to social services, and 5) mechanisms of resilience to adversity. In addition, this study will bring into focus women's perceptions on how they and their families might benefit from marriage and family therapy services. Specifically, what topics MFT clinicians should include in therapy in order to address their specific needs given the complexity of their medical diagnosis.

2.00 Charles Menoche (CCSU, Music)

Meet the CCSU iPad Ensemble: Performances of New Music for a New Sort of Chamber Group

The CCSU iPad Ensemble, formed in 2014, has performed locally and was selected to perform at the annual Connecticut Music Educators Association Conference in 2015. A performance of the CCSU iPad ensemble at this year's 2017 CSCU Faculty Research Conference would provide me an opportunity to showcase and, more importantly, share my research in forming, directing, performing in, and writing for this relatively unique ensemble, one that uses iPads as a musical instrument. As an ensemble with basically no instrument-specific repertoire, I have been involved in soliciting new works (which includes a work written for us by internationally-known composer Robert Moran), writing my own works, encouraging students works, finding graphic and aleatoric scores that work for varied instrumentation, and even transcriptions of more traditional pieces. This performance would highlight pieces of the new music that I have focused on since I started the ensemble. The performance will include visual projections of the iPad screens, allowing the audience to see the interfaces of our various music applications and how the performers interact with them. This will include movements from a work written using a 3D printed tactile score that is read by the ensemble using touch rather than eyes. I have presented at several national music technology conferences on my approach to the CCSU iPad ensemble, the challenges, and my new research in 3D printed scores. This performance would share the musical results in this area to date. While chatting with colleagues on campus and throughout the CSCU system, it was clear that many were interested in the ensemble, what it sounds like, how it performs, and what sort of music it creates. My key goal of the creation of the iPad ensemble was to stretch myself as a composer, performer, and teacher. As I developed, I could then stretch my students and, finally, stretch our department, University, and the wider community. I also saw this as an opportunity to demonstrate how CCSU's focus on STEM activities could expand to a STEAM focus (A standing for Arts). To date, this initiative has been quite successful on all fronts. I am confident that this performance will be unique experience and unlike other performances at the conference.

4.12 Charles Menoche (CCSU, Music)

New Music Notations: 3D Printing Solutions to Get 'In Touch' With The (Musical) Tablet

Gesture-based performance applications are increasingly common on tablet devices but present new challenges for contemporary performers, composers, and improvisers. Starting an iPad ensemble in fall 2014, this presenter discovered that the performers found it difficult to read a traditional score while sight-reading, rehearsing, and even performing when using any application that required continuous visual monitoring and interaction. It was essential to find new ways to write and read scores. My solution was to create physical three dimensional notation systems that can be 'read' by touch rather than by sight. These 3D scores allow the performer to 'read' the score with one hand while keeping the eyes free to focus on the other hand's interactions with the visual interface. Through research and experimentation, this presenter has begun to develop new touch notation systems that use polymer clay models, 3D design software applications, and, increasingly affordable and common, 3D printers.

Over the last year, my research on this work has been selected for presentations at the national Association for Technology in Music Instruction (ATMI)/College Music Society (CMS) and Technology Institute for Music Educators (TI:ME) conferences. My research indicates that I am the first anywhere to use 3D printing for writing tactical musical scores. My research was featured in Makebot Stories <http://stories.makebot.com/post/140471473237/music-you-can-touch>. I would welcome the opportunity to share my research locally and to a more diverse audience.

The presentation will open with the following: 1. A brief introduction and overview of 3D printers. 2. Highlights of the background/current state of 3D Printing for the non- professional/consumer market user and, most importantly, representative uses for 3D printing in the arts. 3. What software and hardware tools have I experimented with to date? What has worked? Which experiments have been less successful? The second half of my presentation will focus on some representative scores/excerpts that I have created to date: 1. Six or seven examples that demonstrate the different ways that I have approached three-dimensional tactile musical scores, 2. My process for creating these scores, and 3. The applications and tools that have worked best for each of these various approaches. The presentation will conclude with a few very brief performance demonstrations (i.e., etudes and excerpts) of my actually using the 3D-printed tactile musical scores to make music.

**1.14 Edward Z Moore (CCSU, Engineering), Dowin Boatright, David Ross, Patrick O'Connor & Marcella Nunez-Smith (Yale School of Medicine)
Racial Disparities in Alpha Omega Alpha Membership**

Induction into the AOA honor society at the end of medical school is associated with future success in academic medicine. Are minority medical students less likely than white medical students to be AOA? In this retrospective cohort study of 4655 US medical students, we found that the odds of AOA membership for white students were nearly six times greater than that for black students and nearly two times greater than for Asian students, both significant differences. These findings were based on analysis that controlled for US Medical Licensing Exam scores, research productivity, community service hours, leadership activities, and membership in the Gold Humanism Society, which indicates a commitment to community service. The selection process for AOA membership may be vulnerable to bias, which may affect future opportunities for minority medical students.

**3.12 Steve Muchiri (ECSU, Economics)
Social Cash Transfers and Measures of Well-being: Does Gender Matter?**

The Old Age Pension to elderly South Africans puts a significant cash transfer in the hands of many poor households. This study examines the impact of its age-eligibility status on a number of selected household outcomes, such as food security (for both children and adults), sanitation, source of drinking water and ownership of durable goods. We also examine the extent to which gender influences its impact on household outcomes. We find positive effects on a select number of outcome; however, we note this is more associated with female's age-eligibility status, but not that of males. We attribute these findings to the idea that, due to labor force withdrawal, males' income, and consequently their share of income in the household does not improve with pension eligibility as does that of females, which in turn increases females' share of household income and bargaining power within the household.

**2.15 Pankaj Nagpal (CCSU, Accounting)
Use of Case study assignments in Undergraduate and Graduate Accounting Courses**

In the field of accounting, case study assignments are commonly used in management accounting, given the easy availability of cases from the Institute of Management Accountants (IMA), and even specific journals dedicated to the topic of case research. In contrast, courses such as accounting information systems (AIS) and fraud/forensic accounting either lack good cases, or have cases that are too 'technical' dealing with highly esoteric aspects, such as Internet security, or specific types of fraud. In view of these limitations, I have designed various 'levels' of cases, to use in AIS and fraud related courses. These cases range from short descriptions of fraud, all the way to use of current news articles, from the Wall Street Journal (WSJ) and the New York Times. Internal controls framework, such as COSO, and various fraud related frameworks, are well illustrated and learned through the use of such cases.

2.23 Matthew Orange & Cassandra Forsythe (CCSU, Physical Education & Human Performance) Normative Data for Push-ups in the Standard Position in Females

We are currently collecting data in order to determine categorical norms for college-age female subjects performing standard push-ups to exhaustion. Currently, normative data for this population performing push-ups of this type does not exist. All subsequent studies have investigated the number of repetitions performed using the modified knee push-up method only. The modified push-up technique requires the subject to support a significantly lower percentage of their body mass in both the up- and down-position. Standards based on the modified technique have limited usefulness as references for muscle endurance, especially in females who have the capacity to perform standard push-ups. Considering the significant increase in female participation in fitness, sport, and recreational activities following the implementation of Title IX, it is imperative that normative data regarding upper body muscular endurance of females be established using the same methods applied to males. Additionally, normative values using the standard push-up position in this population may provide a more useful tool for professionals designing effective resistance training programs, and allow them to more accurately assess progression. We will present available data and discuss the progress of the study as of late March.

1.62 Jennifer Ann Ort (WCSU, Nursing) Accountability among Baccalaureate Nursing Students: Definitions, Perceptions, and Engagement Practices

To ensure optimal patient care an especially high level of accountability is required when new graduate nurses enter the workforce. In a study for the Carnegie Foundation, Benner et al. (2010) identified that nurses starting their first jobs were not prepared for clinical practice with the appropriate level of skills and knowledge. Results of this study and pressure from health care organizations challenge nursing educators to better prepare nursing students. In order to increase student preparedness, schools of nursing compel faculty to change teaching pedagogy, curriculum, assessment methods and instruments, and advisement practices (Benner et al., 2010). As accountability in higher education remains a theme in the forefront of public and governmental discussion, the responsibility of positive student outcomes remains the focus and responsibility of nurse educators. Even with defined standards for nursing practice, the definition for nursing accountability remains ambiguous and confusing, creating challenges for nurse educators to prepare nurses who demonstrate and understand the concept of accountability (Krautscheid, 2014). The ambiguity and confusion surrounding accountability also creates challenges for students themselves to understand what being accountable requires and means. Failure to develop and implement a cohesive understanding of accountability results in a lack of connectedness, intercommunication, and consistency in application of teaching and performance between faculty and students (McGregor, 2007). Students may lack an understanding of the importance of demonstrating accountability, or how to be active participants in their educational success to learn or achieve

accountability (Hassel & Lourey, 2005; Nelson, 2007). Little is known about student perceptions or understanding of accountability and their role in achieving it (Hassel & Lourey, 2005; Krautscheid, 2014). The purpose of this qualitative study was to explore, describe, and define perceptions of accountability as described by sophomore and senior nursing students in two baccalaureate nursing programs. Study findings suggested that this group of students understood the importance of accountability but were unable to verbalize a definition, often confusing accountability with responsibility. Students perceived that faculty played a role in their academic success; and, students promoted accountability in faculty and in peers who were less successful academically. Increased excellence in nursing education and accountability of nursing students will benefit the profession of nursing and the public by preparing nurses to be accountable for their practice when entering the workforce, to provide quality patient care, and to meet the expectations of healthcare reform for achieving the desired health outcomes.

3.44 Oluyinka Oyewumi, Maxwell Meadow & Alison Weinstein (CCSU, Geological Sciences) Geochemical Assessment of Trace Elements Concentration in and Rock Units Across Lebanon, CT

Bedrock weathering and soil formation are important geological processes associated with the release of trace elements into the environment. In addition, various human activities further provide anthropogenic release of trace elements to the environment. This project examined concentrations of major and trace elements in topsoil and rock Formations from Lebanon, CT northeastern USA, with the goals of determining: i) weathering rate of rock Formations; ii) relationship between different rock Formations and topsoil geochemistry; and iii) element mobility and their overall impact on the surrounding hydrologic systems. In order to address these goals, rock samples were collected from different rock Formations that include Hebron gneiss, Scotland schist, Brimsfield schist, Lebanon gabbro, Canterbury Gneiss, and Tatnic Hill Formation. In addition, topsoil samples were collected around each rock Formation up to a depth of about 10 cm below the surface. In the laboratory, both soil and rock samples were acid digested and later analyzed for trace and major elements concentrations using both ICP-OES and PW2400 X-Ray Fluorescence Machine. Results indicate a weak to no statistical correlation between rock Formations and topsoil chemistry. Calculation of weathering indices, and A-CN-K ternary plot showed weak to intermediate weathering rates suggesting a dominant influence of anthropogenic activities on topsoil chemistry.

4.43 Elisabeta Pana (CCSU, Finance) and Tarun Mukherjee (U. of New Orleans) Earnings Management Within Bank Holding Companies

In this paper, we investigate the role played by the organizational structure of bank holding companies in the earnings management of bank subsidiaries. Our results suggest that bank holding companies manage their subsidiaries to optimize the reporting outcome at the consolidated level. We find that parent characteristics explain the earnings management of subsidiaries over and above the characteristics of subsidiaries. We also find that the public status of bank holding companies and the distance between subsidiaries and headquarters explain the proclivity of bank subsidiaries to engage in earnings management. Our results yield important insights on the drivers of earnings management within bank holding companies, and highlight the need for their integration in regulatory design.

1.41 Niti Pandey (ECSU, Business Administration) Stakeholder identification versus stakeholder identity: An employee-centric model

As organizations engage in sustainability initiatives (such as green practices, sustainable building, and sustainability goals) they seek increased levels of engagement from their employees, often linking these

goals to employee performance. Most models of stakeholder identification have taken a normative approach, identifying stakeholders from the perspective of the firm's managers and their strategic decisions. This study proposes that where sustainability is concerned, stakeholder identity (the degree to which an individual stakeholder identifies with the sustainability initiative and views herself as having a stake) is a distinct employee-centered construct and is a significant factor driving the levels of employee engagement in sustainability initiatives. Using preliminary interview data from multiple stakeholders in a sustainable development project, this paper develops a new framework for employee engagement in sustainability. This study proposes that there are several factors that determine whether individual employees are likely to perceive themselves as having a stake in sustainable development and that this perception will have a significant impact on their level of engagement with and commitment to their organization's efforts. Implications for successfully creating employee commitment to sustainability efforts are discussed.

3.51 Niti Pandey & Julia Underhill (ECSU, Business Administration) Women, Strikes, and the Early Labor Movement

This research focuses on the role of women in the labor movement prior to 1910 and the rise of AFL unions and how women in the labor movement were portrayed, especially in comparison to women in other social movements of the time. This paper provides an in-depth archival look at the challenges faced by women workers in the early years of the labor movement and their struggle to leave an impact on unions. We begin by examining the early efforts to include women in the workforce in the labor movement, which proved to be a unique challenge and ultimately failed. The research identifies the statistics pertaining to the involvement of women in unions and the workforce during this time period, followed by a critique of the type of jobs held by women at that time, as well as how their social role and identity affected their progress in the labor movement, making it difficult for women to join major unions and organizations such as the Knights of Labor. Next, we analyze how women leaders, both in the labor movement and other social movements, were portrayed that time and continue to be done so today. Finally, we attempt to connect the events from the early labor movement to state of the movement today. The study will conclude with examining how women's memberships in unions have changed and how modern events such as World War II and the Civil Rights Movement altered the role of women in the workforce.

2.08 Jiong Dong Pang & Abigail Wiegand (SCSU, Chemistry) Testing Fresh Produce and Processed Plant Foods in Connecticut for Genetic Modification

The purpose of this project was to test samples of squash, papaya, beet and various processed snack foods that are available to the retail market in New Haven County for the presence of genetically modified DNA. This process was done using the polymerase chain reaction (PCR) to test for two DNA sequences that are common to 85% of genetically modified organisms (GMOs) available for retail purchase in the United States. Namely, these are the 35S promoter of the cauliflower mosaic virus (CaMV 35S) and nopaline synthase (NOS). Special note was made of how the vegetables are labeled, either on their package or in the store, and any correlation between the advertisement and the presence of genetically modified DNA was commented on with respect to regulations on labeling foods 'organic' or certifying that they are free of genetic modification.

2.18 Doncho Petkov (ECSU, Business Administration) On Combining Work System Method and Soft Systems Methodology in IS Development

Information Technology (IT) and Systems Thinking have been associated mainly through two systems methodologies used originally on their own for sense making purposes in more complex software development projects: Checkland's Soft Systems Methodology (SSM) and Alter's Work System Theory (WST). The purpose of this poster is to trace the idea for the application of a combination of WSM and SSM to IS development through the work of the author over the last ten years. The initial publications included the original proposal for exploring the combined use of WSM and SSM in software engineering and a report on the first published controlled experiment showing the benefits of applying WSM in an IT course. Next were the investigated the project contexts suitable for mixing of WSM and SSM in software development. The most recent step is a co-supervised PhD thesis on the combined use of WSM, SSM and Critical Systems Heuristics, completed in January 2017. It developed a framework for enhancing client participation in IS development, harnessing the strengths of systems thinking and Action Design Research, a recent strand in IS Design Science. The framework enables the identification of business and information architecture as well as the generation of use cases from work system snapshots. That resolves a previously reported problem about the transition from SSM analysis to functional modeling in IS development.

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1.42 Olga Petkova (CCSU, Management Information Systems), Hannah Hurwitz & Aileen Yeager (Institute for Municipal and Regional Policy, CCSU)

Implementation of a Service-Learning Framework in Management Information Systems Course

Service-learning is an educational approach that balances formal instruction and direction with the opportunity to serve in the community in order to provide a pragmatic, progressive learning experience. Academic programs in the Humanities like psychology, education, sociology, social work, nursing and many others have a well-established record of research and implementation of service-learning. Service-learning is increasingly applied in business disciplines as well. However, research shows that there is a need for strengthening and better guidance for implementation of service learning in technological disciplines like Management Information Systems, Computer Science and Computer Engineering Technology. The goal of this paper is to analyze the implementation of community engaged service-learning projects in a Project Management for Business course at CCSU. It is offered by the Management Information Systems department in the School of Business. Problems, advantages and benefits for students and community partners are explored during the span of several semesters. The implementation of this service-learning experience evolved from an impulsively organized project aiming to help the homeless people in New Britain, continuing through several more organized attempts, and finally following the iPERCED model offering a systematic structure for service-learning that encourages thoughtful planning and execution. The components of the iPERCED model, loosely

based on Taylor's learning cycles of adults' learning include: investigation, preparation, engagement, reflection & connection, evaluation, demonstration & celebration. Following such a framework permits all participants in the service-learning experience, including faculty, community partners and most importantly students, to engage to their full potential and achieve maximum benefits from it. This paper describes the manner in which service-learning projects were run, the evaluation methods used and problems encountered, and recommends the use of a framework in order to enhance the service-learning outcomes.

1.64 Kimberly Petrovic (SCSU, Nursing)

A Case Study on Nursing Student Involvement in Social Justice Week: Reported Findings

Professional nurses as well as nursing students are advocates for diversity, human rights and issues pertaining to social justice. This includes advocating for access to healthcare as well as the dignified and equitable treatment of all individuals, especially as clients/patients within the healthcare system. During the fall semester of 2015, the author's undergraduate students pursuing the Bachelors of Science in Nursing (BSN) degree and enrolled in a nursing course on health, theory and the family collaborated to present key ideas from each student's research paper as part of the Social Justice Week (SJW) events at SCSU (SCSU). Speaking in front of an audience from across the diverse campus, the author and her BSN students discussed a wide array of topics pertaining to health and human rights. These presentations were well-received and provided the BSN students with the opportunity to advocate for vulnerable populations of individuals.

1.61 Kimberly Petrovic (SCSU, Nursing)

Benefits of Taekwondo Training for Undergraduate Students at SCSU: A Phenomenological Study

The purpose of this research is to discover ways in which training in the Korean martial art of Taekwondo benefits undergraduate (UG) students in dealing with stress. The goal of this innovative approach to learning and stress management is to allow UG students from across disciplines at a metropolitan university to achieve an increased sense of emotional balance, inner peace and overall well-being in body, mind and spirit. This research is multidisciplinary in its inclusion of insights from the tenets of higher education, human development and psychology, nursing, and the art, philosophy and sport of Taekwondo. Consequently, new ideas are established about human development and capabilities with regard to the ways in which UG students learn to use their training in Taekwondo in order to overcome stress, thereby improving upon and maintaining health and well-being in body, mind and spirit. Likewise, research on the benefits of Taekwondo training for UG students provides a tangible means by which students learn to master stressors in life during the years spent pursuing an undergraduate education and in preparation for the transition after graduation into typical 'adult life' involving personal and professional pursuits and responsibilities.

1.22 Paul Petterson (CCSU, Political Science)

The Trump Administration: At War With Politics?

One of the elements that seems to unite the rhetoric and early actions of the Trump administration appears to be a hostility to institutional norms and the idea of politics as deliberative dialogue that seeks whatever common ground can be found between the parties to an issue. My paper will examine the governing practices of the administration, with a focus on how these practices may shift governance from a political model to one closer to command and control, with an active dismissal of political negotiation as a default practice.

3.91 Irena Pevac (CCSU, Computer Science) **Illustrating Polymorphism via Inheritance and Polymorphism via Interfaces**

Polymorphism is one of the three most difficult topics in Computer Science II course. The topic is an important feature of Object-Oriented programming languages. Often former students report that it was one of the job interview questions which is the inspiration to provide illustrations for the various scenarios. The textbooks use bottom-up approach and provide a single example as illustration. That is not sufficient for most students to make proper generalizations for other possible scenarios if they are different from the one presented in the textbook. The objective is to provide additional coverage of polymorphism topic. The two video lessons would strengthen the quality of the Computer Science II course by allowing students to get additional coverage beyond class lessons and textbook coverage. It could also be used in case of class cancellation, in case when students miss the class when the topic is covered, or just as further study of the topic in order to improve understanding. Top-down approach will be applied to cover both polymorphism via inheritance and polymorphism via interfaces. Several possible scenarios as follows will be discussed: Parent and child regular non-abstract classes; Predecessor other than parent and descendant as non-abstract classes; Abstract parent class and two non-abstract descendant classes; Abstract predecessor class and two non-abstract descendant classes; An interface and two classes that implement that interface; An interface and two non-abstract classes that extend the class that implements that interface; and an interface and two non-abstract descendant classes of the class that extends the class that implements that interface. Next, additional requirements for achieving polymorphism will be specified. Finally, at the end, examples to illustrate each of the scenarios implemented in Java will be provided.

1.81 Lazar Pevac (Tunxis Community College, Computer Science) **On raster image rotation algorithms**

The rotation of a raster image by an arbitrary angle is very important operation for many raster manipulation systems. What we need to do is take the color values at every (x,y) location, rotate it as needed, and then write these values in the new location. Multiplying each pair (x,y) with rotation matrix and rounding to closest integer will cause missing dots in the rotated image. It can be corrected by oversampling initial image (assuming each pixel is nxn square of smaller pixels). The other way is to invert problem calculating for every destination pixel what would be corresponding source pixels. The other approach is to decompose rotation matrix into product of 3 shear matrices. In such case it is necessary to shift each image row (or column) for certain number of pixels 3 times in the sequence. We can lower number of matrices to 2, but in such case one matrix will be of shear + scale type. In any case destination image will not have missing dots. My approach employs Bresenham's line algorithm and requires one pass only.

2.04 Jennifer L. Piatek (CCSU, Geological Sciences), Ian Murphy (CCSU), Livio L. Tornabene (U of Western Ontario) & Nadine G. Barlow (Northern Arizona U) **Thermophysical Characterization of Well-Preserved Impact Craters on Mars**

The physical properties of impact craters and their ejecta deposits provide a baseline for better understanding the formation of these geologic features; characterization of such deposits, however, can be complicated by the effects of later erosional/depositional processes that modify the surface. This work is part of an ongoing study to identify and examine the characteristics of the least-modified craters on Mars using both visible and infrared wavelength satellite datasets: here we present results from mapping using thermal infrared data from the Thermal Emission Imaging System (THEMIS) instrument

onboard the Mars Odyssey spacecraft. Craters for study were identified using a range of criteria typically associated with craters that have undergone little modification by other processes. THEMIS nighttime thermal IR images for each crater were first processed to determine a surface temperature in each image pixel, which is then used to estimate a value for the thermal inertia (using modelled values that consider elevation, latitude, time of year, and time of day). The thermal inertia is a measure of how fast material at/near the surface changes temperature due to daily solar heating and subsequent nighttime cooling: this quantity is related to the composition, particle size, and packing density of surface material down to ~10 cm depth. The resulting quantitative images are then mosaicked and map units defined based on variations in thermal inertia values. Statistics from map units are used to identify the physical properties of the materials within each deposit. Maps for several craters of diameter ~10 km show distinct variations in thermal inertia that are related to impact processes. Material near the crater forms a coherent deposit that often has a clear thermal margin, while more distant ejecta forms a discontinuous radial deposit. While these radial units are present at all mapped craters, the thermal inertia values vary, suggesting that both deposition (addition of fine materials like dust that lowers thermal inertia) and removal of material (exposing higher thermal inertia surfaces) are contributing factors in impact events. Continued work will expand to larger, more complex craters, and compare thermal infrared results to maps of surface morphology based on very high-resolution visible images. This comparison will allow us to compare the surface character to that of the near subsurface, further constraining the processes involved in high-velocity impacts. (This work is supported by a grant from NASA's Mars Data Analysis Program.)

1.74 Zbigniew Prusak (CCSU, Engineering)

Introduction to Global Engineering Through Use of Standards and Cultural Differences

Use of selected engineering standards to introduce students to engineering aspects of business environment in global manufacturing. Classes are comprised mostly of students who to date received mostly American education and their familiarity with different cultures, foreign languages and foreign technical cultures is extremely limited. Background of the need for inclusion of global aspects of various engineering and technical cultures in engineering curriculum is presented along with results of surveys on various impediments to successful business collaboration on international level and within multinational companies. One of the primary obstacles in smooth functioning of an engineering venture is lack of knowledge of local standards and technological customs. Almost all CCSU graduates of Mechanical and Manufacturing Engineering Technology programs find jobs within the state, which is one of the highest income areas in the nation and one of the most industrialized regions. It is home to a variety of companies of all sizes, which are involved in businesses ranging from high tech to traditional subcontracting; OEMs and suppliers of components to heavily globalized aerospace and automotive markets and heavily regulated medical market. In the course described in this presentation, teaching Geometric Dimensioning and Tolerancing (GD&T) standards, their meaning and applications is based on the current ASME Y14.5 standard. Some aspects of its international counterpart, set of ISO standards, are also taught. Where appropriate, examples of common practices from selected countries and their national standards are included as well. Selection of countries was based on importance of business ties of aerospace industry: one of the leading industries of the state of Connecticut. Additionally, cultural and historic differences in matters as basic as writing numbers, abbreviations and engineering symbols, as well as some most poignant differences in common nomenclature and drafting assumptions are also addressed. Selected topics of assumptions (things that are not written on engineering print yet universally or locally understood) are also covered. The examples include various aspects of tolerancing, general tolerances of non-toleranced dimensions, and surface conditions descriptions and assumptions.

Results of tests designed to gauge the incoming and end-of-course knowledge of SI and some basic differences between American and foreign technology-related customs are also presented.

4.24 Christopher Pudlinski (CCSU, Communication) Moments of silence on a peer support warmline

This conversation analytic study examines the role of silence in turn-taking on a helpline, which provide peer-to-peer telephone support within the community mental health system. Four different helplines (or warm lines) in the northeastern United States were observed and selected phone calls were recorded at each of the sites. 57 phone calls are included in this data set, with the shortest call being 49 seconds and the longest lasting 50 minutes. For the purposes of this study, I categorized any silence/pause of a second in length (or more) during which no other audible activity was being done by the caller or call taker. Over 1050 such silences were found in nearly 13 hours of telephone talk. The variation in such silences across is noticeable. While the longest call had 93, one 24 minute call had 67 and another 27 minute call had only 1. Many of the silences occur in typical sequential environments: at the seeming end of a topic, as a pre-closing, when an account for impending silence is given ('hold on a second'), and prior to dispreferred responses to questions or advice. However, other unique aspects were exhibited. Phone calls that dealt with difficult situations or emotion-laden topics had more frequent silence, such as the 68 found in a 12 minute long call with a depressed caller. In other cases, certain callers typically took longer than a second to take their next turn, regardless of emotional affect or interactional difficulties. The clustering of silences in certain parts of certain phone calls is also examined. It is thought that the nature of these warm lines, with call takers trained to listen first, may be one explanation for the frequency of silence in this context.

3.32 Shouhua Qi (WCSU, English) Adapting Western Classics for the Chinese Stage

Early 1907 a group of Chinese students in Tokyo, to raise funds for the victims of a catastrophic natural disaster back in the home country, staged their adaptations of *La Dame aux Camellias* and *Uncle Tom's Cabin* to enthusiastic audiences of Chinese, Japanese and Westerners. This marked the birth of modern Chinese drama, known today as 'spoken drama,' as opposed to traditional Chinese drama which features a mix of singing, dancing, acrobatics, and elaborate face-painting to signify age, gender, and character (good/bad). The backdrop of this 'dramatic' development is the post-Opium War China where patriotic young intellectuals were frantically searching for ideas and ways to save and renew their country. The new 'spoken drama,' adapted/appropriated from the West, would form an important part of a larger socio-cultural movement to awaken the spirit of the masses, to cure the many ills such as oppression of women, and "ironically" to resist the aggressions of the West. Since then, from early 20th century onwards, over one hundred years of adapting Western classics (e.g., Henrik Ibsen's *A Doll's House*, Eugene O'Neill's *Desire Under the Elms*, Arthur Miller's *Death of a Salesman*, Samuel Beckett's *Waiting for Godot*) for the Chinese stage bespeaks a history of uneasy trans-lingual/trans-cultural fusion of East and West complicated by tensions between art and politics, tradition and modernity, and a cluster of other socio-cultural determinants. The book, as planned, uses a combined chronological-topical approach in an attempt to unpack the complex dynamics between art and politics; texts (dramatic/theatrical and socio-historical), contexts (indigenous and foreign, Chinese and Western), intertexts (Western classics and Chinese remakes); and dominance and resistance (of language, culture, and ideology) across major historical periods from early 20th century all the way to the post-Mao China (1978-present). The presentation at the 2017 CSU Faculty Conference will be a progress report on this multiyear book project that has benefited from the CSU-AAUP Research Grants.

2.07 Thomas R. Rein (CCSU, Anthropology)

Exploring the influence of locomotion and evolutionary history on the shape of fragmentary fossils

Hominids (i.e., great apes and humans) vary in their performance of positional behaviors and in overall hand use. This behavioral diversity has been previously linked to differences in the appearance of hand bones including the third metacarpal. These shape differences have the potential to enhance our understanding of how extinct hominid species moved around or, perhaps, used their hands during the manufacturing of stone tool technology. However, the incomplete nature of the primate fossil record presents a challenge to paleoanthropologists, and fragmentary fossils may not present the same functional and phylogenetic signals present in complete bones. The main objective of this study was to examine what can be inferred regarding the locomotor behavior and evolutionary relationships of extinct hominid species using different aspects of the third metacarpal. Fourteen 3D landmark coordinates were collected on the proximal and distal articular surfaces of third metacarpals representing four hominid genera. Principal component analysis of the complete 14 landmark shape configurations separated all genera from one another based on variables such as relative bone length, joint size, and the presence or absence of a styloid process. Furthermore, mean species Procrustes distances derived from these shape configurations clustered genera in a manner reflecting inferred phylogenetic relationships. This was not the case for separate analyses of only the proximal or distal joint configurations. For example, examination of only the distal articular surface provided a clear functional signal related to knuckle-walking not found in the 14 landmark configuration and did not present a phylogenetic signal. The results of this study illustrate the complex interplay between function and phylogeny in the evolution of third metacarpal shape with implications for interpreting the hominin fossil record. Depending on which aspect of the bone is recovered in the fragmentary fossil record, researchers might reach different conclusions about the inferred behavior and evolutionary relationships of extinct species.

4.14 Tina Rice & Eleanor Thornton (CCSU, Design (Graphic and Information))

The Skinny Grid: Contemporary web development for graphic information design

The Challenge: Learning web design can be an uncomfortable new challenge for many design students; most start with little or no knowledge of coding a website. Unlike print design, they cannot drag and drop text, photos and vector graphics to build a website. The best solution is for them to learn the grid framework for responsive design using the building blocks of HTML5 and CSS3.

The Tech: We start with the mechanics of HTML and CSS through strategically planned exercises. In the process we discuss web and graphic design theory, typography, user interface design and the responsive grid based framework. Using The Skinny Grid, a 12-column framework I built to teach responsive web design, students are able to grasp and build their own websites with a solid foundation in contemporary web development.

Collaboration: To break up the technical discussion of building a website students work in groups and are given design specific research assignments. This promotes student engagement, community building and peeks enthusiasm in the ever-changing field of web design. They come to appreciate the various levels that are involved in front-end web development and the rich online community available to help them along the way.

Community Engagement: Over the years I have moved away from product oriented projects to artistic and community engagement assignments. Projects range from a local pottery school and studio, a bicycling advocacy group, and the green initiative project. Each project starts with group research and presentation. Once research is complete students design a wireframe of their website using Adobe Illustrator. Guided peer critiques are part of the process before building their sites.

Conclusion: Through research, peer critiques and using a web based framework structure, students build confidence, start to think strategically, and move forward in their path to becoming web designers.

**2.17 Karen J. Riem, Carol Ciotto & Claude Abbott (CCSU, Special Education & Interventions)
Welcome to the Virtual Social-Emotional Academy: Integrating Information Technology in Teacher Ed**

In response to Social-Emotional Learning (SEL) needs of CT teachers and students and the demands of a state mandate, colleagues from local schools and agencies joined university faculty from all levels of Teacher Education, Special Education, Physical Education, Counselor Education plus Marriage & Family Therapy and Social Work licensure programs to co-construct a set of SEL-related content learning modules. Creative collaboration with Instructional Design colleagues transformed the information, case studies, video clips, reflective activities, and other materials into an integrated, interactive, and engaging course anchored by a 'Virtual Social-Emotional Academy' to be accessed on-line as self-paced learning or as supplemental material within a variety of Teacher Education Program courses. Presenters will share examples from the digitally-enhanced course, describe the multi-disciplinary design process, identify lessons learned, and propose next steps.

**4.54 Anurag Rimzhim, Marianne Fallon, Caleb Bragg, Matthew Heinly, Rebecca Boncoddio & Carolyn Fallahi (CCSU, Psychological Science)
One Psychology Department's Curricular Assessment Initiative**

There has been an ever-increasing emphasis on assessment in higher education (Dunn, Baker, Landrum, Mehrotra, & McCarthy, 2012). Assessment, done well, serves many purposes. It helps a program or curriculum evaluate whether it is meeting its goals and learning outcomes by providing evidence about students' learning and effective teaching. It also provides evidence to various stakeholders both within and beyond a program, such as students themselves and their professors, university administrators, parents, and accrediting and funding agencies. Effective assessment requires a systematic approach and thorough planning (APA, 2013; Pusateri, 2009). We report the planning, design, and results from a curricular assessment initiative that the department of psychological science at CCSU undertook for its psychology major program. With student learning as our paramount goal, we employed a 'backward design' (Wiggins & McTighe, 1998) that advocates first defining students' learning outcomes, then specifying what counts as satisfactory evidence of learning, and lastly designing students' learning and instructional activities accordingly. First, we ensured that the psychological science program has appropriate learning goals and achievable learning outcomes. Next we constructed curriculum maps that specified whether and to what degree various courses met our program's learning outcomes. This process ensured a coherent and aligned curriculum. Next, instructors who taught different sections of a course collaborated to construct common syllabi containing core topics, learning outcomes, and resources. From this common starting point, faculty created rubrics to assess 'skill-based' outcomes and an assessment instrument of a multiple-choice format to assess 'content-based' outcomes. Rubrics were used to assess and compare skill learning across semesters. The content-based assessment instruments were administered as a pre-post course-embedded design to assess content learning across the semester. Currently, we are in the fourth semester of implementing our assessment project. Results based on the assessment data from the first two semesters showed that students' learning for content-based outcomes significantly and strongly improved over the semester. Further, students' skill-based learning in a two-semester course sequence significantly improved from one semester to the next. We used item analysis and reliability measures to identify ineffective assessment items. We are currently in the process of sharing the results with our faculty members to obtain their feedback and comments. Based on their feedback and the statistical analyses, we will modify assessments and provide feedback

for more effective instructional practice. Our presentation will elaborate on our assessment initiative, results, and future steps.

**1.82 Krishna K Saha (CCSU, Mathematical Sciences) & Suojin Wang (Statistics, Texas A&M U)
Comparing Success Rates of the Chemotherapy Treatments for the Patients with Multiple Myeloma**

Interval estimation for the risk difference in the correlated binary data is often an important problem in many biomedical applications. For instance, in the study of cancer and leukemia group B randomized trials (Cooper et al., 1993), it is often of interest to compare two chemotherapy treatments with respect to success rates of the patients with multiple myeloma who survived at the end of this study. This paper investigates the interval procedures developed for estimating the difference between the success rates of the two chemotherapy treatments in this study. An extensive simulation study is conducted for the purposes of evaluating and comparing the performance of the proposed intervals, in terms of coverage and expected lengths. An application to chemotherapy treatment data is used to illustrate the proposed methods.

**3.74 Rae C. Schipke (CCSU, English)
Toward an Understanding of How Social Media Can Improve the Flipped Classroom**

This paper discusses the need to expand upon the pedagogical components of the flipped classroom model to include what is known about motivation as it relates to social media in order to increase student success in the classroom. It begins with an explanation of the need for the flipped classroom model to include social media and situates social media in the larger context of socially-based technologies. It continues with what the research tells us about social media and motivation with respect to user participation, and it concludes with suggestions for integrating social media use motivators into the flipped classroom curriculum.

**2.2 Divya Sharma & Kim Marino (WCSU, Justice and Law Administration)
Youth Development Unit at Garner Correctional Institution: Methodology, Findings and Conclusions**

This study evaluates the Youth Development Unit (YDU) program at Garner Correctional Institution located in Newtown, Connecticut. The YDU is designed to rehabilitate and educate young males (18-21 years), who are Security Risk Group (SRG) affiliated, through education and social learning. The participants move through five phases of the YDU program that have specific restrictions, conditions and incentives. At the start of this study, there were 12 participants in the program, while 19 others had completed it since it was started in 2013. The primary data were collected from educational and custodial staff. By the time this paper was being written, Phases 2 through 5 of the YDU were moved to another location and only Phase 1 remained at Garner. The name of the YDU was also changed to the Mandated Education Unit (MEU). Given the small sample size and gaps in the data, it is unreasonable to draw too many broad conclusions and generalizations, but despite these limitations, this study provides useful insights about the program and the people involved. As MEU programs in Connecticut have the same objectives, this evaluation could serve as a foundation for future research. To do so, it is imperative to identify variables of importance and keep systematic (readily available and accessible) data, update information on each participant, and analyze the data over a period of time.

**3.42 Nimmi Sharma (CCSU, Engineering & Engineering Physics) & John E. Barnes
(NOAA/ESRL/Global Monitoring Division)
Laser Radar Detection of Long-Range Atmospheric Dust Transport**

Laser Radar, or Lidar (Light Detection and Ranging) was used to detect high-altitude dust layers which were transported long distances by atmospheric circulation. Detection was accomplished by transmitting laser pulses into the atmosphere and recording the intensity of the side-scattered echo created when the pulses encountered particles suspended in the atmosphere. Data were then analyzed to remove contributions from background light and scattering caused by air molecules. Origins of the detected dust layers were derived from computations of back-trajectories of air parcels.

2.12 Rahul Singhal (CCSU, Physics & Engineering Physics), Sam Chiovoloni (CCSU), Cristaly Moran (NVCC) & Peter K. LeMaire (CCSU)

Process optimization of $\text{LiMn}_{2-x}\text{Fe}_x\text{O}_4$ (0 $\leq x \leq$ 0.5) cathode materials for chargeable batteries

Li ion rechargeable batteries are of interest from last couple of decades due to its wide range applications from kids' toys to hybrid electric vehicle. There are so many issues related to environmental and performance of Li ion rechargeable batteries. We are working towards the process optimization of cathode materials for Li ion rechargeable batteries. We have synthesized $\text{LiMn}_{2-x}\text{Fe}_x\text{O}_4$ (0 $\leq x \leq$ 0.5) cathode materials by sol-gel method. The synthesized materials were characterized using XRD, DSC and TGA. Our objective is to optimize the synthesis conditions to synthesize the cathode materials in bulk. In this study we are finding the co-relation between the DSC/TGA and XRD data. The synthesized materials were annealed at various temperatures based upon the peaks observed from DSC and TGA. After annealing the materials at a particular temperature, XRD was recorded. The relation between DSC/TGA, XRD data and optimum annealing temperatures will be discussed.

1.23 Robbin Smith (CCSU, Political Science) **Revisiting the 2016 Elections**

In the early summer of 2015, many believed that Donald Trump had no chance of advancing to the Republican Primaries. His favorability ratings rested at 16%, while seventy-one percent of the public viewed him unfavorably. Moreover, not very many party loyalists from either side, nor the professional political analysts, took him seriously. And yet, within 18 months, he would be the 45th president of the United States. What happened in the 2016 Presidential Election? What happened in a few key states? And what did the politicians, the media, the Clinton Campaign, and the political analysts miss?

4.21 Amy B. Smoyer (SCSU, Social Work) **The Prison Nourish Project: Food in the lives of HIV-positive prisoners**

There are approximately 2 million people incarcerated in the US and 1.4% of these individuals (about 22,000 people) are known to be HIV positive. This project builds knowledge about the prison experiences of HIV-positive people, and the impact of confinement on health and psycho-social outcomes, by analyzing experiences with food and eating while incarcerated. Indeed, food research has been used to understand identity, relationships, and culture across time and place. Interviews about prison food were conducted with 20 incarcerated and formerly incarcerated HIV-positive people. Three themes surfaced in this data: perceptions of wellness, stigma, and hunger. Narratives about wellness reflect an ambivalence about weight gain in the context of HIV and addiction. Participants also describe a defensive approach to their health which focuses on healthy eating. Findings about stigma and exclusion suggest improvement from the beginning of the epidemic when HIV status of prisoners was under-protected and the population was highly vulnerable. Still there is considerable concern about

disclosing HIV status. Finally, stories about prison food hustles illustrate how hunger may elevate HIV risk behavior. Taken together, these findings can inform social work practice with incarcerated and formerly incarcerated people living with HIV.

4.61 Young Moo Sohn (CCSU, Engineering), Amit H. Varma & Robert J. Connor (Purdue U) Effects of Realistic Heat Straightening Repair On Damaged Steel Beam Bridges

During actual heat straightening in the field, it is not uncommon to observe applied temperatures being both much higher or lower than recommended, over straining, mechanical hot or cold bending, or multiple heat straightening in the same spot more than three times. Experimental investigations were performed to evaluate the effects of such variations on the material properties and serviceability performance of steel beam bridges. Serviceability performance was compared by measuring midspan deflections by subjecting static loads simulating the AASHTO 2007 HL-93 live load during all the stages of testing. Impact damage was simulated statically damaged using a hydraulic actuator and subsequently repaired using heat straightening by applying Vee heats and restraining forces in the damaged region. The damage and repair parameters considered in the test were restraining force, maximum heating temperature, and number of multiple damage-repair cycles. Specimens subjected to overheating (up to 1400 °F) during repair and those subjected to heating up to the accepted limit of 1200 °F had similar structural properties and fracture toughness values after repair. Specimens subjected to three damage-repair cycles, and those subjected to only one damage-repair cycle had similar structural properties and fracture toughness. However, specimens subjected to mechanical hot bending, i.e. heat straightening repair with underheating (temperature less than 1000 °F and excessive restraining force over 50% of the plastic moment capacity of the section), showed the lowest fracture toughness values. In serviceability performance, heat straightening repaired girders and undamaged girders showed similar midspan deflections under the AASHTO 2007 HL-93 live loading.

3.71 Barry Sponder (CCSU, Educational Leadership/Educational Technology) Training Indian University Professors to Use Flipped Learning Instruction

Since 2014 Dr. Barry Sponder has been training professors at several Indian Universities to use flipped learning methods and materials for their courses. In May 2016, as a recipient of an Indian Global Initiative of Academic Networks (GIAN) grant, Dr. Sponder delivered a well received, ten day Educational Technology & eLearning Workshop at the National Institute of Technology (NIT) Warangal, to seventy educators from all over India. In December 2016 he gave several eLearning Methods workshops to educators at NIT Bombay, NIT Warangal and NIT Chennai, where participants included teachers from Afghanistan, Bangladesh, Ethiopia, Fiji, Ghana, Grenada, Guatemala, Guinea Bissau, Indonesia, Iran, Iraq, Malaysia, Mauritius, Myanmar, Oman, Nigeria, Syria, Swaziland, Tanzania, Uganda, Uruguay and Uzbekistan. This presentation will report on the eLearning workshops and demonstrate the methods and materials used in the training.

3.72 Barry Sponder (CCSU, Educational Leadership/Educational Technology) & Lisa Pergolizzi Action Research on the Flipped Classroom: From CCSU To Cromwell Middle School

In the summer of 2016, Lisa Pergolizzi, a middle school Math teacher from Cromwell, was enrolled in EDT 598 Inquiry into Educational Technology Research. The course focused on Educational Technology studies and required students to complete a research paper and an action research plan on a topic of their choice. At the end of the semester students were encouraged to take their projects and apply them to their own classroom as action research: a method for educational practitioners to engage in the

assessment and improvement of their own practice. As a math teacher, Lisa has been intrigued about the topic of a flipped classroom, so it became the basis of her research project. Her flipped focus involved recording every lesson that she taught and then making them available to students at home. For first stage of her study Lisa recorded at least three videos per day and posted them along with all her classroom notes, on Google Classroom. This gave her students additional resources for learning at home and the ability to catch up on anything they missed. Students were able to revisit classroom lessons for a second time or as often as they liked, as well as helping them prepare for class activities. According to data collected after the first semester students were very enthusiastic about the process and even offered suggestions for the next stage of her study. This presentation will review Lisa's activities and include some of the materials she made and the student feedback she received.

4.71 Patrick Starvaggi (SCSU, Mathematics)

On the Distribution of Exit Times Similar to Wald's SPRT for the Negative Exponential Model

In this paper we derive the Laplace transform of an exit time similar to the sequential probability ratio test (SPRT) in an exponential model. The stopping time is a two boundary stopping time like the SPRT, however, the boundaries are no longer parallel lines, but intersecting lines. The testing procedure is still the same: accept when the exit is from one boundary and reject when the exit is from the other boundary. The Laplace transform is derived by solving a related difference equation. This technique is novel because it only takes advantage of the Markov structure and does not rely on the typical Martingale methods used for deriving the Laplace transform of many SPRTs. The joint Laplace transform provides the joint distribution of the SPRT and the associated stopped process. Exact formulas for the mean and variance of this stopping time are obtained.

1.31 James Tait, Mathew Connors, Shannon Bronson, Lara Bracci & Ryan Becker (SCSU, Environmental, Geological, and Marine Sciences)

Wave Energy Asymmetry, Seawalls and Beach Erosion on a Fetch-Limited Shoreline

The Connecticut shoreline is located along the northern edge of Long Island Sound, a body of water created by the presence of Long Island to the south. Long Island is frequently credited with protecting the Connecticut coast by sheltering it from open ocean waves. In fact, the presence of Long Island promotes coastal erosion in Connecticut by filtering out long-period, moderately energetic waves that on other coasts act to rebuild beaches after storm-related erosional episodes. Such long period wave fields, known as swell, are typically generated by distant storms through the process of velocity dispersion. Because it is a fetch-limited body of water, local generation of swell with sufficient energy to return subaqueous sediment to the beach rarely occurs. As a result, Connecticut's beaches are chronically erosive, minimizing their ability, for example, to act as buffers to the energy of storm waves. Loss of beach sand resulted in severe wave damage to coastal structures during Hurricanes Irene and Sandy.

2.16 Catherine S. Thomas & Nancy E. Peer (CCSU, Nursing)

Use of Technology in a Pilot Peer Tutoring Program

The objectives of the pilot peer tutoring program were to increase access to student resources with a focus on providing interactive technology based learning tools in addition to traditional learning tools. With the goals of supporting students in developing test taking skills, application of course content, and improvement of program retention rates. Outcomes of the pilot program were assessed with a quantitative approach analyzing the success of the convenience sample of students through the tracking

of course and test grades, usage of all types of learning tools and peer tutoring services. The convenience sample included students from all three levels of the program. Challenges with implementation, for example, time constraints, budget limitations, and availability of peer tutors, impacted the size of the convenience sample. In addition there was minimal use by students at the sophomore and junior levels, while the students at the senior level demonstrated almost triple the amount of hours spent using the learning resources. Results demonstrated that the convenience sample of students favored a mix of traditional and technology based learning tools. The utilization of learning tools differed between the three levels of students in the program. For the senior level students, all were successful in their current semester courses, and all completed the nursing program. Assessment of the sophomore and junior level students is still ongoing. Implications for future practice were expansion of the program for the entire academic year, addition of all types of resources, promotion of faculty engagement and referrals, and to enhance student understanding of and ease of access to technology based resources.

3.84 Thomas J. Vasko (CCSU,Engineering)

A Comparison of Monolithic and Layered Plate Configurations for Containment

Jet-engine fan, compressor, and turbine blades require containment cases to ensure that any released blade fragments are contained within the engine and do not penetrate the case, where they can damage critical engine components or penetrate the passenger cabin. To determine the centrifugal strength of turbomachinery rotors, disk-burst tests are performed in vertical-axis spin pits that require containment cases to ensure the safety of the surrounding test area. In these applications, the containment cases are sized to determine the minimum thickness the case must have in order to contain all rotating-part fragments. The current study compares a monolithic plate with various layered-plate configurations to assess containment capability as determined by the perforation velocity, the lowest projectile velocity that completely penetrates the target. The targets include a monolithic plate and several layered-plate configurations with and without gaps. The projectile is a rigid sphere that impacts the target normal to the surface. The target plates are made of titanium-6Al-4V that is modeled using the MAT_TABULATED_JOHNSON_COOK (MAT_224) constitutive model in LS-DYNA®. This is an elastic viscoplastic material model with strain rate and temperature-dependent stress versus strain curves. In addition, plastic failure strain is defined as a function of triaxiality and Lode parameter, strain rate, temperature, and element size. Results of the study can be used to determine the optimum containment-case configuration for a variety of high-speed rotating components.

1.11 Renata C. Vickrey (CCSU)

The Local Polish Community in Action: Polish Studies Program at CCSU

Connecticut was one of the states that welcomed a considerable number of Polish immigrants in the late nineteenth century. The city of New Britain drew large number of Poles because of abundant employment opportunities. In 1900, about ten percent of Connecticut's population was Polish. Today, the percentage is nearly the same. World War I brought the subject of Poland's independence into focus and American Polonia was very supportive of the independence movement. Connecticut Polonia collected considerable funds to support the Polish cause and were actively involved in recruiting soldiers. In 1918 Poland regained its independence and the postwar economic boom benefited Polish-American communities. In 1939, Poland was invaded by the Germans and later by the Russians and faced oppressive domination. By the time the World War II ended in 1945 about six million Poles had been forced out of their country. Poland had been abandoned by the West and was now under Soviet rule. Most Poles returned to Poland, but many settled in new countries. They included a large number of

intellectuals, politicians, and artists who had a desire to preserve their Polish cultural identity. Many of them settled in Connecticut. In the early 1970s, the Committee on Education and Culture of the Connecticut chapter of the Polish American Congress developed a program to strengthen educational programs about Polish culture. This led to a request that the State of Connecticut fund an undergraduate Polish Studies Program. Central Connecticut State College offered to host this and a resolution was passed by the Connecticut General Assembly that established the Polish Studies Program there. The Program from the very beginning had both academic and community-outreach dimensions. For students it offered courses in Polish/Polonia history, culture, literature and language. The community-outreach work involved evening lectures and cultural events. To support the college curriculum, a Polish Heritage book collection was established at the college library. The program has been and continues to be very successful and judging by the many domestic and international awards it has received, is considered a model program in academia. This paper describes in greater detail the history of the Polish community in New Britain, the civic leaders that helped shape this community, and the evolution of the Polish Program at CCSU. It is a fascinating history of how pride in one's culture can shape the future in a very meaningful way.

4.13 Wujun Wang (CCSU, Design (Information & Graphic)) From Craftsmanship To 3D Render: A Hybrid Package Design Experiment.

Craftsmanship, as a part of design heritage, still finds its way nowadays in college graphic design studies, especially in the foundation part. Meanwhile, the ubiquitous digital technologies are constantly changing our life experience. The design scope, value and creativity have been expanded to a level where technologies have been fabricated into the fine grain of contemporary design. Yet, neither the craftsmanship-based practices, nor the tech-driven trainings are sufficient to prepare design students facing the design job market where multiple design skills are increasingly preferred. Rather, a hybrid approach that collaborates craftsmanship and technologies in a design process can help students accommodate to the demands from this real world. In our design program, the experiment (focusing on craftsmanship, 2D, and 3D) was implemented in a packaging design class. In this class, students carefully rendered using ink and fine brushes, the typography and graphic forms in a traditional manner. This manual process aimed to forge the students the skills in creating forms, controlling materials, and attending visual details. Then the work was digitalized in 2D programs, for preparing the students proficient in Adobe applications. Lastly, Autodesk Maya was utilized to render the package work into a photorealistic 3D prototype for the visual presentation. The 3D exercise helped the students further develop their observational skills and evaluate their design in a broader scope. In the paper, the learning outcomes of this hybrid experiment are outlined, and evaluated based on the trend of today's design job market. The purpose of this paper is not just to introduce a detailed collaborative learning experience, but to rise a discussion of helping students succeed in the earlier time of their creative career.

4.11 Wujun Wang & Eleanor Thornton (CCSU, Design (Information & Graphic)) How Much Can You See? Students Improving Their Observational Skills in Design Foundations

"It is not she [beauty] that is lacking to our eyes, but our eyes which fail to perceive her" (Auguste Rodin). The development of aesthetic sensibilities in Design takes years, and an attention to visual detail constitutes the fine grain of Design, with creative, technical, and analytic skills. In design foundations, nurturing detail-oriented observational skills can be a challenge. Most students are accustomed to a 'default observation': 'looking without seeing.' This habitual observation, deriving from daily experience, can blind students to the depth and complexity of images, hampering them from developing the aesthetic sensibilities necessary to a successful designer. This paper introduces an experimental project

in which students were asked to 'break the frame' of their daily habits of observation, to explore details that are beyond their default attention. Students were put into situations where default perceptions and judgments wouldn't work, and cognitive refinement and focus were implemented. For example, students engaged in a process of creating a microscopic scene or mini-3D object in photo-realistic detail. The goal was to develop a detail-driven observational skill that is not only beneficial to design learning, but also a catalyst for creativity, analytic, and technical practices. This paper describes and defines the notion of 'default perception or cognition' in contemporary graphic/information design, and proposes a series of concrete pedagogical exercises, appropriate to classroom contexts, to instill and refine a design sensibility commensurate with the complexities of our field.

4.31 Erica E Watson (U of Saint Joseph & ECSU, Biology)

Utilizing Social Settings to Detect and Prevent Cardiovascular Disease in African-American Patients

Many African-Americans in the United States have limited access to appropriate and comprehensive healthcare strategies. Cardiovascular disease ('CVD') is a leading health challenge and killer in African-American populations. CVD is particularly threatening for African-American women and men due to non-nutritious meals, inadequate exercise, comorbidity with diabetes, and lifestyle choices. Oftentimes, low socioeconomic status, limited access to exercise facilities, and lack of health education in African-American communities each contributes to CVD.

Hypothesis: African-Americans experience more effective CVD awareness, prevention, and treatment options when those options are discussed as part of health education programs within social settings such as churches and barber shops in those patients' communities. Socialization, spiritual responsibility, and interdependent cultural norms foster environments that are conducive to teaching about and ultimately preventing cardiovascular disease in African-American women and men.

Research Design/Methods: Meta-analysis was performed using a collection of principal journal articles that revealed a wealth of synthesized and applicable channels to inform African-Americans about the risks of and preventive measures for cardiovascular disease. Professional collaboration between colleagues and instructors provided potential avenues for psychosocial approaches to healthcare intervention. Key documentaries showcased research methods and pertinent data.

Results/Summary: One study utilized questionnaires that investigated 'actual' versus 'perceived' personal health in African-Americans and Afro-Caribbeans. With these 6,082 participants reporting their perceived personal health as 'moderate to poor,' cardiovascular disease was most prevalent as a concern in age groups 45-59. Barbers serving as health educators were employed in a different study of randomized trials for a total of ten months in Dallas County, Texas. The 539 hypertensive male patients participated in 10-week increments for the study: 78% were aware of their diagnosis, 69% received treatment, and 38% managed their blood pressure well. In a cross-sectional study of 2,200 hypertensive African-American subjects in the rural south, 37% reported up to an 80% increase in positive healthcare practices (i.e., CVD prevention strategies) secondary to attending church at least once per month.

Interpretation/Conclusion: Significant CVD awareness increased in comparable African-American communities as a result of health education strategies used in churches and barbershop settings. Healthcare education within these cultural climates created multiple positive health outcomes for the African-American subjects. Applying culturally influential health education practices, modeling, and follow-up for African-American patients can significantly improve patients' cardiovascular health.

1.13 Sheldon Watson & Teresita Galarza (CCSU, Educational Leadership, Policy, and Instructional Technology)

The Puerto Rican diaspora and American pluralism: A case study of Borinque mothers in Hartford, CT

This presentation on research in progress shares emerging findings from a qualitative grounded theory case study of mothers of school-age children who have moved from Puerto Rico to Hartford, Connecticut. Semi-structured interviews were conducted with 10 mothers on their experiences in transitioning to life in the mainland United States. Interviews were conducted in Spanish with a bilingual interviewer, recorded on digital video, translated and transcribed in English, then analyzed for patterns and themes using techniques associated with grounded theory. Questions focused on experiences related to cultural transitions, challenges and opportunities, and how participants went about settling in their new surroundings and meeting the needs of their families. Preliminary findings indicate the critical importance of identifying and activating social service resources, as well as recreating a sense of culturally-relevant community and support. These findings are of significance to human services professionals and policy-makers in identifying, developing, and maintaining support structures and systems for diverse community stakeholders. Video of the interviews, with English subtitles, will be made available online as the first step in establishing a digital oral history archive representing experiences of the Hispanic population of central Connecticut.

3.83 Fu-Shang (John) Wei (CCSU, Engineering) Servo-Flap Rotor Design for High Density Altitude Operation

Designing a servo-flap controlled main rotor for high density altitude flight operation can be a difficult task. The extremely complex aerodynamic and dynamic environment that a servo-flap rotor encounters during flight presents certain challenges. High density altitude flight can be achieved through a unique combination of rotor design, servo-flap control, and installed engine power. The aircraft should have conventional helicopter controls mechanically connected to the servo-flaps on the trailing edge of the rotor blades. No hydraulic system is needed to actuate the flight controls. The rotor system includes dual counter-rotating rotors, servo-flaps on the trailing edge of the blades at the 75% blade radius, and in-flight blade tracking capabilities. The helicopter's high altitude performance depends on rotor and engine performance at altitude, sufficient longitudinal stick margin, and autorotation capabilities. Servo-flap and main rotor blades have significant weight and required pitching moment differences. Therefore, a huge control power difference exists when moving a servo-flap versus moving a pitch horn main rotor under steady and 1/rev cyclic motion. The reason for choosing the servo-flap rotor control system in the high density altitude helicopter design is the inherent advantages of lower control loads, lighter weight control systems, lower blade induced vibration, and higher blade control sensitivity. The blade index angle, servo-flap size, and the servo-flap attachment location to the main rotor blade are critical design parameters that affect the aerodynamic forces on both the servo-flap and the main rotor blade. The blade index angle is the blade pre-twist angle that exists between the main rotor blade and hub. At this angle, the servo-flap will generate zero pitching moment on the main rotor blade. There are several unique features making the servo-flap rotor design more attractive to researchers to conduct high density altitude operation. These unique design features normally cannot be found in other helicopters. The first unique feature of the servo-flap rotor control is the blade tracking system, which is a true quasi-steady Individual Blade Control (IBC). This system works by sensing 1/rev vibrations in the fixed system and coupling that measurement with phasing information from the main transmission gearbox resolver to determine which blade is flying out-of-track. A small tracking motor in the rotating system is then instructed to provide an automatic null offset to the servo-flap of the errant blade to bring the 1/rev vibration close to zero. The offset is applied to the control rods actively, in-flight, in parallel with the normal trim and maneuver control system. One of the key design features on the servo-flap rotor operated at the high density altitude is the steady null offset design simultaneously applied to all servo-flaps which increase the flap control range during operation. Another unique characteristic of the servo-flap controlled counter-rotating intermeshing aircraft is its autorotative

characteristics. Autorotation in the existing servo-flap production aircraft is very benign, with extremely low autorotative rates of descent of around 600 feet per minute. Also, the autorotative rpm range is between 100% to 75% of Nr. No other rotor design allows sustained autorotation at 75% Nr with controllability and blade stall not being a factor. In addition, the servo-flap rotor design allows a servo-flap adjustment every time the pilot changes operating aircraft density altitude by 5,000 feet. This is a simple adjustment done on the clevis assembly, which inputs to the servo-flap. Normally, the adjustment takes less than 20 minutes on all four servo-flaps. Once done, the aircraft retains the same autorotative characteristics that it had at sea level at the new density altitude of 15,000 feet. This unique feature makes the servo-flap rotor the best candidate for high density altitude flight operation. Detailed servo-flap rotor high altitude design will be presented in the final paper.

**2.05 Michael Wizevich (CCSU, Geological Sciences), Christian Meyer (Naturhistorisches Museum Basel, Switzerland) & Andreas Wetzel (Institute for Geology and Palaeontology, Basel U)
Geology of Triassic Dinosaur Trackway Localities of the Eastern Alps, Switzerland**

Although the extinction of dinosaurs evokes great interest and debate in the scientific (and non-scientific) community, the origin of dinosaurs is not completely understood and thus is also of great interest to scientists. The late Triassic period was a time of rapid diversification of the three major groups of dinosaurs (Sauropodomorpha, Theropoda, and Ornithischia). We investigated trackways of all three major groups of dinosaurs in late Triassic sediments. They were found in the Parc Ela, a Swiss nature park, at seven different stratigraphic levels within the Kössen Formation and the Hauptdolomit Group (HDG). Unequivocal sauropod footprints are in the lowermost part of the Kössen Formation (Alplihorn Member) in Parc Ela. They represent the oldest record of advanced sauropod tracks in the world. Additional studies were made in the Swiss National Park. A refined model of the environment in which the trackways were made was developed for a better understanding of early dinosaur behavior and to aid in future exploration of dinosaur fossils and trackways.

During the Triassic, central Europe was located along the northern edge of the Tethys sea, a large embayment in eastern Pangea. The area was covered by warm shallow seas and dominated by large carbonate platforms, somewhat akin to the modern Bahamas. During the Late Triassic, 100's of meters of layers (strata) of carbonate (limestone and dolomite) rocks were deposited. Detailed study of the Uglix Plattenkalk Member of the HDG and the overlying Alplihorn Member of the Kössen Formation reveal that much of the strata consists of amalgamated thin beds of muddy limestones with varying amounts of sand-sized grains (packstone-wackestone), including shell fragments, intraclasts and pellets. Erosive bases and fining upward nature suggest deposition by storm events. The relatively low diversity of fauna indicates a restricted marine environment, likely a lagoon. Some of the beds are capped by thin layers of stromatolites and rarely by trampled surfaces (trackways), paleokarst surfaces or red paleosols, indicating periods of subaerial exposure. One layer consisted of organic-rich mud with a thin partially coalified interval. A sample from this bed is awaiting palynological age dating. Exposure surfaces cap shallowing upward sequences, and are interpreted as third- and fourth-order sequence boundaries. Correlation of the sequence boundaries to established global chronostratigraphic boundaries, and more precise dating of the trackways, will be facilitated by the palynological dates.

**1.33 Michael Wizevich, Melissa Luna & Jacqueline Giblin (CCSU, Geological Sciences)
Sediment Source Areas of the Mesozoic Hartford and Pomperaug Rift Basins of Connecticut**

During the Late Triassic to Early Jurassic periods, the Hartford basin filled with ~4 km of alluvial fan, river and lake sediments and basaltic volcanic rocks. The Pomperaug basin in western Connecticut is a small outlier with basin fill similar in age and composition. Discontinuous outcrop and complex paleocurrent

patterns pose difficulties in reconstructing the ancient river systems that transported sediment and filled the basins. In this study detrital zircon U-Pb dating was used to constrain sediment source areas. Zircon is a durable mineral found in virtually all sandstones and can be used to determine source by obtaining U-Pb ages of individual grains. The ages of the zircons can then be matched with ages of surrounding rock units, thus 'fingerprinting' source rocks. To get a broad representation of the Hartford basin fill, samples were taken from the New Haven Arkose (SE-North Haven and NW-Simsbury), the East Berlin Formation (center-Berlin), and the Portland Formation (NE-Manchester and SE-Durham). Two samples of the South Britain Formation (Pierce Hollow and Rattlesnake Members) were collected in the SW Pomperaug basin.

The samples contain diverse populations of zircons, primarily reflecting sources areas affected by one or more orogeny: Alleghanian (270-320 Ma), Acadian (340-400 Ma), Taconic (420-490 Ma), Peri-Gondwanan (550-640 Ma), and Grenville (900-1300 Ma). Grenville age zircons are found in all but the North Haven sample, with a significant number found in Rattlesnake (53%), Pierce Hollow (14%), East Berlin (21%) and Manchester (11%) samples. Cathodoluminescence imaging revealed that some zircons have distinct core and alteration rim components. "Double-dating", where age-dates were taken on the core and rims of the same zircon, reveals that some Grenville zircons have Acadian rims, but others are entirely Grenville age. We interpret the Grenville zircons in samples with significant amounts to reflect a western source.

Samples from the SE Hartford basin near the Eastern Border fault (EBF) contain 70-80% of combined Taconic and Pan-African zircons reflecting an eastern source. On the western side of the basin, the Simsbury sample is dominated (87%) by Acadian ages and is the only sample to contain <10% Taconic zircons (1.5%), suggesting a dominantly western source. The Berlin and Manchester (although taken from near the EBF) samples contain distributions that suggest substantial sediment from both east and west source areas. Pomperaug basin samples also contain subpopulations that reflect eastern and western source areas; most notably the significant number of Grenville zircons from the Rattlesnake Member.

3.92 Robert Workman & Winnie Yu (SCSU, Computer Science) Introducing Coding Using the Python Programming Language

We have been experimenting with using computer passwords vetting as a source of examples when introducing the Python Programming Language. For example many password rules prohibit the use of common words such as 'password' or 'abcd'. Testing for these words requires a knowledge of list processing topics. Another example. Prohibiting or requiring certain characters such as blanks or numbers requires a knowledge of functions, loops and conditional instruction. In our presentation we will discuss our experience with introducing the Python Language as well as the student programming environment used and assignment delivery options.

2.09 Binlin Wu, Xin Gao, Jason Smith & Jacob Bailin (SCSU, Physics) Rapid measurement of meat spoilage using fluorescence spectroscopy

Native fluorescence spectra are acquired from fresh normal and cancerous human prostate tissues. The fluorescence data are analyzed using multivariate analysis algorithms such as non-negative matrix factorization. The nonnegative spectral components are retrieved and attributed to the native fluorophores such as collagen, reduced nicotinamide adenine dinucleotide (NADH), and flavin adenine dinucleotide (FAD) in tissues. The retrieved weights of the components, e.g. NADH and FAD are used to estimate the relative concentrations of the native fluorophores and the redox ratio. A machine learning algorithm such as support vector machine (SVM) is used for classification to distinguish normal and

cancerous tissue samples based on either the relative concentrations of NADH and FAD or the single parameter, redox ratio. The classification performance is evaluated based on statistical measures such as sensitivity, specificity, and accuracy, along with the area under receiver operating characteristic curve. A cross validation method such as leave-one-out is used to evaluate the predictive performance of the SVM classifier to avoid bias due to overfitting.

**2.10 Binlin Wu, Kevin Dahlberg, Xin Gao, Jason Smith & Jacob Bailin (SCSU, Physics)
Optimal biopsy using fluorescence spectroscopy for prostate cancer diagnosis**

Food spoilage is mainly caused by microorganisms, such as bacteria. In this study, we measure the autofluorescence in meat samples longitudinally over a week in an attempt to develop a method to rapidly detect meat spoilage using fluorescence spectroscopy. Meat food is a biological tissue, which contains intrinsic fluorophores, such as tryptophan, collagen, nicotinamide adenine dinucleotide (NADH) and flavin adenine dinucleotide (FAD) etc. As meat spoils, it undergoes various morphological and chemical changes. The concentrations of the native fluorophores present in a sample may change. In particular, the changes in NADH and FAD are associated with microbial metabolism, which is the most important process of the bacteria in food spoilage. Such changes may be revealed by fluorescence spectroscopy and used to indicate the status of meat spoilage. Therefore, such native fluorophores may be unique, reliable and non-subjective indicators for detection of spoiled meat. The results of the study show that the relative concentrations of all above fluorophores change as the meat samples kept in room temperature ($\sim 19^{\circ}\text{C}$) spoil. The changes become more rapidly after about two days. For the meat samples kept in a freezer ($\sim -12^{\circ}\text{C}$), the changes are much less or even unnoticeable over a-week-long storage.

**2.11 Binlin Wu, Jason Smith & Jacob Bailin (SCSU, Physics)
Discrimination of basal cell carcinoma and normal human skin tissues using Resonance Raman Spectroscopy**

Each year in the U.S. over 5.4 million cases of nonmelanoma skin cancer are treated in more than 3.3 million people, of which basal cell carcinoma (BCC) is the most common type. Currently the gold-standard diagnostic method for skin cancer is biopsy, which is invasive, time consuming, and subjective due to judgement of the pathologist. It has been shown that Raman spectroscopy displays a high sensitivity to biochemical changes in tissue during disease progression, resulting in remarkable prediction accuracy when discriminating between normal and cancerous tissues in different cancer types. The Raman Spectroscopy technique is non-invasive, and if adopted, could possibly eliminate the need for traditional biopsy methods. In this study, skin cancer classification based on resonance Raman spectroscopy is approached using nonnegative matrix factorization (NMF) along with support vector machine for performance evaluation. Fifty-five spectra of BCC and normal skin tissues were analyzed and achieved characterization accuracy as high as 98%.

**4.74 Christian Yankov (ECSU, Mathematical Sciences) & Oleg Mushkarov (Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Sofia, Bulgaria)
Existence of Holomorphic Functions on Nilpotent Lie Groups**

We classify real 4 and 6-dimensional nilpotent Lie algebras for which every left-invariant almost complex structure on the corresponding Lie group has non-constant local holomorphic functions. We also obtain a simple algebraic characterization of 2-step nilpotent Lie algebras with the same property.

4.63 Bin (Brenda) Zhou & Jacob Kovel (CCSU, Construction Management) Transportation Project Delivery

Nationwide, state Departments of Transportation (DOTs) apply alternative contracting methods (ACMs) to improve project deliverability. The Connecticut Department of Transportation (CTDOT) is currently conducting three ACM pilot projects using design-build (D-B), construction-manager-at-risk (CMAR), and construction manager/general contractor (CM/GC) to see if any of those methods will enhance deliverability in this state. This research examines effective practices in ten state DOTs that share similarities with Connecticut in terms of geographic location and organizational structure or have well-developed ACM programs in place. Extensive information was collected in six categories: organizational structure, project delivery method selection, contractor engagement and selection, hiring/retention of employees, performance measurement, and rights-of-way and utilities. Findings offer valuable inputs to enhancement and expansion of CTDOT's ACM programs, which is an important element in the state's plan for building a best-in-class transportation system as outlined in "Let's GO CT!".

This research also looks into the engineering education pipeline and CTDOT staffing since project delivery, regardless of traditional or alternative method, requires an adequate workforce at different levels of experience and skill. Historical data on numbers of bachelor degrees conferred nationally in engineering fields shows potential problems in the transportation engineering workforce with 15 to 30 years of experience, who play vital roles in effective project delivery. Salary variations across different regions in the U.S. reveal challenges for hiring and retaining engineers with high-demand skills and experience at CTDOT and in Connecticut. Recommendations are made in the areas of organizational structure, contracting method selection, contractor selection, human resources, rights-of-way and utilities, and project and program performance.

2.25 Victoria A. Zigmont, Peggy Gallup & Stephen Tomczak (SCSU, Public Health) Food Insecurity among Undergraduates at SCSU & Opportunities for Future Programming on Campus

Undergraduate college students at SCSU are not immune to food insecurity. A random sample of undergraduate college students answered a question on food security for the first time in 2016 (n=812). Thirty percent of students had some degree of food insecurity, equally affecting males and females, and lower and upper classman. Those who are food insecure were more likely to also have mental health issues, lower grades, and appear to have a less healthy diet. We will present these findings, and current programs on campus that address food insecurity, as well as opportunities to expand such programs on college campuses.

3.94 Neli Zlatareva (CCSU, Computer Science) Building Applications for the Semantic Web

The latest advances of the World Wide Web, known as Semantic or Linked Data Web, are intended to make the huge repository of information currently aimed for human consumption, accessible to and processible by computers as well. The term linked data refers to a set of best practices (linked data principles) for publishing and interlinking structured data on the web. The implementation of linked data principles heavily relies on Artificial Intelligence (AI), which role is to provide semantically annotated representations and reasoning capabilities for the web allowing computer applications to autonomously navigate and process web contents. Such front-end applications, known as 'intelligent personal assistants' are expected to dramatically extend and improve current web services. Consider the following scenario. A student is looking for a school which would accept most of her credits, offers a program of interest, would allow her to graduate on time and satisfies most of the student's preferences

related to the type and location of the school, financial aid, etc. Using current web services, the student will browse a (limited) number of universities to search through their web sites, which may be considerably different and thus hard to compare. Assume now that university catalogs are not only available on the web in a form of HTML documents, but also published in a machine processible form commonly referred to as a triplestore (a simple knowledge base represented in an RDF format). Assume further that there exists a front-end application which is capable of autonomously navigating through (unlimited number of) universities' triplestores, collecting and evaluating information about relevant programs and recommending one or several programs satisfying the most of student requirements. Building web applications capable of performing such tasks requires: a.) open access triplestores to provide access to distributed digital libraries of various information resources and databases, and b.) novel AI-based search techniques capable of efficiently identifying and processing relevant information to address personalized queries. While a lot of work is underway to address the former requirement, developing and applying novel AI search and reasoning techniques to integrate and process heterogeneous and possibly inconsistent information arriving from multiple data sources is still an open research area. In my presentation, I will briefly discuss recent advances in the field as well as my latest research.

NOTES:

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